

SimFQT

0.1.3

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Tue Dec 20 2011 17:50:04

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1.5 Support SimFQT

1.6 About SimFQT

SimFQT is a C++ project of airline pricing classes and functions, mainly targeting simulation purposes. [N](#)

SimFQT makes an extensive use of existing open-source libraries for increased functionality, speed and accuracy. In particular [Boost](#) (C++ STL Extensions) library is used.

The SimFQT project originates from the department of Operational Research and - Innovation at [Amadeus](#), Sophia Antipolis, France. SimFQT is released under the terms of the [GNU Lesser General Public License](#) (LGPLv2.1) for you to enjoy.

SimFQT should work on [GNU/Linux](#), [Sun Solaris](#), Microsoft Windows (with - [Cygwin](#), [MinGW/MSYS](#), or [Microsoft Visual C++ .NET](#)) and [Mac OS X](#) operating systems.

Note

(N) - The SimFQT library is **NOT** intended, in any way, to be used by airlines for production systems. If you want to report issue, bug or feature request, or if you just want to give feedback, have a look on the right-hand side of this page for the preferred reporting methods. In any case, please do not contact Amadeus directly for any matter related to SimFQT.

2 People

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2.3 Contributors

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- **Debian**: Emmanuel Bastien <ebastien@users.sourceforge.net> (N)

Note

(N) - **Amadeus** employees.

3 Coding Rules

In the following sections we describe the naming conventions which are used for files, classes, structures, local variables, and global variables.

3.1 Default Naming Rules for Variables

Variables names follow Java naming conventions. Examples:

- `lNumberOfPassengers`
- `lSeatAvailability`

3.2 Default Naming Rules for Functions

Function names follow Java naming conventions. Example:

- `int myFunctionName (const int& a, int b)`

3.3 Default Naming Rules for Classes and Structures

Each new word in a class or structure name should always start with a capital letter and the words should be separated with an under-score. Abbreviations are written with capital letters. Examples:

- `MyClassName`
- `MyStructName`

3.4 Default Naming Rules for Files

Files are named after the C++ class names.

Source files are named using `.cpp` suffix, whereas header files end with `.hpp` extension. Examples:

- `FlightDate.hpp`
- `SegmentDate.cpp`

3.5 Default Functionality of Classes

All classes that are configured by input parameters should include:

- default empty constructor
- one or more additional constructor(s) that takes input parameters and initializes the class instance
- setup function, preferably named `'setup'` or `'set_parameters'`

Explicit destructor functions are not required, unless they are needed. It shall not be possible to use any of the other member functions unless the class has been properly initiated with the input parameters.

4 Copyright and License

4.1 GNU LESSER GENERAL PUBLIC LICENSE

4.1.1 Version 2.1, February 1999

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[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

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4.3.2 END OF TERMS AND CONDITIONS

4.4 How to Apply These Terms to Your New Programs

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.
```

```
You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library 'Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

Source

5 Documentation Rules

5.1 General Rules

All classes in SimFQT should be properly documented with Doxygen comments in include (.hpp) files. Source (.cpp) files should be documented according to a normal standard for well documented C++ code.

An example of how the interface of a class shall be documented in SimFQT is shown here:

```

/*!
 * \brief Brief description of MyClass here
 *
 * Detailed description of MyClass here. With example code if needed.
 */
class MyClass {
public:
    ///! Default constructor
    MyClass(void) { setup_done = false; }

    /*!
     * \brief Constructor that initializes the class with parameters
     *
     * Detailed description of the constructor here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    MyClass(TYPE1 param1, TYPE2 param2) { setup(param1, param2); }

    /*!
     * \brief Setup function for MyClass
     *
     * Detailed description of the setup function here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    void setup(TYPE1 param1, TYPE2 param2);

    /*!
     * \brief Brief description of memberFunction1
     *
     * Detailed description of memberFunction1 here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     * \param[in,out] param3 Description of \a param3 here
     * \return Description of the return value here
     */
    TYPE4 memberFunction1(TYPE1 param1, TYPE2 param2, TYPE3 &param3);

private:
    bool _setupDone;          /*!< Variable that checks if the class is properly
                               initialized with parameters */
    TYPE1 _privateVariable1; /*!< Short description of _privateVariable1 here
    TYPE2 _privateVariable2; /*!< Short description of _privateVariable2 here
};

```


5.2 File Header

All files should start with the following header, which include Doxygen's `\file`, `\brief` and `\author` tags, `$Date$` and `$Revisions$` CVS tags, and a common copyright note:

```

/*!
 * \file
 * \brief Brief description of the file here
 * \author Names of the authors who contributed to this code
 * \date Date
 *
 * Detailed description of the file here if needed.
 *
 * -----
 *
 * SimFQT - C++ Standard Airline IT Object Library
 *
 * Copyright (C) 2009-2010 (\see authors file for a list of contributors)
 *
 * \see copyright file for license information
 *
 * -----
 */

```

5.3 Grouping Various Parts

All functions must be added to a Doxygen group in order to appear in the documentation. The following code example defines the group `'my_group'`:

```

/*!
 * \defgroup my_group Brief description of the group here
 *
 * Detailed description of the group here
 */

```

The following example shows how to document the function `myFunction` and how to add it to the group `my_group`:

```

/*!
 * \brief Brief description of myFunction here
 * \ingroup my_group
 *
 * Detailed description of myFunction here
 *
 * \param[in] param1 Description of \a param1 here
 * \param[in] param2 Description of \a param2 here
 * \return Description of the return value here
 */
TYPE3 myFunction(TYPE1 param1, TYPE2 &param2);

```

6 Main features

A short list of the main features of SimFQT is given below sorted in different categories. Many more features and functions exist and for these we refer to the reference documentation.

6.1 Fare calculation

- Calculation of fare from statistics on tickets/coupons

6.2 Fare rule engine

- Fare rules: storage, engine, management

6.3 Fare retrieval

- Retrieval of fares for specific booking requests or product assesment

6.4 Other features

- CSV input file parsing
- Memory handling

7 Make a Difference

Do not ask what SimFQT can do for you. Ask what you can do for SimFQT.

You can help us to develop the SimFQT library. There are always a lot of things you can do:

- Start using SimFQT
- Tell your friends about SimFQT and help them to get started using it
- If you find a bug, report it to us. Without your help we can never hope to produce a bug free code.
- Help us to improve the documentation by providing information about documentation bugs
- Answer support requests in the SimFQT discussion forums on SourceForge. - If you know the answer to a question, help others to overcome their SimFQT problems.
- Help us to improve our algorithms. If you know of a better way (e.g., that is faster or requires less memory) to implement some of our algorithms, then let us know.

- Help to port SimFQT to new platforms. If you manage to compile SimFQT on a new platform, then tell how you did it.
- Send us your code. If you have a good SimFQT compatible code, which you can release under the LGPL, and you think it should be included in SimFQT, then send it to the community.
- Become an SimFQT developer. Send us an e-mail and tell what you can do for SimFQT.

8 Make a new release

8.1 Introduction

This document describes briefly the recommended procedure of releasing a new version of SimFQT using a Linux development machine and the SourceForge project site.

The following steps are required to make a release of the distribution package.

8.2 Initialisation

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

8.3 Release branch maintenance

Switch to the release branch, on your local clone, and merge the latest updates from the trunk. Decide about the new version to be released.

```
cd ~/dev/sim/simfqtgit
git checkout releases
git merge trunk
```

Update the version in the various build system files, replacing the old version numbers by the correct ones:

```
vi CMakeLists.txt
vi autogen.sh
vi README
```

Update the version, add some news in the NEWS file, add a change-log in the Change-Log file and in the RPM specification files:

```
vi NEWS
vi ChangeLog
vi simfqt.spec
```

8.4 Commit and publish the release branch

Commit the new release:

```
cd ~/dev/sim/simfqtgit
git add -A
git commit -m "[Release 0.5.0] Release of the 0.5.0 version of SimFQT."
git push
```

8.5 Create distribution packages

Create the distribution packages using the following command:

```
cd ~/dev/sim/simfqtgit
git checkout releases
rm -rf build && mkdir -p build
cd build
export INSTALL_BASEDIR=/home/user/dev/deliveries
export LIBSUFFIX_4_CMAKE="-DLIB_SUFFIX=64"
cmake -DCMAKE_INSTALL_PREFIX=${INSTALL_BASEDIR}/simfqt-0.5.0 \
  -DWITH_STDPAIR_PREFIX=${INSTALL_BASEDIR}/stdair-stable \
  -DWITH_AIRAC_PREFIX=${INSTALL_BASEDIR}/airac-stable \
  -DWITH_AIRAC_PREFIX=${INSTALL_BASEDIR}/airrac-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/rmol-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/airinv-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/simfqt-stable \
  -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON \
  ${LIBSUFFIX_4_CMAKE} ..
make check && make dist
make install
```

This will configure, compile and check the package. The output packages will be named, for instance, `simfqt-0.5.0.tar.gz` and `simfqt-0.5.0.tar.bz2`.

8.6 Upload the HTML documentation to SourceForge

In order to update the Web site files, either:

- **synchronise them with rsync and SSH:** Upload the just generated HTML (and PDF) documentation onto the [SourceForge Web site](#).

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
rsync -aiv ${INSTALL_BASEDIR}/simfqt-0.5.0/share/doc/simfqt-0.5.0/html/ \
  your_sf_user,simfqt@web.sourceforge.net:htdocs/
```

where `-aiv` options mean:

- `-a`: archive/mirror mode; equals `-rlptgoD` (no `-H`, `-A`, `-X`)
- `-v`: increase verbosity
- `-i`: output a change-summary for all updates

- Note the trailing slashes (/) at the end of both the source and target directories. It means that the content of the source directory (`doc/html`), rather than the directory itself, has to be copied into the content of the target directory.

- or use the [SourceForge Shell service](#).

8.7 Generate the RPM packages

Optionally, generate the RPM package (for instance, for [Fedora/RedHat](#)):

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
make dist
```

To perform this step, `rpm-build`, `rpmlint` and `rpmdevtools` have to be available on the system.

```
cp ../simfqt.spec ~/dev/packages/SPECS \
  && cp simfqt-0.5.0.tar.bz2 ~/dev/packages/SOURCES
cd ~/dev/packages/SPECS
rpmbuild -ba simfqt.spec
cd ~/dev/packages
rpmlint -i SPECS/simfqt.spec SRPMS/simfqt-0.5.0-1.fc16.src.rpm \
  RPMS/noarch/simfqt-* RPMS/i686/simfqt-*
```

8.8 Update distributed change log

Update the `NEWS` and `ChangeLog` files with appropriate information, including what has changed since the previous release. Then commit and push the changes into the [SimFQT's Git repository](#).

8.9 Create the binary package, including the documentation

Create the binary package, which includes HTML and PDF documentation, using the following command:

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
make package
```

The output binary package will be named, for instance, `simfqt-0.5.0-Linux.tar.bz2`. That package contains both the HTML and PDF documentation. The binary package contains also the executables and shared libraries, as well as C++ header files, but all of those do not interest us for now.

8.10 Upload the files to SourceForge

Upload the distribution and documentation packages to the SourceForge server. Check [SourceForge help page on uploading software](#).

8.11 Make a new post

- submit a new entry in the [SourceForge project-related news feed](#)
- make a new post on the [SourceForge hosted WordPress blog](#)
- and update, if necessary, [Trac tickets](#).

8.12 Send an email on the announcement mailing-list

Finally, you should send an announcement to simfqt-announce@lists.sourceforge.net (see <https://lists.sourceforge.net/lists/listinfo/simfqt-announce> for the archives)

9 Installation

9.1 Table of Contents

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9.2 Fedora/RedHat Linux distributions

Note that on [Fedora/RedHat](#) Linux distributions, RPM packages are available and can be installed with your usual package manager. For instance:

```
yum -y install simfqt-devel simfqt-doc
```

RPM packages can also be available on the [SourceForge download site](#).

9.3 SimFQT Requirements

SimFQT should compile without errors or warnings on most GNU/Linux systems, on UNIX systems like Solaris SunOS, and on POSIX based environments for Microsoft - Windows like Cygwin or MinGW with MSYS. It can be also built on Microsoft Windows NT/2000/XP/Vista/7 using Microsoft's Visual C++ .NET, but our support for this compiler is limited. For GNU/Linux, SunOS, Cygwin and MinGW we assume that you have at least the following GNU software installed on your computer:

- GNU Autotools:
 - `autoconf`,
 - `automake`,
 - `libtool`,
 - `make`, version 3.72.1 or later (check version with `'make --version'`)
- `GCC` - GNU C++ Compiler (g++), version 4.3.x or later (check version with `'gcc --version'`)
- `Boost` - C++ STL extensions, version 1.35 or later (check version with `'grep "define BOOST_LIB_VERSION" /usr/include/boost/version.hpp'`)
- `MySQL` - Database client libraries, version 5.0 or later (check version with `'mysql --version'`)
- `SOCI` - C++ database client library wrapper, version 3.0.0 or later (check version with `'soci-config --version'`)

Optionally, you might need a few additional programs: `Doxygen`, `LaTeX`, `Dvips` and `Ghostscript`, to generate the HTML and PDF documentation.

We strongly recommend that you use recent stable releases of the GCC, if possible. We do not actively work on supporting older versions of the GCC, and they may therefore (without prior notice) become unsupported in future releases of SimFQT.

9.4 Basic Installation

Briefly, the shell commands `./cmake .. && make install` should configure, build, and install this package. The following more-detailed instructions are generic; see the `'README'` file for instructions specific to this package. Some packages provide this `'INSTALL'` file but do not implement all of the features documented below. The lack of an optional feature in a given package is not necessarily a bug. More recommendations for GNU packages can be found in the info page corresponding to "Makefile Conventions: (standards)Makefile Conventions".

The `'cmake'` shell script attempts to guess correct values for various system-dependent variables used during compilation. It uses those values to create a `'-Makefile'` in each directory of the package. It may also create one or more `'.h'` files containing system-dependent definitions. Finally, it creates a `'CMakeCache.txt'` cache file that you can refer to in the future to recreate the current configuration, and a file `'-CMakeFiles'` containing compiler output (useful mainly for debugging `'cmake'`).

It can also use an optional file (typically called `'config.cache'` and enabled with `'--cache-file=config.cache'` or simply `'-C'`) that saves the results of its tests to speed up reconfiguring. Caching is disabled by default to prevent problems with accidental use of stale cache files.

If you need to do unusual things to compile the package, please try to figure out how `'configure'` could check whether to do them, and mail diffs or instructions to the address given in the `'README'` so they can be considered for the next release. If you are using the cache, and at some point `'config.cache'` contains results you don't want to keep, you may remove or edit it.

The file `'CMakeLists.txt'` is used to create the `'Makefile'` files.

The simplest way to compile this package is:

1. `'cd'` to the directory containing the package's source code and type `'./cmake . '` to configure the package for your system. Running `'cmake'` is generally fast. While running, it prints some messages telling which features it is checking for.
2. Type `'make'` to compile the package.
3. Optionally, type `'make check'` to run any self-tests that come with the package, generally using the just-built uninstalled binaries.
4. Type `'make install'` to install the programs and any data files and documentation. When installing into a prefix owned by root, it is recommended that the package be configured and built as a regular user, and only the `'make install'` phase executed with root privileges.
5. You can remove the program binaries and object files from the source code directory by typing `'make clean'`. To also remove the files that `'configure'` created (so you can compile the package for a different kind of computer), type `'make distclean'`. There is also a `'make maintainer-clean'` target, but that is intended mainly for the package's developers. If you use it, you may have to get all sorts of other programs in order to regenerate files that came with the distribution.
6. Often, you can also type `'make uninstall'` to remove the installed files again. In practice, not all packages have tested that uninstallation works correctly, even though it is required by the GNU Coding Standards.

9.5 Compilers and Options

Some systems require unusual options for compilation or linking that the `'cmake'` script does not know about. -

Run `./cmake --help` for details on some of the pertinent environment variables.

You can give `'cmake'` initial values for configuration parameters by setting variables in the command line or in the environment. Here is an example:

```
./cmake CC=c99 CFLAGS=-g LIBS=-lposix
```

See also

[Defining Variables](#) for more details.

9.6 Compiling For Multiple Architectures

You can compile the package for more than one kind of computer at the same time, by placing the object files for each architecture in their own directory. To do this, you can use GNU `'make'`. `'cd'` to the directory where you want the object files and executables to go and run the `'configure'` script. `'configure'` automatically checks for the source code in the directory that `'configure'` is in and in `'..'`. This is known as a "VPATH" build.

With a non-GNU `'make'`, it is safer to compile the package for one architecture at a time in the source code directory. After you have installed the package for one architecture, use `'make distclean'` before reconfiguring for another architecture.

On MacOS X 10.5 and later systems, you can create libraries and executables that work on multiple system types--known as "fat" or "universal" binaries--by specifying multiple `'-arch'` options to the compiler but only a single `'-arch'` option to the preprocessor. Like this:

```
./configure CC="gcc -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
           CXX="g++ -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
           CPP="gcc -E" CXXCPP="g++ -E"
```

This is not guaranteed to produce working output in all cases, you may have to build one architecture at a time and combine the results using the `'lipo'` tool if you have problems.

9.7 Installation Names

By default, `'make install'` installs the package's commands under `'/usr/local/bin'`, include files under `'/usr/local/include'`,

etc. You can specify an installation prefix other than `‘/usr/local’` by giving `‘configure’` the option `‘--prefix=PREFIX’`, where `PREFIX` must be an absolute file name.

You can specify separate installation prefixes for architecture-specific files and architecture-independent files. If you pass the option `‘--exec-prefix=PREFIX’` to `‘configure’`, the package uses `PREFIX` as the prefix for installing programs and libraries. Documentation and other data files still use the regular prefix.

In addition, if you use an unusual directory layout you can give options like `‘--bindir=DIR’` to specify different values for particular kinds of files. Run `‘configure --help’` for a list of the directories you can set and what kinds of files go in them. In general, the default for these options is expressed in terms of `‘${prefix}’`, so that specifying just `‘--prefix’` will affect all of the other directory specifications that were not explicitly provided.

The most portable way to affect installation locations is to pass the correct locations to `‘configure’`; however, many packages provide one or both of the following shortcuts of passing variable assignments to the `‘make install’` command line to change installation locations without having to reconfigure or recompile.

The first method involves providing an override variable for each affected directory. For example, `‘make install prefix=/alternate/directory’` will choose an alternate location for all directory configuration variables that were expressed in terms of `‘${prefix}’`. Any directories that were specified during `‘configure’`, but not in terms of `‘${prefix}’`, must each be overridden at install time for the entire installation to be relocated. The approach of makefile variable overrides for each directory variable is required by the GNU Coding Standards, and ideally causes no recompilation. However, some platforms have known limitations with the semantics of shared libraries that end up requiring recompilation when using this method, particularly noticeable in packages that use GNU Libtool.

The second method involves providing the `‘DESTDIR’` variable. For example, `‘make install DESTDIR=/alternate/directory’` will prepend `‘/alternate/directory’` before all installation names. The approach of `‘DESTDIR’` overrides is not required by the GNU Coding Standards, and does not work on platforms that have drive letters. On the other hand, it does better at avoiding recompilation issues, and works well even when some directory options were not specified in terms of `‘${prefix}’` at `‘configure’` time.

9.8 Optional Features

If the package supports it, you can cause programs to be installed with an extra prefix or suffix on their names by giving 'cmake' the option '--program-prefix=PREFIX' or '--program-suffix=SUFFIX'.

Some packages pay attention to '--enable-FEATURE' options to 'configure', where FEATURE indicates an optional part of the package. They may also pay attention to '--with--PACKAGE' options, where PACKAGE is something like 'gnu-as' or 'x' (for the X Window System). The 'README' should mention any '--enable-' and '--with-' options that the package recognizes.

For packages that use the X Window System, 'configure' can usually find the X include and library files automatically, but if it doesn't, you can use the 'configure' options '--x-includes=DIR' and '--x-libraries=DIR' to specify their locations.

Some packages offer the ability to configure how verbose the execution of 'make' will be. For these packages, running './configure --enable-silent-rules' sets the default to minimal output, which can be overridden with 'make -V=1'; while running './configure --disable-silent-rules' sets the default to verbose, which can be overridden with 'make V=0'.

9.9 Particular systems

On HP-UX, the default C compiler is not ANSI C compatible. If GNU CC is not installed, it is recommended to use the following options in order to use an ANSI C compiler:

```
./configure CC="cc -Ae -D_XOPEN_SOURCE=500"
```

and if that doesn't work, install pre-built binaries of - GCC for HP-UX.

On OSF/1 a.k.a. Tru64, some versions of the default - C compiler cannot parse its '<wchar.h>' header file. - The option '-nodtk' can be used as a workaround. If GNU CC is not installed, it is therefore recommended to try

```
./configure CC="cc"
```

and if that doesn't work, try

```
./configure CC="cc -nodtk"
```

On Solaris, don't put `/usr/ucb` early in your `PATH`. - This directory contains several dysfunctional programs; working variants of these programs are available in `/usr/bin`. So, if you need `/usr/ucb` in your `PATH`, put it *after* `/usr/bin`.

On Haiku, software installed for all users goes in `/boot/common`, not `/usr/local`. It is recommended to use the following options:

```
./cmake -DCMAKE_INSTALL_PREFIX=/boot/common
```

9.10 Specifying the System Type

There may be some features `configure` cannot figure out automatically, but needs to determine by the type of machine the package will run on. Usually, assuming the package is built to be run on the *same* architectures, `configure` can figure that out, but if it prints a message saying it cannot guess the machine type, give it the `--build=TYPE` option. TYPE can either be a short name for the system type, such as `sun4`, or a canonical name which has the form CPU-COMPANY-SYSTEM

where SYSTEM can have one of these forms:

- OS
- KERNEL-OS

See the file `config.sub` for the possible values of each field. If `config.sub` isn't included in this package, then this package doesn't need to know the machine type.

If you are *building* compiler tools for cross-compiling, you should use the option `--target=TYPE` to select the type of system they will produce code for.

If you want to *use* a cross compiler, that generates code for a platform different from the build platform, you should specify the "host" platform (i.e., that on which the generated programs will eventually be run) with `--host=TYPE`.

9.11 Sharing Defaults

If you want to set default values for `configure` scripts to share, you can create a site shell script called `config.site` that gives default values for variables like `CC`, `cache-file`, and `prefix`. `configure` looks for `PREFIX/share/config.site`

if it exists, then 'PREFIX/etc/config.site' if it exists. Or, you can set the 'CONFIG_SITE' environment variable to the location of the site script. A warning: not all 'configure' scripts look for a site script.

9.12 Defining Variables

Variables not defined in a site shell script can be set in the environment passed to 'configure'. However, some packages may run configure again during the build, and the customized values of these variables may be lost. - In order to avoid this problem, you should set them in the 'configure' command line, using 'VAR=value'. For example:

```
./configure CC=/usr/local2/bin/gcc
```

causes the specified 'gcc' to be used as the C compiler (unless it is overridden in the site shell script).

Unfortunately, this technique does not work for 'CONFIG_SHELL' due to an Autoconf bug. Until the bug is fixed you can use this workaround:

```
CONFIG_SHELL=/bin/bash /bin/bash ./configure CONFIG_SHELL=/bin/bash
```

9.13 'cmake' Invocation

'cmake' recognizes the following options to control how it operates.

- '--help', '-h' print a summary of all of the options to 'cmake', and exit.
- '--help=short', '--help=recursive' print a summary of the options unique to this package's 'configure', and exit. The 'short' variant lists options used only in the top level, while the 'recursive' variant lists options also present in any nested packages.
- '--version', '-V' print the version of Autoconf used to generate the 'configure' script, and exit.
- '--cache-file=FILE' enable the cache: use and save the results of the tests in FILE, traditionally 'config.cache'. FILE defaults to '/dev/null' to disable caching.
- '--config-cache', '-C' alias for '--cache-file=config.cache'.
- '--quiet', '--silent', '-q' do not print messages saying which checks are being made. To suppress all normal output, redirect it to '/dev/null' (any error messages will still be shown).

- '--srcdir=DIR' look for the package's source code in directory DIR. Usually 'configure' can determine that directory automatically.
- '--prefix=DIR' use DIR as the installation prefix.

See also

[Installation Names](#) for more details, including other options available for fine-tuning the installation locations.

- '--no-create', '-n' run the configure checks, but stop before creating any output files.

'cmake' also accepts some other, not widely useful, options. Run 'cmake' --help' for more details.

The 'cmake' script produces an output like this:

```
-- Requires Git without specifying any version
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/simfqt-0.5.0 \
-DWITH_STDPAIR_PREFIX=/home/user/dev/deliveries/stdair-stable \
-DLIB_SUFFIX=64 -DCMAKE_BUILD_TYPE:String=Debug -DINSTALL_DOC:BOOL=ON ..
-- Current Git revision name: 0e31d63879056d26f01eb09757d232d247c42164 trunk
-- Requires Boost-1.41
-- Found Boost version: 1.44.0
-- Requires Readline without specifying any version
-- Found Readline version: 6.1
-- Requires MySQL without specifying any version
-- Using mysql-config: /usr/bin/mysql_config
-- Found MySQL version: 5.1.56
-- Requires SOCI-3.0
-- Using soci-config: /usr/bin/soci-config
-- SOCI headers are buried
-- Found SOCI with MySQL back-end support version: 3.0.0
-- Requires StdAir-0.35
-- Found StdAir version: 99.99.99
-- Requires Doxygen without specifying any version
-- Found Doxygen version: 1.7.4
-- Had to set the linker language for 'simfqtlib' to CXX
-- Test 'FQTTestSuite' to be built with 'FQTTestSuite.cpp'
--
-- =====
-- ---      Project Information      ---
-- -----
-- PROJECT_NAME ..... : simfqt
-- PACKAGE_PRETTY_NAME ..... : SimFQT
-- PACKAGE ..... : simfqt
-- PACKAGE_NAME ..... : SIMFQT
-- PACKAGE_BRIEF ..... : C++ Simulated Fare Quote System Library
-- PACKAGE_VERSION ..... : 99.99.99
-- GENERIC_LIB_VERSION ..... : 99.99.99
-- GENERIC_LIB_SOVERSION ..... : 99.99
--
-- -----
-- ---      Build Configuration      ---
-- -----
-- Modules to build ..... : simfqt
```

```

-- Libraries to build/install ..... : simfqtlib
-- Binaries to build/install ..... : simfqt;fareQuote
-- Modules to test ..... : simfqt
-- Binaries to test ..... : FQTestSuitetst
--
-- * Module ..... : simfqt
--   + Layers to build ..... : .;basic;bom;factory;command;service
--   + Dependencies on other layers :
--   + Libraries to build/install . : simfqtlib
--   + Executables to build/install : simfqt;fareQuote
--   + Tests to perform ..... : FQTestSuitetst
--
-- BUILD_SHARED_LIBS ..... : ON
-- CMAKE_BUILD_TYPE ..... : Debug
-- * CMAKE_C_FLAGS ..... :
-- * CMAKE_CXX_FLAGS ..... : -Wall -Werror
-- * BUILD_FLAGS ..... :
-- * COMPILE_FLAGS ..... :
-- CMAKE_MODULE_PATH ..... : /home/localoriuser/dev/sim/simfqt/simfqtgit/config/
-- CMAKE_INSTALL_PREFIX ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99
--
-- * Doxygen:
--   - DOXYGEN_VERSION ..... : 1.7.4
--   - DOXYGEN_EXECUTABLE ..... : /usr/bin/doxygen
--   - DOXYGEN_DOT_EXECUTABLE ..... : DOXYGEN_DOT_EXECUTABLE-NOTFOUND
--   - DOXYGEN_DOT_PATH ..... :
--
-- -----
-- --- Installation Configuration ---
-- -----
-- INSTALL_LIB_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/lib
-- INSTALL_BIN_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/bin
-- INSTALL_INCLUDE_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/include
-- INSTALL_DATA_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share
-- INSTALL_SAMPLE_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share/simfqt
-- INSTALL_DOC ..... : ON
--
-- -----
-- --- Packaging Configuration ---
-- -----
-- CPACK_PACKAGE_CONTACT ..... : Denis Arnaud <denis_arnaud - at - users dot sourceforge dot net>
-- CPACK_PACKAGE_VENDOR ..... : Denis Arnaud
-- CPACK_PACKAGE_VERSION ..... : 99.99.99
-- CPACK_PACKAGE_DESCRIPTION_FILE . : /home/localoriuser/dev/sim/simfqt/simfqtgit/README
-- CPACK_RESOURCE_FILE_LICENSE .... : /home/localoriuser/dev/sim/simfqt/simfqtgit/COPYING
-- CPACK_GENERATOR ..... : TBZ2
-- CPACK_DEBIAN_PACKAGE_DEPENDS ... :
-- CPACK_SOURCE_GENERATOR ..... : TBZ2;TGZ
-- CPACK_SOURCE_PACKAGE_FILE_NAME . : simfqt-99.99.99
--
-- -----
-- --- External libraries ---
-- -----
--
-- * Boost:
--   - Boost_VERSION ..... : 104400
--   - Boost_LIB_VERSION ..... : 1_44
--   - Boost_HUMAN_VERSION ..... : 1.44.0
--   - Boost_INCLUDE_DIRS ..... : /usr/include
--   - Boost required components .. : program_options;date_time;iostreams;serialization;filesystem;atomic
--   - Boost required libraries ... : optimized;/usr/lib/libboost_iostreams-mt.so;debug;/usr/lib/libboost_iostreams-mt.so
--

```

```
-- * Readline:
--   - READLINE_VERSION ..... : 6.1
--   - READLINE_INCLUDE_DIR ..... : /usr/include
--   - READLINE_LIBRARY ..... : /usr/lib/libreadline.so
--
-- * MySQL:
--   - MYSQL_VERSION ..... : 5.1.56
--   - MYSQL_INCLUDE_DIR ..... : /usr/include/mysql
--   - MYSQL_LIBRARIES ..... : /usr/lib/mysql/libmysqlclient_r.so
--
-- * SOCI:
--   - SOCI_VERSION ..... : 3.0.0
--   - SOCI_INCLUDE_DIR ..... : /usr/include/soci
--   - SOCI_MYSQL_INCLUDE_DIR ..... : /usr/include/soci
--   - SOCI_LIBRARIES ..... : /usr/lib/libsoci_core.so
--   - SOCI_MYSQL_LIBRARIES ..... : /usr/lib/libsoci_mysql.so
--
-- * StdAir:
--   - STDAIR_VERSION ..... : 99.99.99
--   - STDAIR_BINARY_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/bin
--   - STDAIR_EXECUTABLES ..... : stdair
--   - STDAIR_LIBRARY_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/lib
--   - STDAIR_LIBRARIES ..... : stdairlib;stdairuiclib
--   - STDAIR_INCLUDE_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/include
--   - STDAIR_SAMPLE_DIR ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/share/stdair/
--
-- Change a value with: cmake -D<Variable>=<Value>
-- =====
--
-- Configuring done
-- Generating done
-- Build files have been written to: /home/localoriuser/dev/sim/simfqt/simfqtgit/build
```

It is recommended that you check if your library has been compiled and linked properly and works as expected. - To do so, you should execute the testing process 'make check'. As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
  Start 1: FQTestSuitetst
1/1 Test #1: FQTestSuitetst ..... Passed    0.43 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.47 sec
[100%] Built target check_simfqtst
[100%] Built target check
```

Check if all the executed tests PASSED. If not, please contact us by filling a [bug-report](#).

Finally, you should install the compiled and linked library, include files and (optionally) HTML and PDF documentation by typing:

```
make install
```


Depending on the PREFIX settings during configuration, you might need the root (administrator) access to perform this step.

Eventually, you might invoke the following command

```
make clean
```

to remove all files created during compilation process, or even

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir build
cd build
```

to remove everything.

10 Linking with SimFQT

10.1 Table of Contents

- [Introduction](#)
- [Dependencies](#)
- [Using the pkg-config command](#)
- [Using the simfqt-config script](#)
- [M4 macro for the GNU Autotools](#)
- [Using SimFQT with dynamic linking](#)

10.2 Introduction

There are two convenient methods of linking your programs with the SimFQT library. The first one employs the 'pkg-config' command (see <http://pkgconfig.freedesktop.org/>), whereas the second one uses 'simfqt-config' script. These methods are shortly described below.

10.3 Dependencies

The SimFQT library depends on several other C++ components.

10.3.1 StdAir

Among them, as for now, only StdAir has been packaged. The support for StdAir is taken in charge by a dedicated M4 macro file (namely, 'stdair.m4'), from the configuration script (generated thanks to 'configure.ac').

10.4 Using the pkg-config command

'pkg-config' is a helper tool used when compiling applications and libraries. It helps you insert the correct compiler and linker options. The syntax of the 'pkg-config' is as follows:

```
pkg-config <options> <library_name>
```

For instance, assuming that you need to compile an SimFQT based program 'my_prog.cpp', you should use the following command:

```
g++ `pkg-config --cflags simfqt` -o my_prog my_prog.cpp \
    `pkg-config --libs simfqt`
```

For more information see the 'pkg-config' man pages.

10.5 Using the simfqt-config script

SimFQT provides a shell script called 'simfqt-config', which is installed by default in '\$prefix/bin' ('/usr/local/bin') directory. It can be used to simplify compilation and linking of SimFQT based programs. The usage of this script is quite similar to the usage of the 'pkg-config' command.

Assuming that you need to compile the program 'my_prog.cpp' you can now do that with the following command:

```
g++ `simfqt-config --cflags` -o my_prog my_prog.cpp `simfqt-config --libs`
```

A list of 'simfqt-config' options can be obtained by typing:

```
simfqt-config --help
```

If the 'simfqt-config' command is not found by your shell, you should add its location '\$prefix/bin' to the PATH environment variable, e.g.:

```
export PATH=/usr/local/bin:$PATH
```

10.6 M4 macro for the GNU Autotools

A M4 macro file is delivered with SimFQT, namely 'simfqt.m4', which can be found in, e.g., '/usr/share/aclocal'. When used by a 'configure' script, thanks to the 'AM_PATH_SIMFQT' macro (specified in the M4 macro file), the following Makefile variables are then defined:

- 'SIMFQT_VERSION' (e.g., defined to 0.2.0)
- 'SIMFQT_CFLAGS' (e.g., defined to '-I\${prefix}/include')
- 'SIMFQT_LIBS' (e.g., defined to '-L\${prefix}/lib -lsimfqt')

10.7 Using SimFQT with dynamic linking

When using static linking some of the library routines in SimFQT are copied into your executable program. This can lead to unnecessary large executables. To avoid having too large executable files you may use dynamic linking instead. Dynamic linking means that the actual linking is performed when the program is executed. This requires that the system is able to locate the shared SimFQT library file during your program execution. If you install the SimFQT library using a non-standard prefix, the `'LD_LIBRARY_PATH'` environment variable might be used to inform the linker of the dynamic library location, e.g.:

```
export LD_LIBRARY_PATH=<SimFQT installation prefix>/lib:$LD_LIBRARY_PATH
```

11 Test Rules

This section describes rules how the functionality of the SimFQT library should be verified. In the `'tests'` subdirectory test files are provided. All functionality should be tested using these test files.

11.1 The Test File

Each new SimFQT module/class should be accompanied with a test file. The test file is an implementation in C++ that tests the functionality of a function/class or a group of functions/classes called modules. The test file should test relevant parameter settings and input/output relations to guarantee correct functionality of the corresponding classes/functions. The test files should be maintained using version control and updated whenever new functionality is added to the SimFQT library.

The test file should print relevant data to a standard output that can be used to verify the functionality. All relevant parameter settings should be tested.

The test file should be placed in the `'tests'` subdirectory and should have a name ending with `'_test.cpp'`.

11.2 The Reference File

Consider a test file named `'module_test.cpp'`. A reference file named `'module_test.ref'` should accompany the test file. The reference file contains a reference printout of the standard output generated when running the test program. The reference file should be maintained using version control and updated according to the test file.

11.3 Testing SimFQT Library

One can compile and execute all test programs from `'tests'` subdirectory by typing

```
% make check
```

after successful compilation of the SimFQT library.

12 Users Guide

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 - [Get the SimFQT library](#)
 - [Build the SimFQT project](#)
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- [Input file of SimFQT Project](#)
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- [Error Messages](#)
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 - [Error Messages for missing fare rules](#)

12.2 Introduction

The `SimFQT` library contains classes for fare rule management. This document does not cover all the aspects of the `SimFQT` library. It does however explain the most important things you need to know in order to start using `SimFQT`.

12.3 Get Started

12.3.1 Get the SimFQT library

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

12.3.2 Build the SimFQT project

Link with StdAir, create the distribution package (say, 0.5.0) and compile using the following commands:

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=~/dev/deliveries/simfqt-0.5.0 \
      -DWITH_STDAIR_PREFIX=~/dev/deliveries/stdair-stable \
      -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
make
```

12.3.3 Run the Tests

After building the SimFQT project, the following commands run the tests:

```
cd ~/dev/sim/simfqtgit
cd build
make check
```

As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
Start 1: FQTTestSuitetst
1/1 Test #1: FQTTestSuitetst ..... Passed    0.15 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.16 sec
[100%] Built target check_simfqtst
[100%] Built target check
```

12.3.4 Install the SimFQT Project (Binaries, Documentation)

After the step [Build the SimFQT project](#), to install the library and its header files, type:

```
cd ~/dev/sim/simfqtgit
cd build
make install
```

You can check that the executables and other required files have been copied into the given final directory:

```
cd ~/dev/deliveries/simfqt-0.5.0
```

To generate the SimFQT project documentation, the commands are:

```
cd ~/dev/sim/simfqtgit
cd build
make doc
```

The SimFQT project documentation is available in the following formats: HTML, LaTeX. Those documents are available in a subdirectory:

```
cd ~/dev/sim/simfqtgit
cd build
cd doc
```

12.4 Input file of SimFQT Project

The fare input file structure should look like the following sample:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
      DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
      Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
      nb Segments
// Segment: AirlineCode; Class;
1; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T;
  3; 150.0; SQ; Y;
2; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IN; 7; T; T; T;
  3; 150.0; SQ; Y;
3; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T;
  3; 150.0; SQ; Y;
4; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IN; 7; T; T; T;
  3; 150.0; SQ; Y;
5; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IN; 7; T; T; T;
  3; 150.0; SQ; Y;
6; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T;
  3; 150.0; SQ; Y;
7; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IF; 7; T; T; T;
  3; 150.0; SQ; Y;
8; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T;
  3; 150.0; SQ; Y;
9; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IF; 7; T; T; T;
  3; 150.0; SQ; Y;
10; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IF; 7; T; T; T;
  3; 150.0; SQ; Y;
```

Each line represents a fare rule (see [SIMFQT::FareRuleStruct](#)), i.e., each line tells us the price a customer will be asked according to a lot of criteria such as:

- the origin and destination of his travel (for instance from Singapour to Bangkok in the first fare rule).

- the type of his travel, i.e. one-way "OW" or round trip "RT".
- the date and time he is willing to travel (each fare rule has a date range and a time range of validity).
- the place where he is buying the ticket, i.e. the point of sale.
- his preferred cabin.
- the channel of the booking described by a two letters code: direct(D)/indirect(I) and online(N)/offline(F).
- the date when he wants to buy the ticket, i.e. the advanced purchase required in number of days.
- the saturday night stay option, i.e. is he staying a saturday night between his inbound trip and his outbound one? "T" stands for true and "F" stands for false.
- the change fees option, i.e. are there fees to change his ticket? "T" stands for true and "F" stands for false.
- the refundable criterion, i.e. is the ticket refundable? "T" stands for true and "F" stands for false.
- the number of days he is willing to stay at the destination location (each fare rule has a minimum stay requirement in number of days).

Some fare input examples (including the example above named fare01.csv) are given in the `stdair::samples` directory.

12.5 The fare quoting BOM Tree

The Fare Quoting Business Object Model (BOM) tree is a structure permitting to store all the `SIMFQT::FareRuleStruct` objects of the simulation. That is why, the BOM tree is built parsing the fare file containing all the fare rules (as described in the previous section [Input file of SimFQT Project](#)). For convenience and first use of SimFQT (the input fare file building can be long and heavy), SimFQT API enables to build a small default BOM tree.

12.5.1 Build of the fare quoting BOM tree

First, a BOM root object (i.e., a root for all the classes in the project) is instantiated by the `stdair::STDAIR_ServiceContext` context object, when the `stdair::STDAIR_Service` is itself instantiated, that is to say during the instantiation of the `simfqt::SIMFQT_Service` object. The corresponding type (class) `stdair::BomRoot` is defined in the `StdAir` library.

Then, the BOM root can be either constructed thanks to the `simfqt::SIMFQT_Service::buildSampleBom()` method:

```
void buildSampleBom();
```

or can be constructed using the fare dump file described above thanks to the `simfqt-
::SIMFQT_Service::parseAndLoad (const stdair::Filename_
T&) method:`

```
void parseAndLoad (const FareFilePath& iFareFilename);
```

12.5.2 Display of the fare quoting BOM tree

The fare quoting BOM tree can be displayed as done in the `batches::simfqt.cpp` program:

When the default bom tree is used (`-b` option of the main program `simfqt.cpp`), the fare quoting BOM tree display should look like:

```
=====
BomRoot:  --  ROOT  --
=====
+++++
AirportPair: LHR, SYD
+++++
-----
DatePeriod: [2011-Jan-15/2011-Dec-30]
-----
*****
PosChannel: LHR,DN
*****
-----
TimePeriod: 00:00:00-23:00:00
-----
-----
Fare-Features: RT -- 0-1-1-1-0
-----
-----
AirlineClassList: BA Y
-----
```

Here the fare quoting BOM tree is just composed of one fare rule.

12.5.3 Structure of the fare quoting BOM tree

As one can guess looking at the BOM tree display above, the tree is constructed as follow:

- At the top of the tree, we find a `stdair::BomRoot` object (i.e., a root for all the classes in the project).
- Just under the root, at the first level, we find `stdair::AirportPair` objects (i.e., all the possible combinations of origin-destination). In the instance above, the only combination possible is from London to Sydney.
- At the next level, under a particular `stdair::AirportPair`, we find all the date periods of the fare rules applicable for this origin-destination.

- Then, under a particular `stdair::DatePeriod`, we find all the possible combinations of point-of-sale and channel applicable.
- Under a particular `stdair::PosChannel` object, we have the corresponding `stdair::TimePeriod` objects.
- At the next-to-last level, we have `stdair::FareFeatures` objects, that is to say the trip type, the advanced purchase and stay duration required, ...
- Finally we find the code of the airline publishing the current fare rule and the applicable class code.

12.6 The fare quoting procedure

The project SimFQT aims at fare quoting a list of `travel solutions` corresponding to a `booking request`. The fare quoter looks for all the fare rules matching a travel solution: when a fare rule matches, it creates a `fare option` object and adds this object to the current travel solution.

A few steps:

- [Instantiate the default booking request](#)
- [Instantiate the default travel solution list](#)
- [Fare Quoting a list of travel solution](#)

12.6.1 Instantiate the default booking request

A default booking request can be built using the `simfqt::SIMFQT_Service::buildBookingRequest` method:

```
stdair::BookingRequestStruct buildBookingRequest(const bool isForCRS =
false);
```

12.6.2 Instantiate the default travel solution list

In the following sample, a list of travel solutions is given as input/output parameter of the `simfqt::SIMFQT_Service::buildSampleTravelSolutions` method:

```
void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
```

12.6.3 Fare Quoting a list of travel solution

Once a booking request, its corresponding list of travel solutions and the fare Quote BOM tree are constructed, the main fonction of the module can be called:

```
void quotePrices (const stdair::BookingRequestStruct&,
                 stdair::TravelSolutionList_T&);
```

For each travel solution of the list, the applicable fare rules are picked from the BOM tree (information such as the trip type or the booking request date are only contained into the booking request, that is why we need this object too).

Each chosen fare rule enables to create a fare option structure which is finally stored into the travel solution.

12.7 Error Messages

This section lists the fatal errors you may encounter when using SimFQT:

- [Fare input file not found](#)
- [Fare input file can not be parsed](#)
- [Error Messages for missing fare rules](#)

12.7.1 Fare input file not found

In this case, the output error message will be similar to:

```
terminate called after throwing an instance of 'SIMFQT::FareInputFileNotFoundException'
  what():  The fare input file '~/<YourFileName>.csv' does not exist or can not be read
Aborted
```

You can check:

- the given path to your input file is correct.
- the specified file name <YourFileName> is correct.
- the file permission settings: is the file "readable"?

12.7.2 Fare input file can not be parsed

This error message means that your input file has been opened but has not been fully read.

```
terminate called after throwing an instance of 'SIMFQT::FareFileParsingFailedException'
  what():  Parsing of fare input file: ~/<YourFileName>.csv failed
Aborted
```

Your input file structure is somehow incorrect. See the tutorial section [How to build a fare input file?](#).

If you obtain one of the error messages below and you are currently using your own input file, that means it has been fully read. However, at least one fare rule is missing to complete the fare quote.

- You need to be sure that all your travel solutions have at least one corresponding origin-destination fare rule. It seems you should add one origin-destination (i.e., xxx, xxx) fare rule into your input file.

- You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination and valid date range. It seems you should add/change a fare rule with the Origin-Destination pair: xxx, xxx: its date range must include the flight date xxxx-xxx-xx.

- You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale and same channel. It seems you should add/change a fare rule to have the same combination as given in the output error message: "the point of sale xxx, the channel xx, the flight date x, xxxx-xxx-xx and the Origin-Destination pair: xxx, xxx".

- You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel and valid time range. Add/change a fare rule if necessary.

- If your error message is about a missing fare rule for some features, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FeaturesNotFoundException'
  what(): No available fare rule corresponding to a trip type xx, to a stay duration of x, t
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel, valid time range and valid features. The features are:

- the trip type. Maybe you need both "OW" (One-Way) and "RT" (Round-trip) fare rules?
 - the minimum stay duration. You can try "0" for this parameter to include all the possible stay durations.
 - the advance purchase. You can try "0" for this parameter to include all the booking requests up to departure date.
- If your error message is about a missing fare rule for an airline, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirlineNotFoundException'
  what(): No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (par
Aborted
```

At least one of your fare rules is correct except that the fare into question must be defined by the airline operating (see the first two letters of the parsed key in the error message to know which airline is operating).

13 Supported Systems

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13.2 Introduction

This page is intended to provide a list of SimFQT supported systems, i.e. the systems on which configuration, installation and testing process of the SimFQT library has been successful. Results are grouped based on minor release number. Therefore, only the latest tests for bug-fix releases are included. Besides, the information on this page is divided into sections dependent on the operating system.

Where necessary, some extra information is given for each tested configuration, e.g. external libraries installed, configuration commands used, etc.

If you manage to compile, install and test the SimFQT library on a system not mentioned below, please let us know, so we could update this database.

13.3 SimFQT 3.10.x

13.3.1 Linux Systems

13.3.1.1 Fedora Core 4 with ATLAS

- **Platform:** Intel Pentium 4
- **Operating System:** Fedora Core 4 (x86)
- **Compiler:** g++ (GCC) 4.0.2 20051125
- **SimFQT release:** 3.10.0
- **External Libraries:** From FC4 distribution:
 - `fftw3.i386-3.0.1-3`
 - `fftw3-devel.i386-3.0.1-3`
 - `atlas-sse2.i386-3.6.0-8.fc4`
 - `atlas-sse2-devel.i386-3.6.0-8.fc4`
 - `blas.i386-3.0-35.fc4`

```
- lapack.i386-3.0-35.fc4
```

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% CXXFLAGS="-O3 -pipe -march=pentium4" ./configure
```

- **Date:** March 7, 2006
- **Tester:** Tony Ottosson

13.3.1.2 Gentoo Linux with ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler(s):** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:

```
- sci-libs/acml-3.0.0
```

- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ACML  
% eselect lapack set ACML
```

SimFQT configured with:

```
% export CPPFLAGS="-I/usr/include/acml"  
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.3 Gentoo Linux with ATLAS

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:

```
- sci-libs/fftw-3.1
```

```
- sci-libs/blas-atlas-3.6.0-r1
- sci-libs/lapack-atlas-3.6.0
```

- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ATLAS
% eselect lapack set ATLAS
```

SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.4 Gentoo Linux with MKL

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: `/opt/intel/mkl/8.0.1`
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured using the following commands:

```
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/32"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date:** February 28, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.5 Gentoo Linux with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:

```
- sci-libs/fftw-3.1
- sci-libs/blas-reference-19940131-r2
- sci-libs/cblas-reference-20030223
- sci-libs/lapack-reference-3.0-r2
```

- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% blas-config reference
% lapack-config reference
```

SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.6 Red Hat Enterprise Linux with SimFQT External

- **Platform:** Intel Pentium 4
- **Operating System:** Red Hat Enterprise Linux AS release 4 (Nahant Update 2)
- **Compiler:** g++ (GCC) 3.4.4 20050721 (Red Hat 3.4.4-2)
- **SimFQT release:** 3.10.0
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package
- **Tests Status:** All tests PASSED
- **Date:** March 7, 2006
- **Tester:** Erik G. Larsson

13.3.1.7 SUSE Linux 10.0 with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **SimFQT release:** 3.10.0
- **External Libraries:** BLAS, LAPACK and FFTW libraries installed from Open-Suse 10.0 RPM repository:

```
- blas-3.0-926
```


- lapack-3.0-926
- fftw3-3.0.1-114
- fftw3-threads-3.0.1-114
- fftw3-devel-3.0.1-114

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"  
% ./configure --with-lapack="/usr/lib64/liblapack.so.3"
```

- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.8 SUSE Linux 10.0 with MKL

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **SimFQT release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: /opt/intel/mkl/8.0.1
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"  
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/em64t"  
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"  
% ./configure
```

- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2 Windows Systems

13.3.2.1 Microsoft Windows XP with Cygwin

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:

- fftw-3.0.1-2
- fftw-dev-3.0.1-1
- lapack-3.0-4

- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% ./configure
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.2 Microsoft Windows XP with Cygwin and ATLAS

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:

- fftw-3.0.1-2
- fftw-dev-3.0.1-1

ATLAS BLAS and LAPACK libraries from SimFQT External 2.1.1 package configured using:

```
% ./configure --enable-atlas --disable-fftw
```

- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"  
% ./configure
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.3 Microsoft Windows XP with Cygwin and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.-exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```
- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.4 Microsoft Windows XP with MinGW, MSYS and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.-exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```
- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.5 Microsoft Windows XP with MinGW, MSYS and SimFQT External

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release:** 3.10.5
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.2.0 package
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-Wall -O3 -march=athlon-tbird -pipe"
% ./configure --disable-html-doc
```

- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.6 Microsoft Windows XP with MS Visual C++ and Intel MKL

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2
- **Compiler(s):** Microsoft Visual C++ 2005 .NET
- **SimFQT release:** 3.10.5
- **External Libraries:** Intel Math Kernel Library (MKL) 8.1 installed manually in the following directory: "C:\Program Files\Intel\MKL\8.1"
- **Tests Status:** Not fully tested. Some SimFQT based programs compiled and run with success.
- **Comments:** Only static library can be built. SimFQT built by opening the "win32\simfqt.vcproj" project file in MSVC++ and executing "Build -> Build Solution" command from menu.
- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.3 Unix Systems

13.3.3.1 SunOS 5.9 with SimFQT External

- **Platform:** SUNW, Sun-Blade-100 (SPARC)
- **Operating System:** SunOS 5.9 Generic_112233-10
- **Compiler(s):** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.2
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package. The following configuration command has been used:

```
% export CFLAGS="-mcpu=ultrasparc -O2 -pipe -funroll-all-loops"  
% ./configure
```

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"  
% export CPPFLAGS="-I/usr/local/include"  
% export CXXFLAGS="-mcpu=ultrasparc -O2 -pipe"  
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

14 SimFQT Supported Systems (Previous Releases)

14.1 SimFQT 3.9.1

14.2 SimFQT 3.9.0

14.3 SimFQT 3.8.1

15 Tutorials

15.1 Table of Contents

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- [Building the BOM tree with an input file](#)
- [Result of the Batch Program](#)

15.2 Preparing the SimFQT Project for Development

The source code for these examples can be found in the `batches` and `test/simfqt` directories. They are compiled along with the rest of the SimFQT project. See the [Users Guide](#) for more details on how to build the SimFQT project.

15.3 Your first fareQuote

15.3.1 Summary of the different steps

All the steps below can be found in the same order in the batch `simfqt.cpp` program.

First, we instantiate the `simfqtService` object:

```
std::ofstream logOutputFile;  
const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);  
SIMFQT::SIMFQT_Service simfqtService (lLogParams);
```

Then, we construct a default sample list of travel solutions and a default booking request (as mentioned in [Instantiate the default booking request](#) and [Instantiate the default travel solution list](#) parts):

```
stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,  
return ioBookingRequestStruct;
```

For basic use, the default BOM tree can be built using:

```
simfqtService.buildSampleBom();
```

The main step is the fare quoting (see [The fare quoting procedure](#)):

```
simfqtService.quotePrices (lInteractiveBookingRequest,
```

15.3.2 Result of the Batch Program

When the `simfqt.cpp` program is run (with the `-b` option), the log output file should look like:

```
[D]../../../../simfqt/batches/simfqt.cpp:186: Welcome to Simfqt  
[D]../../../../simfqt/batches/simfqt.cpp:212: Travel solutions:  
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---  
[D]../../../../simfqt/command/FareQuoter.cpp:519: Segment path: BA; 9, 2011-06-10;
```

```

LHR, SYD; 21:45. A corresponding fare option for the 'BA Y' class is: Class
path: Y; 450 EUR; conditions: 1 1 1
[D]../../../../simfqt/service/SIMFQT_Service.cpp:352: Fare Quote retrieving: 0.001
403 - SIMFQT_ServiceContext -- Owns StdAir service: 1
[D]../../../../simfqt/batches/simfqt.cpp:214: BOM tree:
=====
BomRoot: -- ROOT --
=====
+++++
AirportPair: LHR, SYD
+++++
-----
DatePeriod: [2011-Jan-15/2011-Dec-30]
-----
*****
PosChannel: LHR, DN
*****
-----
TimePeriod: 00:00:00-23:00:00
-----
-----
Fare-Features: RT -- 0-1-1-1-0
-----
-----
AirlineClassList: BA Y
-----

[D]../../../../simfqt/batches/simfqt.cpp:219: Travel solutions:
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---

```

What is interesting is to compare the travel solution list (here reduced to a single travel solution) displayed before:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
```

and after the fare quoting:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---
```

Between the two groups of dashes, we can see that a fare option structure has been added by the fare quoter: the price is 450 EUR for the Y class, the ticket is refundable but there are exchange fees and the customer must stay over on Saturday night.

Let's return to our default BOM tree display: the only fare rule stored was a match for the travel solution into consideration (same origin airport, same destination airport, flight date included in the fare rule date range, same airline "BA", ...).

By looking at the fare rule trip type "RT", we can guess we face a round trip fare: that means the price given in the default bom tree construction in `stdair::CmdBomManager.hpp` has been divided by 2 because we are considering either an inbound trip or an outbound one.

15.4 Fare quoting with an input file

15.4.1 How to build a fare input file?

The objective here is to build a fare input file to fare quote the default travel solution list built using:

```
stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
```

This travel solution list, reduced to a singleton, can be displayed as done before:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
```

We deduce:

- we need a fare rule whose origin-destination couple is "LHR, SYD".
- the date range must include the date "2011-06-10".
- the time range must include the time "21:45".
- the airline operating is "BA", so it must be the airline pricing.

We can deduce a part of our fare rule file :

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
      DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
      Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
      nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ???; ?; ??; ?; ?; ?; ?;
  ?; ???; BA; ?;
```

We have no information about stay duration and advance purchase (such information are contained into the booking request): so let us put "0" to embrace all the requests possible.

No information for the point-of-sale and the channel too: let us consider all the channels ("IN", "DN", "IF" and "DF") and all the points of sale (the origin "LHR", the destination "SYD" and the rest-of-the-world "ROW") existing. To access this information, we could look into the default booking request.

The input file is now:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
      DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
      Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
      nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IN; 0; ?; ?; ?;
  0; ???; BA; ?;
2; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IF; 0; ?; ?; ?;
  0; ???; BA; ?;
3; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DN; 0; ?; ?; ?;
  0; ???; BA; ?;
4; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DF; 0; ?; ?; ?;
  0; ???; BA; ?;
5; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IN; 0; ?; ?; ?;
  0; ???; BA; ?;
6; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IF; 0; ?; ?; ?;
  0; ???; BA; ?;
7; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DN; 0; ?; ?; ?;
  0; ???; BA; ?;
8; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DF; 0; ?; ?; ?;
  0; ???; BA; ?;
9; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IN; 0; ?; ?; ?;
```



```

0; ????; BA; ?;
10; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IF; 0; ?; ?; ?;
0; ????; BA; ?;
11; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DN; 0; ?; ?; ?;
0; ????; BA; ?;
12; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DF; 0; ?; ?; ?;
0; ????; BA; ?;

```

Let us say we have just the Economy cabin "Y" and British Airways prices ticket for class "Y".

No information about the trip type, so we duplicate all the fare rules for both type: one-way "OW" and round-trip "RT" (to access this information, we could look to the default booking request).

The fare options are all set to a default value "T" (meaning true) and the fare values are chosen to be all distinct.

We obtain:

```

// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart;
//         DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode;
//         Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price;
//         nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T;
0; 50; BA; Y;
2; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T;
0; 150; BA; Y;
3; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T;
0; 250; BA; Y;
4; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T;
0; 350; BA; Y;
5; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T;
0; 450; BA; Y;
6; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T;
0; 550; BA; Y;
7; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T;
0; 650; BA; Y;
8; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T;
0; 750; BA; Y;
9; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T;
0; 850; BA; Y;
10; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T;
0; 950; BA; Y;
11; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T;
0; 1050; BA; Y;
12; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T;
0; 1150; BA; Y;
13; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T;
0; 90; BA; Y;
14; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T;
0; 190; BA; Y;
15; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T;
0; 290; BA; Y;
16; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T;
0; 390; BA; Y;
17; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T;
0; 490; BA; Y;
18; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T;
0; 590; BA; Y;
19; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T;
0; 690; BA; Y;
20; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T;
0; 790; BA; Y;
21; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T;
0; 890; BA; Y;
22; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T;
0; 990; BA; Y;
23; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T;

```

```

0; 1090; BA; Y;
24; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T;
0; 1190; BA; Y;

```

15.4.2 Building the BOM tree with an input file

The steps are the same as before [Summary of the different steps](#) except the bom tree must be built using the fare input file :

15.4.3 Result of the Batch Program

When the `simfqt.cpp` program is run with the `-f` option linking with the file built just above:

```
~/simfqt -f ~/<YourFileName>.csv
```

the last lines of the log output should look like:

```
[D]~/simfqtgit/simfqt/batches/simfqt.cpp:223: Travel solutions:
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 145, 1 1 1 ---
```

We have just one fare option added to the travel solution. We can deduce from the price value 145 that the fare quoter used the fare rule number 15 to price the travel solution. We have an inbound or outbound trip of a round trip: the total price 290 has been divided by 2.

16 Command-Line Test to Demonstrate How To Test the SimFQT Project

```

*/
// //////////////////////////////////////
// Import section
// //////////////////////////////////////
// STL
#include <sstream>
#include <fstream>
#include <string>
// Boost Unit Test Framework (UTF)
#define BOOST_TEST_DYN_LINK
#define BOOST_TEST_MAIN
#define BOOST_TEST_MODULE FQTTestSuite
#include <boost/test/unit_test.hpp>
// StdAir
#include <stdair/basic/BasLogParams.hpp>
#include <stdair/basic/BasDBParams.hpp>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
// SimFQT
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>

```

```

namespace boost_utf = boost::unit_test;

struct UnitTestConfig {
    UnitTestConfig() {
        static std::ofstream _test_log ("FQTTestSuite_utfresults.xml");
        boost_utf::unit_test_log.set_stream (_test_log);
        boost_utf::unit_test_log.set_format (boost_utf::XML);
        boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
        //boost_utf::unit_test_log.set_threshold_level
            (boost_utf::log_successful_tests);
    }

    ~UnitTestConfig() {
    }
};

// ////////////////////////////////////////
void testFareQuoterHelper (const unsigned short iTestFlag,
                          const stdair::Filename_T iFareInputFilename,
                          const bool isBuiltin) {

    // Output log File
    std::ostringstream oStr;
    oStr << "FQTTestSuite_" << iTestFlag << ".log";
    const stdair::Filename_T lLogFilename (oStr.str());

    // Set the log parameters
    std::ofstream logOutputFile;
    // Open and clean the log outputfile
    logOutputFile.open (lLogFilename.c_str());
    logOutputFile.clear();

    // Initialise the SimFQT service object
    const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
                                           logOutputFile);

    // Initialise the Simfqt service object
    SIMFQT::SIMFQT_Service simfqtService (lLogParams);

    // Check wether or not a (CSV) input file should be read
    if (isBuiltin == true) {

        // Build the default sample BOM tree (filled with fares) for Simfqt
        simfqtService.buildSampleBom();

    } else {

        // Build the BOM tree from parsing the fare input file
        SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
        simfqtService.parseAndLoad (lFareFilePath);
    }

    // Build a sample list of travel solutions and a booking request.
    stdair::TravelSolutionList_T lTravelSolutionList;
    simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
    stdair::BookingRequestStruct lBookingRequest =
        simfqtService.buildBookingRequest();

    // Try to fareQuote the sample list of travel solutions
    simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);

    // Close the log file
    logOutputFile.close();
}

// //////////////////////////////////////// Main: Unit Test Suite ////////////////////////////////////////

// Set the UTF configuration (re-direct the output to a specific file)
BOOST_GLOBAL_FIXTURE (UnitTestConfig);

// Start the test suite
BOOST_AUTO_TEST_SUITE (master_test_suite)

```

```
BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv")
    ;

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin)
    );

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
    /fareError01.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
        SIMFQT::AirportPairNotFoundException);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
    /fareError02.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
        SIMFQT::PosOrChannelNotFoundExtern);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
    /fareError03.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
        SIMFQT::FlightDateNotFoundExtern);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
    /fareError04.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
        SIMFQT::FlightTimeNotFoundExtern);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {
```

```
// Input file name
const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
/fareError05.csv");

// State whether the BOM tree should be built-in or parsed from an input file
const bool isBuiltin = false;

// Try to fareQuote the sample default list of travel solutions
BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
    SIMFQT::FeaturesNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
/fareError06.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
        SIMFQT::AirlineNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
/fareError07.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
        SIMFQT::FareFileParsingFailedException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
/missingFile.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
        SIMFQT::FareInputFileNotFoundExpection);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {

    // Input file name
    const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/" );

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = true;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_NO_THROW (testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin)
        );
}

// End the test suite
BOOST_AUTO_TEST_SUITE_END()

/*!
```

17 Directory Hierarchy

17.1 Directories

This directory hierarchy is sorted roughly, but not completely, alphabetically:

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18 Namespace Index

18.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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This inheritance list is sorted roughly, but not completely, alphabetically:

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22 Directory Documentation

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- file [BasConst_General.hpp](#)
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22.2 simfqt/batches/ Directory Reference

Files

- file [simfqt_parseFareRules.cpp](#)

22.3 simfqt/bom/ Directory Reference

Files

- file [FareRuleStruct.cpp](#)
- file [FareRuleStruct.hpp](#)

22.4 simfqt/ui/cmdline/ Directory Reference

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- file [simfqt.cpp](#)

22.5 simfqt/command/ Directory Reference

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- file [FareRuleGenerator.hpp](#)

22.6 simfqt/config/ Directory Reference

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- file [FacSimfqtServiceContext.cpp](#)
- file [FacSimfqtServiceContext.hpp](#)

22.8 simfqt/service/ Directory Reference

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22.10 simfqt/ Directory Reference

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- file [SIMFQT_Types.hpp](#)

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23 Namespace Documentation

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- class [FareRuleGenerator](#)
- class [FacSimfqtServiceContext](#)
 - Factory for the service context.*
- class [SIMFQT_ServiceContext](#)
 - Class holding the context of the SimFQT services.*
- class [SIMFQT_Service](#)
 - Interface for the [SIMFQT](#) Services.*
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- class [AirportPairNotFoundException](#)
- class [PosOrChannelNotFoundException](#)
- class [FlightDateNotFoundException](#)
- class [FlightTimeNotFoundException](#)
- class [FeaturesNotFoundException](#)
- class [AirlineNotFoundException](#)
- class [FareInputFileNotFoundException](#)
- class [QuotingException](#)
- class [FareFilePath](#)

Typedefs

- typedef unsigned int [FareQuoteID_T](#)
- typedef boost::shared_ptr < [SIMFQT_Service](#) > [SIMFQT_ServicePtr_T](#)

Variables

- const [std::string](#) [DEFAULT_FARE_QUOTER_ID](#) = "IATA"

23.1.1 Typedef Documentation

23.1.1.1 typedef unsigned int [SIMFQT::FareQuoteID_T](#)

ID for the Fare Quote system.

Definition at line 143 of file [SIMFQT_Types.hpp](#).

23.1.1.2 typedef boost::shared_ptr<[SIMFQT_Service](#)> [SIMFQT::SIMFQT_ServicePtr_T](#)

(Smart) Pointer on the SimFQT service handler.

Definition at line 148 of file [SIMFQT_Types.hpp](#).

23.1.2 Variable Documentation

23.1.2.1 `const std::string SIMFQT::DEFAULT_FARE_QUOTER_ID = "IATA"`

Default ID for the [SIMFQT_Service](#).

Definition at line 10 of file [BasConst.cpp](#).

23.2 SIMFQT::FareParserHelper Namespace Reference

Classes

- struct [FareRuleParser](#)
- struct [ParserSemanticAction](#)
- struct [storeFareId](#)
- struct [storeOrigin](#)
- struct [storeDestination](#)
- struct [storeTripType](#)
- struct [storeDateRangeStart](#)
- struct [storeDateRangeEnd](#)
- struct [storeStartRangeTime](#)
- struct [storeEndRangeTime](#)
- struct [storePOS](#)
- struct [storeCabinCode](#)
- struct [storeChannel](#)
- struct [storeAdvancePurchase](#)
- struct [storeSaturdayStay](#)
- struct [storeChangeFees](#)
- struct [storeNonRefundable](#)
- struct [storeMinimumStay](#)
- struct [storeFare](#)
- struct [storeAirlineCode](#)
- struct [storeClass](#)
- struct [doEndFare](#)

Variables

- `stdair::int1_p_t` [int1_p](#)
- `stdair::uint2_p_t` [uint2_p](#)
- `stdair::uint4_p_t` [uint4_p](#)
- `stdair::uint1_4_p_t` [uint1_4_p](#)
- `stdair::hour_p_t` [hour_p](#)
- `stdair::minute_p_t` [minute_p](#)
- `stdair::second_p_t` [second_p](#)
- `stdair::year_p_t` [year_p](#)
- `stdair::month_p_t` [month_p](#)
- `stdair::day_p_t` [day_p](#)

23.2.1 Variable Documentation

23.2.1.1 `stdair::int1_p_t SIMFQT::FareParserHelper::int1_p`

Namespaces. 1-digit-integer parser

Definition at line 444 of file [FareParserHelper.cpp](#).

23.2.1.2 `stdair::uint2_p_t SIMFQT::FareParserHelper::uint2_p`

2-digit-integer parser

Definition at line 447 of file [FareParserHelper.cpp](#).

23.2.1.3 `stdair::uint4_p_t SIMFQT::FareParserHelper::uint4_p`

4-digit-integer parser

Definition at line 450 of file [FareParserHelper.cpp](#).

23.2.1.4 `stdair::uint1_4_p_t SIMFQT::FareParserHelper::uint1_4_p`

Up-to-4-digit-integer parser

Definition at line 453 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.2.1.5 `stdair::hour_p_t SIMFQT::FareParserHelper::hour_p`

Time element parsers.

Definition at line 456 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.2.1.6 `stdair::minute_p_t SIMFQT::FareParserHelper::minute_p`

Definition at line 457 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.2.1.7 `stdair::second_p_t SIMFQT::FareParserHelper::second_p`

Definition at line 458 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.2.1.8 `stdair::year_p_t SIMFQT::FareParserHelper::year_p`

Date element parsers.

Definition at line 461 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.2.1.9 stdair::month_p_t SIMFQT::FareParserHelper::month_p

Definition at line 462 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.2.1.10 stdair::day_p_t SIMFQT::FareParserHelper::day_p

Definition at line 463 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

23.3 stdair Namespace Reference

Forward declarations.

23.3.1 Detailed Description

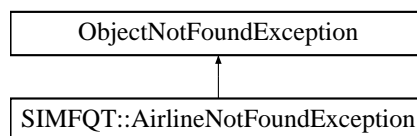
Forward declarations.

24 Class Documentation

24.1 SIMFQT::AirlineNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::AirlineNotFoundException:



Public Member Functions

- [AirlineNotFoundException](#) (const [std::string](#) &iWhat)

24.1.1 Detailed Description

The airline can not be found.

24.1.2 Constructor & Destructor Documentation

24.1.2.1 SIMFQT::AirlineNotFoundException::AirlineNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 104 of file [SIMFQT_Types.hpp](#).

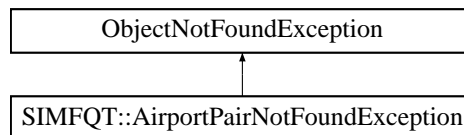
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.2 SIMFQT::AirportPairNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::AirportPairNotFoundException:



Public Member Functions

- [AirportPairNotFoundException](#) (const std::string &iWhat)

24.2.1 Detailed Description

The given airport pair can not be found.

24.2.2 Constructor & Destructor Documentation

24.2.2.1 SIMFQT::AirportPairNotFoundException::AirportPairNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 44 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.3 std::allocator Class Reference

STL class.

24.3.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.4 `std::auto_ptr` Class Reference

STL class.

24.4.1 Detailed Description

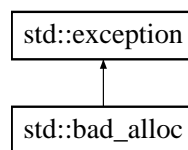
STL class.

The documentation for this class was generated from the following files:

24.5 `std::bad_alloc` Class Reference

STL class.

Inheritance diagram for `std::bad_alloc`:



24.5.1 Detailed Description

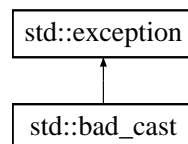
STL class.

The documentation for this class was generated from the following file:

24.6 `std::bad_cast` Class Reference

STL class.

Inheritance diagram for `std::bad_cast`:



24.6.1 Detailed Description

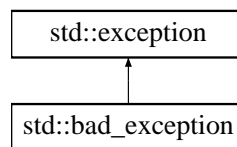
STL class.

The documentation for this class was generated from the following file:

24.7 `std::bad_exception` Class Reference

STL class.

Inheritance diagram for `std::bad_exception`:



24.7.1 Detailed Description

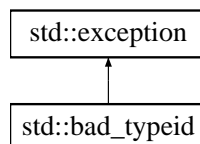
STL class.

The documentation for this class was generated from the following file:

24.8 `std::bad_typeid` Class Reference

STL class.

Inheritance diagram for `std::bad_typeid`:



24.8.1 Detailed Description

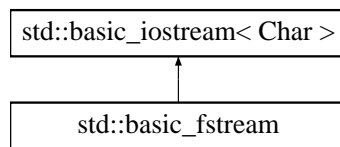
STL class.

The documentation for this class was generated from the following file:

24.9 `std::basic_fstream` Class Reference

STL class.

Inheritance diagram for `std::basic_fstream`:



24.9.1 Detailed Description

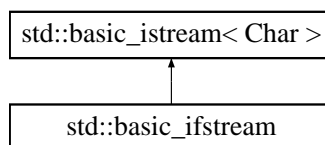
STL class.

The documentation for this class was generated from the following file:

24.10 std::basic_ifstream Class Reference

STL class.

Inheritance diagram for `std::basic_ifstream`:



24.10.1 Detailed Description

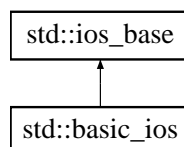
STL class.

The documentation for this class was generated from the following file:

24.11 std::basic_ios Class Reference

STL class.

Inheritance diagram for `std::basic_ios`:



24.11.1 Detailed Description

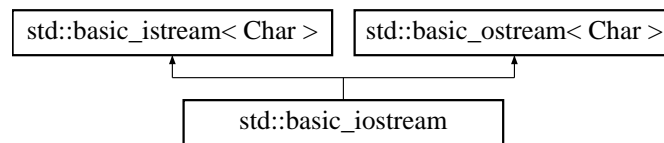
STL class.

The documentation for this class was generated from the following file:

24.12 **std::basic_iostream Class Reference**

STL class.

Inheritance diagram for std::basic_iostream:



24.12.1 Detailed Description

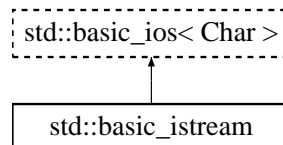
STL class.

The documentation for this class was generated from the following file:

24.13 **std::basic_istream Class Reference**

STL class.

Inheritance diagram for std::basic_istream:



24.13.1 Detailed Description

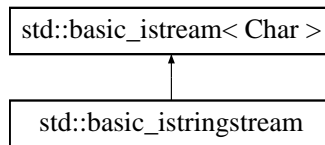
STL class.

The documentation for this class was generated from the following file:

24.14 **std::basic_istringstream Class Reference**

STL class.

Inheritance diagram for std::basic_istringstream:



24.14.1 Detailed Description

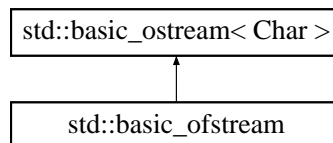
STL class.

The documentation for this class was generated from the following file:

24.15 std::basic_ofstream Class Reference

STL class.

Inheritance diagram for `std::basic_ofstream`:



24.15.1 Detailed Description

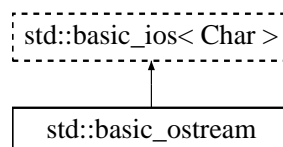
STL class.

The documentation for this class was generated from the following file:

24.16 std::basic_ostream Class Reference

STL class.

Inheritance diagram for `std::basic_ostream`:



24.16.1 Detailed Description

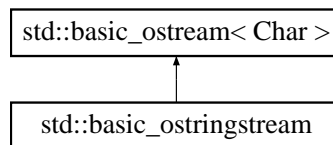
STL class.

The documentation for this class was generated from the following file:

24.17 `std::basic_ostringstream` Class Reference

STL class.

Inheritance diagram for `std::basic_ostringstream`:



24.17.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.18 `std::basic_string` Class Reference

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.18.1 Detailed Description

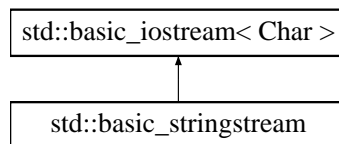
STL class.

The documentation for this class was generated from the following file:

24.19 `std::basic_stringstream` Class Reference

STL class.

Inheritance diagram for `std::basic_stringstream`:



24.19.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.20 `std::bitset` Class Reference

STL class.

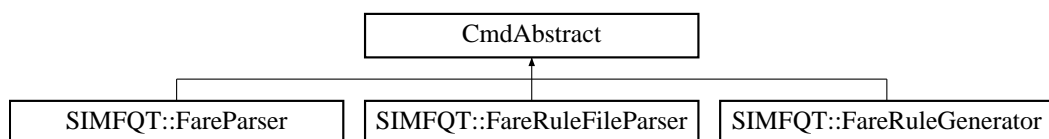
24.20.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.21 `CmdAbstract` Class Reference

Inheritance diagram for `CmdAbstract`:



The documentation for this class was generated from the following file:

- `simfq/command/FareRuleGenerator.hpp`

24.22 `std::complex` Class Reference

STL class.

24.22.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.23 std::basic_string::const_iterator Class Reference

STL iterator class.

24.23.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.24 std::string::const_iterator Class Reference

STL iterator class.

24.24.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.25 std::wstring::const_iterator Class Reference

STL iterator class.

24.25.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.26 std::deque::const_iterator Class Reference

STL iterator class.

24.26.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.27 std::list::const_iterator Class Reference

STL iterator class.

24.27.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.28 std::map::const_iterator Class Reference

STL iterator class.

24.28.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.29 std::multimap::const_iterator Class Reference

STL iterator class.

24.29.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.30 std::set::const_iterator Class Reference

STL iterator class.

24.30.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.31 std::multiset::const_iterator Class Reference

STL iterator class.

24.31.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.32 std::vector::const_iterator Class Reference

STL iterator class.

24.32.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.33 std::basic_string::const_reverse_iterator Class Reference

STL iterator class.

24.33.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.34 std::string::const_reverse_iterator Class Reference

STL iterator class.

24.34.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.35 std::wstring::const_reverse_iterator Class Reference

STL iterator class.

24.35.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.36 std::deque::const_reverse_iterator Class Reference

STL iterator class.

24.36.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.37 std::list::const_reverse_iterator Class Reference

STL iterator class.

24.37.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.38 std::map::const_reverse_iterator Class Reference

STL iterator class.

24.38.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.39 std::multimap::const_reverse_iterator Class Reference

STL iterator class.

24.39.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.40 std::set::const_reverse_iterator Class Reference

STL iterator class.

24.40.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.41 `std::multiset::const_reverse_iterator` Class Reference

STL iterator class.

24.41.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.42 `std::vector::const_reverse_iterator` Class Reference

STL iterator class.

24.42.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.43 `std::deque` Class Reference

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.43.1 Detailed Description

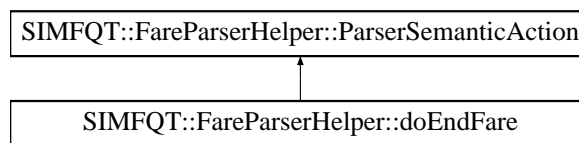
STL class.

The documentation for this class was generated from the following files:

24.44 SIMFQT::FareParserHelper::doEndFare Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::doEndFare:



Public Member Functions

- [doEndFare](#) (stdair::BomRoot &, [FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- stdair::BomRoot & [_bomRoot](#)
- [FareRuleStruct](#) & [_fareRule](#)

24.44.1 Detailed Description

Mark the end of the fare-rule parsing.

24.44.2 Constructor & Destructor Documentation

24.44.2.1 SIMFQT::FareParserHelper::doEndFare::doEndFare (stdair::BomRoot & *ioBomRoot*, FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 417 of file [FareParserHelper.cpp](#).

24.44.3 Member Function Documentation

24.44.3.1 `void SIMFQT::FareParserHelper::doEndFare::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const`

Actor Function (functor).

Definition at line 424 of file [FareParserHelper.cpp](#).

References [_bomRoot](#), [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::describe\(\)](#).

24.44.4 Member Data Documentation

24.44.4.1 `stdair::BomRoot& SIMFQT::FareParserHelper::doEndFare::_bomRoot`

Actor Specific Context.

Definition at line 238 of file [FareParserHelper.hpp](#).

Referenced by [operator\(\)](#).

24.44.4.2 `FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule` [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [operator\(\)](#).

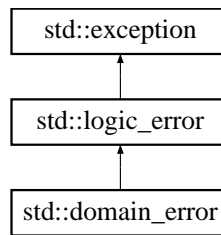
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.45 `std::domain_error` Class Reference

STL class.

Inheritance diagram for `std::domain_error`:



24.45.1 Detailed Description

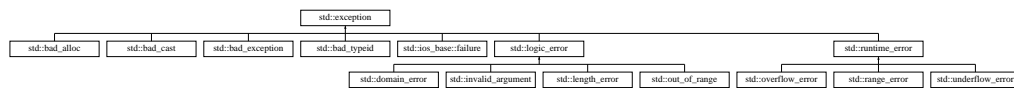
STL class.

The documentation for this class was generated from the following file:

24.46 std::exception Class Reference

STL class.

Inheritance diagram for std::exception:



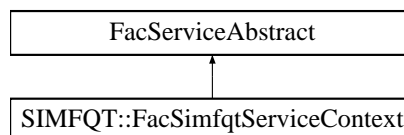
24.46.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.47 FacServiceAbstract Class Reference

Inheritance diagram for FacServiceAbstract:



The documentation for this class was generated from the following file:

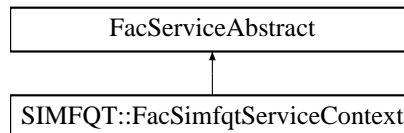
- [simfqt/factory/FacSimfqtServiceContext.hpp](#)

24.48 SIMFQT::FacSimfqtServiceContext Class Reference

Factory for the service context.

```
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
```

Inheritance diagram for SIMFQT::FacSimfqtServiceContext:



Public Member Functions

- [~FacSimfqtServiceContext\(\)](#)
- [SIMFQT_ServiceContext & create\(\)](#)

Static Public Member Functions

- static [FacSimfqtServiceContext & instance\(\)](#)

Protected Member Functions

- [FacSimfqtServiceContext\(\)](#)

24.48.1 Detailed Description

Factory for the service context.

24.48.2 Constructor & Destructor Documentation

24.48.2.1 SIMFQT::FacSimfqtServiceContext::~~FacSimfqtServiceContext()

Destructor.

The Destruction put the `_instance` to NULL in order to be clean for the next [FacSimfqt-ServiceContext::instance\(\)](#).

Definition at line 17 of file [FacSimfqtServiceContext.cpp](#).

24.48.2.2 SIMFQT::FacSimfqtServiceContext::FacSimfqtServiceContext() [inline, protected]

Default Constructor.

This constructor is protected in order to ensure the singleton pattern.

Definition at line 57 of file [FacSimfqtServiceContext.hpp](#).

Referenced by [instance\(\)](#).

24.48.3 Member Function Documentation

24.48.3.1 `FacSimfqtServiceContext & SIMFQT::FacSimfqtServiceContext::instance ()` [static]

Provide the unique instance.

The singleton is instantiated when first used.

Returns

`FacServiceContext&`

Definition at line 22 of file [FacSimfqtServiceContext.cpp](#).

References [FacSimfqtServiceContext\(\)](#).

24.48.3.2 `SIMFQT_ServiceContext & SIMFQT::FacSimfqtServiceContext::create ()`

Create a new `ServiceContext` object.

This new object is added to the list of instantiated objects.

Returns

`ServiceContext&` The newly created object.

Definition at line 34 of file [FacSimfqtServiceContext.cpp](#).

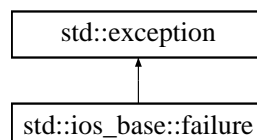
The documentation for this class was generated from the following files:

- [simfqt/factory/FacSimfqtServiceContext.hpp](#)
- [simfqt/factory/FacSimfqtServiceContext.cpp](#)

24.49 `std::ios_base::failure` Class Reference

STL class.

Inheritance diagram for `std::ios_base::failure`:



24.49.1 Detailed Description

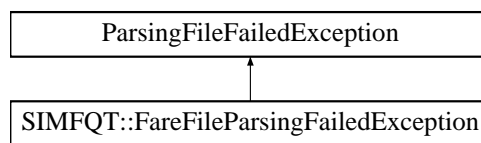
STL class.

The documentation for this class was generated from the following file:

24.50 SIMFQT::FareFileParsingFailedException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FareFileParsingFailedException:



Public Member Functions

- [FareFileParsingFailedException](#) (const [std::string](#) &iWhat)

24.50.1 Detailed Description

The fare input file can not be parsed.

24.50.2 Constructor & Destructor Documentation

24.50.2.1 SIMFQT::FareFileParsingFailedException::FareFileParsingFailedException (const [std::string](#) & *iWhat*) [\[inline\]](#)

Constructor.

Definition at line 32 of file [SIMFQT_Types.hpp](#).

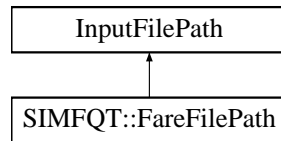
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.51 SIMFQT::FareFilePath Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FareFilePath:



Public Member Functions

- [FareFilePath](#) (const stdair::Filename_T &iFilename)

24.51.1 Detailed Description

Fare input file.

24.51.2 Constructor & Destructor Documentation

24.51.2.1 SIMFQT::FareFilePath::FareFilePath (const stdair::Filename_T &iFilename)
[inline, explicit]

Constructor.

Definition at line 135 of file [SIMFQT_Types.hpp](#).

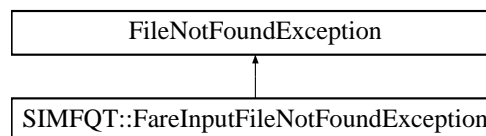
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.52 SIMFQT::FareInputFileNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FareInputFileNotFoundException:



Public Member Functions

- [FareInputFileNotFoundException](#) (const std::string &iWhat)

24.52.1 Detailed Description

The fare input file can not be found.

24.52.2 Constructor & Destructor Documentation

24.52.2.1 SIMFQT::FareInputFileNotFoundException::FareInputFileNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 116 of file [SIMFQT_Types.hpp](#).

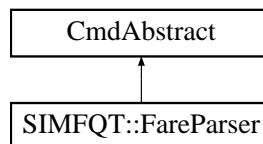
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.53 SIMFQT::FareParser Class Reference

```
#include <simfqt/command/FareParser.hpp>
```

Inheritance diagram for SIMFQT::FareParser:



Static Public Member Functions

- static void [fareRuleGeneration](#) (const [FareFilePath](#) &, stdair::BomRoot &)

24.53.1 Detailed Description

Class wrapping the parser entry point.

24.53.2 Member Function Documentation

24.53.2.1 void SIMFQT::FareParser::fareRuleGeneration (const [FareFilePath](#) & *iFareFilename*, stdair::BomRoot & *ioBomRoot*) [static]

Parses the CSV file describing the fares for the simulator, and generates the fare bom tree accordingly.

Parameters

<i>const</i>	FareFilePath & The file-name of the CSV-formatted fare input file.
<i>stdair::Bom-Root</i> &	Root of the BOM tree.

Definition at line 17 of file [FareParser.cpp](#).

References [SIMFQT::FareRuleFileParser::generateFareRules\(\)](#).

Referenced by [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareParser.hpp](#)
- [simfqt/command/FareParser.cpp](#)

24.54 SIMFQT::FareQuoter Class Reference

Command wrapping the pricing request process.

```
#include <simfqt/command/FareQuoter.hpp>
```

Friends

- class [SIMFQT_Service](#)

24.54.1 Detailed Description

Command wrapping the pricing request process.

24.54.2 Friends And Related Function Documentation

24.54.2.1 friend class SIMFQT_Service [friend]

Friend classes: only the SimFQT service may access to the methods of that command class.

Definition at line 32 of file [FareQuoter.hpp](#).

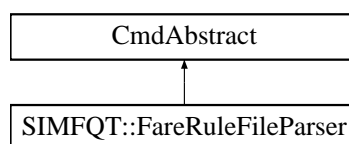
The documentation for this class was generated from the following files:

- [simfqt/command/FareQuoter.hpp](#)
- [simfqt/command/FareQuoter.cpp](#)

24.55 SIMFQT::FareRuleFileParser Class Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareRuleFileParser:



Public Member Functions

- [FareRuleFileParser](#) (stdair::BomRoot &ioBomRoot, const stdair::Filename_T &i-Filename)
- void [generateFareRules](#) ()

24.55.1 Detailed Description

Class wrapping the initialisation and entry point of the parser.

The seemingly redundancy is used to force the instantiation of the actual parser, which is a templatised Boost Spirit grammar. Hence, the actual parser is instantiated within that class object code.

24.55.2 Constructor & Destructor Documentation

24.55.2.1 SIMFQT::FareRuleFileParser::FareRuleFileParser (stdair::BomRoot & ioBomRoot, const stdair::Filename_T & iFilename)

Constructor.

Definition at line 642 of file [FareParserHelper.cpp](#).

24.55.3 Member Function Documentation

24.55.3.1 void SIMFQT::FareRuleFileParser::generateFareRules ()

Parse the input file and generate the fare rules.

Definition at line 664 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

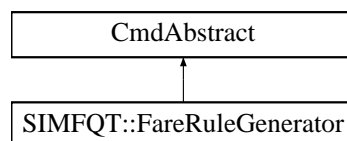
The documentation for this class was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.56 SIMFQT::FareRuleGenerator Class Reference

```
#include <simfqt/command/FareRuleGenerator.hpp>
```

Inheritance diagram for SIMFQT::FareRuleGenerator:



Friends

- class [FareFileParser](#)
- struct [FareParserHelper::doEndFare](#)
- class [FareParser](#)

24.56.1 Detailed Description

Class handling the generation / instantiation of the Fare BOM.

24.56.2 Friends And Related Function Documentation

24.56.2.1 friend class [FareFileParser](#) `[friend]`

Definition at line 38 of file [FareRuleGenerator.hpp](#).

24.56.2.2 friend struct [FareParserHelper::doEndFare](#) `[friend]`

Definition at line 39 of file [FareRuleGenerator.hpp](#).

24.56.2.3 friend class [FareParser](#) `[friend]`

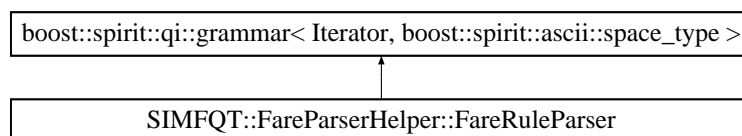
Definition at line 40 of file [FareRuleGenerator.hpp](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareRuleGenerator.hpp](#)
- [simfqt/command/FareRuleGenerator.cpp](#)

24.57 SIMFQT::FareParserHelper::FareRuleParser Struct Reference

Inheritance diagram for SIMFQT::FareParserHelper::FareRuleParser:



Public Member Functions

- [FareRuleParser](#) (stdair::BomRoot &ioBomRoot, [FareRuleStruct](#) &iofareRule)

Public Attributes

- `boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type >` [start](#)

- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [comments](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [fare_rule](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [fare_rule_end](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [fare_key](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [fare_id](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [origin](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [destination](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [tripType](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [dateRangeStart](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [dateRangeEnd](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [date](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [timeRangeStart](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [timeRangeEnd](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [time](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [point_of_sale](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [cabinCode](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [channel](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [advance-Purchase](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [saturdayStay](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [changeFees](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [nonRefundable](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [minimumStay](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [fare](#)
- boost::spirit::qi::rule < Iterator, boost::spirit::ascii::space_type > [segment](#)
- stdair::BomRoot & [_bomRoot](#)
- [FareRuleStruct](#) & [_fareRule](#)

24.57.1 Detailed Description

Fare: fareID; OriginCity; DestinationCity; DateRangeStart; DateRangeEnd; Departure-TimeRangeStart; DepartureTimeRangeEnd; POS; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; AirlineCode; Class;

fareID OriginCity (3-char airport code) DestinationCity (3-char airport code) DateRange-Start (yyyy-mm-dd) DateRangeEnd (yyyy-mm-dd) DepartureTimeRangeStart (hh:mm) DepartureTimeRangeEnd (hh:mm) POS (3-char point_of_sale city) Cabin Code (1-char cabin code) Channel (D=direct, I=indirect, N=oNline, F=oFfline) AdvancePurchase - SaturdayNight (T=True, F=False) ChangeFees (T=True, F=False) NonRefundable (T=True, F=False) MinimumStay Price AirlineCode (2-char airline code) ClassList (List of 1-char class code) Grammar for the Fare-Rule parser.

24.57.2 Constructor & Destructor Documentation

24.57.2.1 **SIMFQT::FareParserHelper::FareRuleParser** (*stdair::BomRoot & ioBomRoot*, *FareRuleStruct & iofareRule*) *[inline]*

Definition at line 504 of file [FareParserHelper.cpp](#).

References [start](#), [comments](#), [fare_rule](#), [fare_key](#), [segment](#), [fare_rule_end](#), [_bomRoot](#), [_fareRule](#), [fare_id](#), [origin](#), [destination](#), [tripType](#), [dateRangeStart](#), [dateRangeEnd](#), [timeRangeStart](#), [timeRangeEnd](#), [point_of_sale](#), [cabinCode](#), [channel](#), [advancePurchase](#), [saturdayStay](#), [changeFees](#), [nonRefundable](#), [minimumStay](#), [fare](#), [SIMFQT::FareParserHelper::uint1_4_p](#), [date](#), [SIMFQT::FareParserHelper::year_p](#), [SIMFQT::FareRuleStruct::_itYear](#), [SIMFQT::FareParserHelper::month_p](#), [SIMFQT::FareRuleStruct::_itMonth](#), [SIMFQT::FareParserHelper::day_p](#), [SIMFQT::FareRuleStruct::_itDay](#), [time](#), [SIMFQT::FareParserHelper::hour_p](#), [SIMFQT::FareRuleStruct::_itHours](#), [SIMFQT::FareParserHelper::minute_p](#), [SIMFQT::FareRuleStruct::_itMinutes](#), [SIMFQT::FareParserHelper::second_p](#), and [SIMFQT::FareRuleStruct::_itSeconds](#).

24.57.3 Member Data Documentation

24.57.3.1 **boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>**
SIMFQT::FareParserHelper::FareRuleParser::start

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.2 **boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>**
SIMFQT::FareParserHelper::FareRuleParser::comments

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.3 **boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>**
SIMFQT::FareParserHelper::FareRuleParser::fare_rule

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.4 **boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>**
SIMFQT::FareParserHelper::FareRuleParser::fare_rule_end

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.5 **boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>**
SIMFQT::FareParserHelper::FareRuleParser::fare_key

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.6 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::fare_id`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.7 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::origin`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.8 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::destination`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.9 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::tripType`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.10 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::dateRangeStart`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.11 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::dateRangeEnd`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.12 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::date`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.13 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::timeRangeStart`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.14 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::timeRangeEnd`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.15 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::time`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.16 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::point_of_sale`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.17 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::cabinCode`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.18 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::channel`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.19 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::advancePurchase`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.20 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::saturdayStay`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.21 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser::changeFees`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.22 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::nonRefundable`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.23 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::minimumStay`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.24 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::fare`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.25 `boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>`
`SIMFQT::FareParserHelper::FareRuleParser::segment`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.26 `stdair::BomRoot& SIMFQT::FareParserHelper::FareRuleParser::_bom-`
`Root`

Definition at line 627 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

24.57.3.27 `FareRuleStruct& SIMFQT::FareParserHelper::FareRuleParser::_fare-`
`Rule`

Definition at line 628 of file [FareParserHelper.cpp](#).

Referenced by [FareRuleParser\(\)](#).

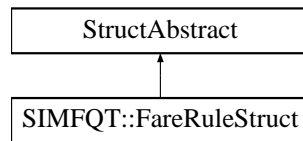
The documentation for this struct was generated from the following file:

- [simfqt/command/FareParserHelper.cpp](#)

24.58 SIMFQT::FareRuleStruct Struct Reference

```
#include <simfqt/bom/FareRuleStruct.hpp>
```

Inheritance diagram for SIMFQT::FareRuleStruct:



Public Member Functions

- [FareRuleStruct](#) ()
- [SIMFQT::FareQuotID_T getFareID](#) () const
- [stdair::AirportCode_T getOrigin](#) () const
- [stdair::AirportCode_T getDestination](#) () const
- [stdair::TripType_T getTripType](#) () const
- [stdair::Date_T getDateRangeStart](#) () const
- [stdair::Date_T getDateRangeEnd](#) () const
- [stdair::Duration_T getTimeRangeStart](#) () const
- [stdair::Duration_T getTimeRangeEnd](#) () const
- [stdair::CabinCode_T getCabinCode](#) () const
- [const stdair::CityCode_T getPOS](#) () const
- [stdair::ChannelLabel_T getChannel](#) () const
- [stdair::DayDuration_T getAdvancePurchase](#) () const
- [stdair::SaturdayStay_T getSaturdayStay](#) () const
- [stdair::ChangeFees_T getChangeFees](#) () const
- [stdair::NonRefundable_T getNonRefundable](#) () const
- [stdair::DayDuration_T getMinimumStay](#) () const
- [stdair::PriceValue_T getFare](#) () const
- [stdair::AirlineCode_T getAirlineCode](#) () const
- [stdair::ClassCode_T getClassCode](#) () const
- [const unsigned int getAirlineListSize](#) () const
- [const unsigned int getClassCodeListSize](#) () const
- [stdair::AirlineCodeList_T getAirlineList](#) () const
- [stdair::ClassList_StringList_T getClassCodeList](#) () const
- [stdair::Date_T calculateDate](#) () const
- [stdair::Duration_T calculateTime](#) () const
- [const std::string describe](#) () const
- [void setFareID](#) (const [SIMFQT::FareQuotID_T](#) &iFareQuotID)
- [void setOrigin](#) (const [stdair::AirportCode_T](#) &iOrigin)
- [void setDestination](#) (const [stdair::AirportCode_T](#) &iDestination)
- [void setTripType](#) (const [stdair::TripType_T](#) &iTripType)
- [void setDateRangeStart](#) (const [stdair::Date_T](#) &iDateRangeStart)
- [void setDateRangeEnd](#) (const [stdair::Date_T](#) &iDateRangeEnd)
- [void setTimeRangeStart](#) (const [stdair::Duration_T](#) &iTimeRangeStart)
- [void setTimeRangeEnd](#) (const [stdair::Duration_T](#) &iTimeRangeEnd)
- [void setCabinCode](#) (const [stdair::CabinCode_T](#) &iCabinCode)
- [void setPOS](#) (const [stdair::CityCode_T](#) &iPOS)
- [void setChannel](#) (const [stdair::ChannelLabel_T](#) &iChannel)

- void [setAdvancePurchase](#) (const stdair::DayDuration_T &iAdvancePurchase)
- void [setSaturdayStay](#) (const stdair::SaturdayStay_T &iSaturdayStay)
- void [setChangeFees](#) (const stdair::ChangeFees_T &iChangeFees)
- void [setNonRefundable](#) (const stdair::NonRefundable_T &iNonRefundable)
- void [setMinimumStay](#) (const stdair::DayDuration_T &iMinimumStay)
- void [setFare](#) (const stdair::PriceValue_T &iFare)
- void [setAirlineCode](#) (const stdair::AirlineCode_T &iAirlineCode)
- void [setClassCode](#) (const stdair::ClassCode_T &iClassCode)
- void [clearAirlineCodeList](#) ()
- void [clearClassCodeList](#) ()
- void [addAirlineCode](#) (const stdair::AirlineCode_T &iAirlineCode)
- void [addClassCode](#) (const stdair::ClassCode_T &iClassCode)

Public Attributes

- stdair::year_t [_itYear](#)
- stdair::month_t [_itMonth](#)
- stdair::day_t [_itDay](#)
- stdair::hour_t [_itHours](#)
- stdair::minute_t [_itMinutes](#)
- stdair::second_t [_itSeconds](#)

24.58.1 Detailed Description

Utility Structure for the parsing of fare-rule structures.

24.58.2 Constructor & Destructor Documentation

24.58.2.1 SIMFQT::FareRuleStruct::FareRuleStruct ()

Default constructor.

Definition at line 17 of file [FareRuleStruct.cpp](#).

24.58.3 Member Function Documentation

24.58.3.1 SIMFQT::FareQuoteID_T SIMFQT::FareRuleStruct::getFareID () const [inline]

Get the fare ID.

Definition at line 30 of file [FareRuleStruct.hpp](#).

24.58.3.2 `stdair::AirportCode_T SIMFQT::FareRuleStruct::getOrigin () const [inline]`

Get the origin.

Definition at line 35 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.58.3.3 `stdair::AirportCode_T SIMFQT::FareRuleStruct::getDestination () const [inline]`

Get the destination.

Definition at line 40 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.58.3.4 `stdair::TripType_T SIMFQT::FareRuleStruct::getTripType () const [inline]`

Get the trip type.

Definition at line 45 of file [FareRuleStruct.hpp](#).

24.58.3.5 `stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeStart () const [inline]`

Get the date range start.

Definition at line 50 of file [FareRuleStruct.hpp](#).

24.58.3.6 `stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeEnd () const [inline]`

Get the date range end.

Definition at line 55 of file [FareRuleStruct.hpp](#).

24.58.3.7 `stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeStart () const [inline]`

Get the time range start.

Definition at line 60 of file [FareRuleStruct.hpp](#).

24.58.3.8 `stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeEnd () const [inline]`

Get the time range end.

Definition at line 65 of file [FareRuleStruct.hpp](#).

24.58.3.9 `stdair::CabinCode_T SIMFQT::FareRuleStruct::getCabinCode () const [inline]`

Get the cabin code.

Definition at line 70 of file [FareRuleStruct.hpp](#).

24.58.3.10 `const stdair::CityCode_T SIMFQT::FareRuleStruct::getPOS () const [inline]`

Get the point-of-sale.

Definition at line 75 of file [FareRuleStruct.hpp](#).

24.58.3.11 `stdair::ChannelLabel_T SIMFQT::FareRuleStruct::getChannel () const [inline]`

Get the channel.

Definition at line 80 of file [FareRuleStruct.hpp](#).

24.58.3.12 `stdair::DayDuration_T SIMFQT::FareRuleStruct::getAdvancePurchase () const [inline]`

Get the advance purchase.

Definition at line 85 of file [FareRuleStruct.hpp](#).

24.58.3.13 `stdair::SaturdayStay_T SIMFQT::FareRuleStruct::getSaturdayStay () const [inline]`

Get the saturday stay option.

Definition at line 90 of file [FareRuleStruct.hpp](#).

24.58.3.14 `stdair::ChangeFees_T SIMFQT::FareRuleStruct::getChangeFees () const [inline]`

Get the change fees.

Definition at line 95 of file [FareRuleStruct.hpp](#).

24.58.3.15 `stdair::NonRefundable_T SIMFQT::FareRuleStruct::getNonRefundable () const [inline]`

Get the refundable option.

Definition at line 100 of file [FareRuleStruct.hpp](#).

24.58.3.16 `stdair::DayDuration_T SIMFQT::FareRuleStruct::getMinimumStay () const [inline]`

Get the minimum stay.

Definition at line 105 of file [FareRuleStruct.hpp](#).

24.58.3.17 `stdair::PriceValue_T SIMFQT::FareRuleStruct::getFare () const [inline]`

Get the fare.

Definition at line 110 of file [FareRuleStruct.hpp](#).

24.58.3.18 `stdair::AirlineCode_T SIMFQT::FareRuleStruct::getAirlineCode () const`
[inline]

Get the airline code.

Definition at line 115 of file [FareRuleStruct.hpp](#).

24.58.3.19 `stdair::ClassCode_T SIMFQT::FareRuleStruct::getClassCode () const`
[inline]

Get the class code.

Definition at line 120 of file [FareRuleStruct.hpp](#).

24.58.3.20 `const unsigned int SIMFQT::FareRuleStruct::getAirlineListSize () const`
[inline]

Get the size of the airline code list.

Definition at line 125 of file [FareRuleStruct.hpp](#).

24.58.3.21 `const unsigned int SIMFQT::FareRuleStruct::getClassCodeListSize () const`
[inline]

Get the size of the class code list.

Definition at line 130 of file [FareRuleStruct.hpp](#).

24.58.3.22 `stdair::AirlineCodeList_T SIMFQT::FareRuleStruct::getAirlineList () const`
[inline]

Get the airline code list.

Definition at line 135 of file [FareRuleStruct.hpp](#).

24.58.3.23 `stdair::ClassList_StringList_T SIMFQT::FareRuleStruct::getClassCodeList () const`
[inline]

Get the class code list.

Definition at line 140 of file [FareRuleStruct.hpp](#).

24.58.3.24 `stdair::Date_T SIMFQT::FareRuleStruct::calculateDate () const`

Calculate the date from the staging details.

Definition at line 39 of file [FareRuleStruct.cpp](#).

References [_itYear](#), [_itMonth](#), and [_itDay](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), and [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#).

24.58.3.25 `stdair::Duration_T SIMFQT::FareRuleStruct::calculateTime () const`

Calculate the time from the staging details.

Definition at line 45 of file [FareRuleStruct.cpp](#).

References [_itHours](#), [_itMinutes](#), and [_itSeconds](#).

Referenced by [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#).

24.58.3.26 `const std::string SIMFQT::FareRuleStruct::describe () const`

Display of the structure.

Definition at line 54 of file [FareRuleStruct.cpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

24.58.3.27 `void SIMFQT::FareRuleStruct::setFareID (const SIMFQT::FareQuoteID_T & iFareQuoteID) [inline]`

Set the fare ID.

Definition at line 158 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.58.3.28 `void SIMFQT::FareRuleStruct::setOrigin (const stdair::AirportCode_T & iOrigin) [inline]`

Set the origin.

Definition at line 163 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#).

24.58.3.29 `void SIMFQT::FareRuleStruct::setDestination (const stdair::AirportCode_T & iDestination) [inline]`

Set the destination.

Definition at line 168 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#).

24.58.3.30 `void SIMFQT::FareRuleStruct::setTripType (const stdair::TripType_T & iTripType) [inline]`

Set the trip type.

Definition at line 173 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#).

24.58.3.31 `void SIMFQT::FareRuleStruct::setDateRangeStart (const stdair::Date_T & iDateRangeStart) [inline]`

Set the date range start.

Definition at line 178 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#).

24.58.3.32 `void SIMFQT::FareRuleStruct::setDateRangeEnd (const stdair::Date_T &
iDateRangeEnd) [inline]`

Set the date range end.

Definition at line 183 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#).

24.58.3.33 `void SIMFQT::FareRuleStruct::setTimeRangeStart (const stdair::Duration_T &
iTimeRangeStart) [inline]`

Set the time range start.

Definition at line 188 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#).

24.58.3.34 `void SIMFQT::FareRuleStruct::setTimeRangeEnd (const stdair::Duration_T &
iTimeRangeEnd) [inline]`

Set the time range end.

Definition at line 193 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#).

24.58.3.35 `void SIMFQT::FareRuleStruct::setCabinCode (const stdair::CabinCode_T &
iCabinCode) [inline]`

Set the cabin code.

Definition at line 198 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#).

24.58.3.36 `void SIMFQT::FareRuleStruct::setPOS (const stdair::CityCode_T & iPOS)
[inline]`

Set the point-of-sale.

Definition at line 203 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.58.3.37 `void SIMFQT::FareRuleStruct::setChannel (const stdair::ChannelLabel_T & iChannel
) [inline]`

Set the channel.

Definition at line 208 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#).

24.58.3.38 void SIMFQT::FareRuleStruct::setAdvancePurchase (const stdair::DayDuration_T & *iAdvancePurchase*) [inline]

Set the advance purchase.

Definition at line 213 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#).

24.58.3.39 void SIMFQT::FareRuleStruct::setSaturdayStay (const stdair::SaturdayStay_T & *iSaturdayStay*) [inline]

Set the saturday stay option.

Definition at line 218 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#).

24.58.3.40 void SIMFQT::FareRuleStruct::setChangeFees (const stdair::ChangeFees_T & *iChangeFees*) [inline]

Set the change fees.

Definition at line 223 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#).

24.58.3.41 void SIMFQT::FareRuleStruct::setNonRefundable (const stdair::NonRefundable_T & *iNonRefundable*) [inline]

Set the refundable option.

Definition at line 228 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#).

24.58.3.42 void SIMFQT::FareRuleStruct::setMinimumStay (const stdair::DayDuration_T & *iMinimumStay*) [inline]

Set the minimum stay.

Definition at line 233 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#).

24.58.3.43 void SIMFQT::FareRuleStruct::setFare (const stdair::PriceValue_T & *iFare*) [inline]

Set the fare.

Definition at line 238 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFare::operator\(\)](#).

24.58.3.44 void SIMFQT::FareRuleStruct::setAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Set the airline code.

Definition at line 243 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.58.3.45 void SIMFQT::FareRuleStruct::setClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Set the class code.

Definition at line 248 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.58.3.46 void SIMFQT::FareRuleStruct::clearAirlineCodeList () [inline]

Empty the airline code list.

Definition at line 253 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.58.3.47 void SIMFQT::FareRuleStruct::clearClassCodeList () [inline]

Empty the class code list.

Definition at line 258 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.58.3.48 void SIMFQT::FareRuleStruct::addAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Add an airline code to the list.

Definition at line 263 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#).

24.58.3.49 void SIMFQT::FareRuleStruct::addClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Add a class code to the list.

Definition at line 268 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeClass::operator\(\)](#).

24.58.4 Member Data Documentation

24.58.4.1 stdair::year_t SIMFQT::FareRuleStruct::_itYear

Staging Date.

Definition at line 275 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

24.58.4.2 stdair::month_t SIMFQT::FareRuleStruct::_itMonth

Definition at line 276 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

24.58.4.3 stdair::day_t SIMFQT::FareRuleStruct::_itDay

Definition at line 277 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

24.58.4.4 stdair::hour_t SIMFQT::FareRuleStruct::_itHours

Staging Time.

Definition at line 280 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

24.58.4.5 stdair::minute_t SIMFQT::FareRuleStruct::_itMinutes

Definition at line 281 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

24.58.4.6 stdair::second_t SIMFQT::FareRuleStruct::_itSeconds

Definition at line 282 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser::FareRuleParser\(\)](#).

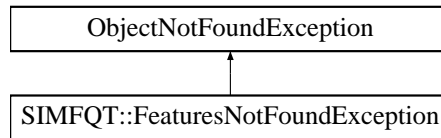
The documentation for this struct was generated from the following files:

- [simfqt/bom/FareRuleStruct.hpp](#)
- [simfqt/bom/FareRuleStruct.cpp](#)

24.59 SIMFQT::FeaturesNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FeaturesNotFoundException:



Public Member Functions

- [FeaturesNotFoundException](#) (const [std::string](#) &iWhat)

24.59.1 Detailed Description

The fare features can not be found.

24.59.2 Constructor & Destructor Documentation

24.59.2.1 SIMFQT::FeaturesNotFoundException::FeaturesNotFoundException (const [std::string](#) & *iWhat*) [\[inline\]](#)

Constructor.

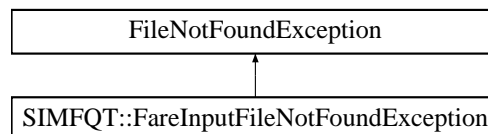
Definition at line 92 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.60 FileNotFoundException Class Reference

Inheritance diagram for FileNotFoundException:



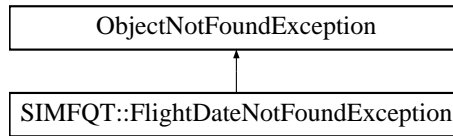
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.61 SIMFQT::FlightDateNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FlightDateNotFoundException:



Public Member Functions

- [FlightDateNotFoundException](#) (const `std::string` &iWhat)

24.61.1 Detailed Description

The departure date of the flight can not be found.

24.61.2 Constructor & Destructor Documentation

24.61.2.1 `SIMFQT::FlightDateNotFoundException::FlightDateNotFoundException (const std::string & iWhat)` `[inline]`

Constructor.

Definition at line 68 of file [SIMFQT_Types.hpp](#).

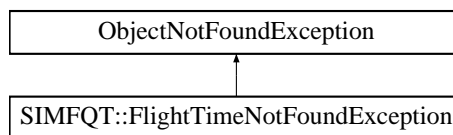
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.62 SIMFQT::FlightTimeNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FlightTimeNotFoundException:



Public Member Functions

- [FlightTimeNotFoundException](#) (const `std::string` &iWhat)

24.62.1 Detailed Description

The departure time of the flight can not be found.

24.62.2 Constructor & Destructor Documentation

24.62.2.1 SIMFQT::FlightTimeNotFoundException::FlightTimeNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 80 of file [SIMFQT_Types.hpp](#).

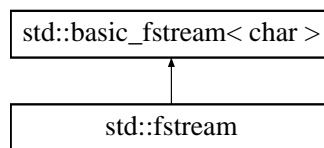
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.63 std::fstream Class Reference

STL class.

Inheritance diagram for std::fstream:



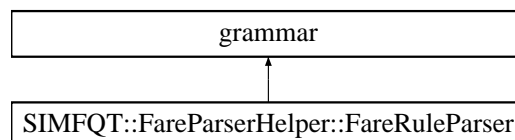
24.63.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.64 grammar Class Reference

Inheritance diagram for grammar:



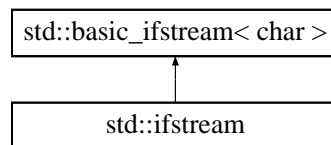
The documentation for this class was generated from the following file:

- [simfqt/command/FareParserHelper.cpp](#)

24.65 `std::ifstream` Class Reference

STL class.

Inheritance diagram for `std::ifstream`:



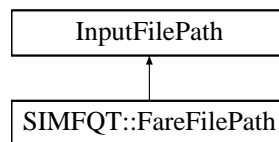
24.65.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.66 `InputFilePath` Class Reference

Inheritance diagram for `InputFilePath`:



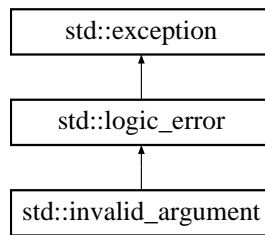
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.67 `std::invalid_argument` Class Reference

STL class.

Inheritance diagram for `std::invalid_argument`:



24.67.1 Detailed Description

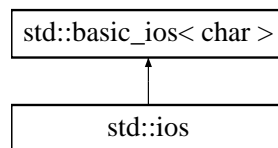
STL class.

The documentation for this class was generated from the following file:

24.68 `std::ios` Class Reference

STL class.

Inheritance diagram for `std::ios`:



24.68.1 Detailed Description

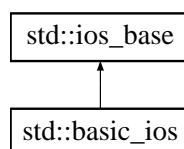
STL class.

The documentation for this class was generated from the following file:

24.69 `std::ios_base` Class Reference

STL class.

Inheritance diagram for `std::ios_base`:



Classes

- class [failure](#)
STL class.

24.69.1 Detailed Description

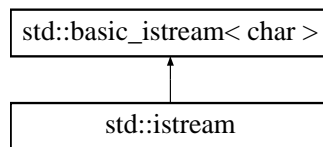
STL class.

The documentation for this class was generated from the following file:

24.70 std::istream Class Reference

STL class.

Inheritance diagram for std::istream:



24.70.1 Detailed Description

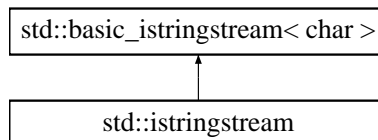
STL class.

The documentation for this class was generated from the following file:

24.71 std::istringstream Class Reference

STL class.

Inheritance diagram for std::istringstream:



24.71.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.72 std::basic_string::iterator Class Reference

STL iterator class.

24.72.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.73 std::wstring::iterator Class Reference

STL iterator class.

24.73.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.74 std::vector::iterator Class Reference

STL iterator class.

24.74.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.75 std::string::iterator Class Reference

STL iterator class.

24.75.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.76 std::deque::iterator Class Reference

STL iterator class.

24.76.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.77 std::list::iterator Class Reference

STL iterator class.

24.77.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.78 std::map::iterator Class Reference

STL iterator class.

24.78.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.79 std::multimap::iterator Class Reference

STL iterator class.

24.79.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.80 std::set::iterator Class Reference

STL iterator class.

24.80.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.81 `std::multiset::iterator` Class Reference

STL iterator class.

24.81.1 Detailed Description

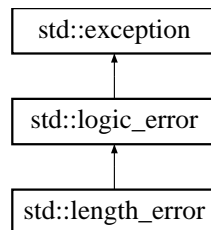
STL iterator class.

The documentation for this class was generated from the following file:

24.82 `std::length_error` Class Reference

STL class.

Inheritance diagram for `std::length_error`:



24.82.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.83 `std::list` Class Reference

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.83.1 Detailed Description

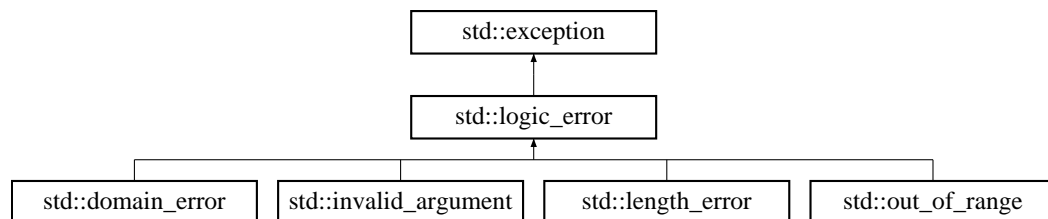
STL class.

The documentation for this class was generated from the following files:

24.84 `std::logic_error` Class Reference

STL class.

Inheritance diagram for `std::logic_error`:



24.84.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.85 `std::map` Class Reference

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.85.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.86 **std::multimap Class Reference**

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.86.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.87 **std::multiset Class Reference**

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

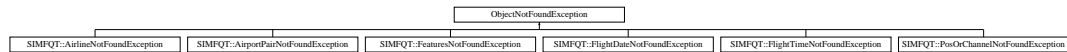
24.87.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.88 ObjectNotFoundException Class Reference

Inheritance diagram for ObjectNotFoundException:



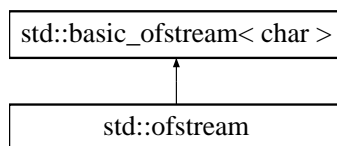
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.89 std::ofstream Class Reference

STL class.

Inheritance diagram for std::ofstream:



24.89.1 Detailed Description

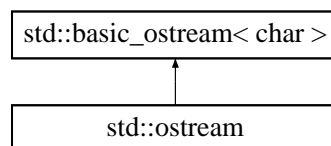
STL class.

The documentation for this class was generated from the following file:

24.90 std::ostream Class Reference

STL class.

Inheritance diagram for std::ostream:



24.90.1 Detailed Description

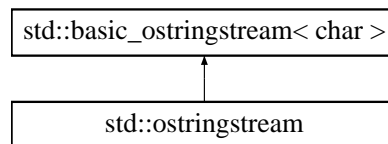
STL class.

The documentation for this class was generated from the following file:

24.91 **std::ostringstream Class Reference**

STL class.

Inheritance diagram for `std::ostringstream`:



24.91.1 Detailed Description

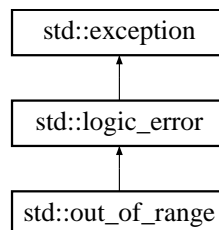
STL class.

The documentation for this class was generated from the following file:

24.92 **std::out_of_range Class Reference**

STL class.

Inheritance diagram for `std::out_of_range`:



24.92.1 Detailed Description

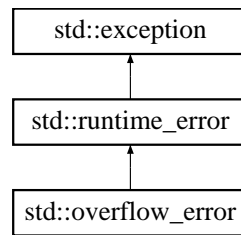
STL class.

The documentation for this class was generated from the following file:

24.93 **std::overflow_error Class Reference**

STL class.

Inheritance diagram for `std::overflow_error`:



24.93.1 Detailed Description

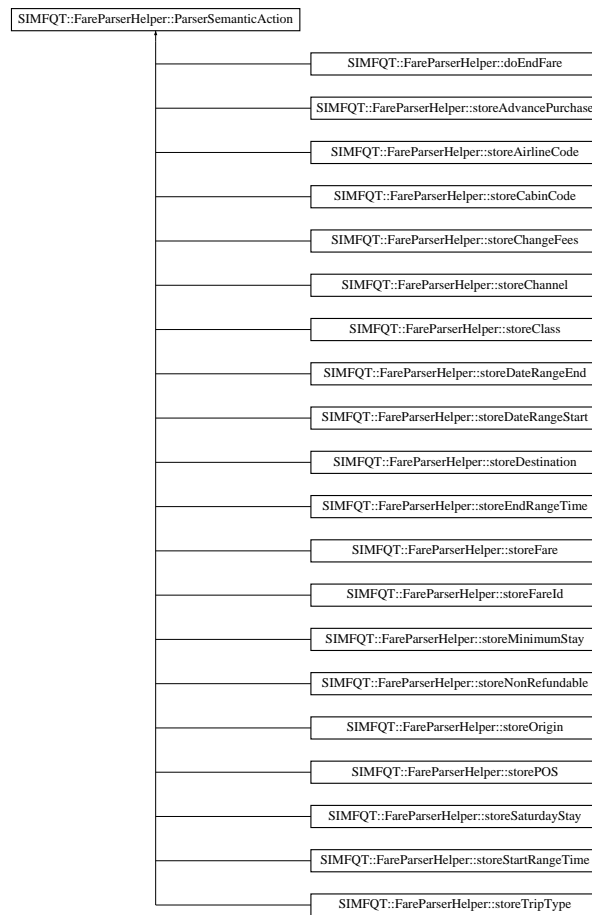
STL class.

The documentation for this class was generated from the following file:

24.94 SIMFQT::FareParserHelper::ParserSemanticAction Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::ParserSemanticAction:



Public Member Functions

- [ParserSemanticAction](#) ([FareRuleStruct](#) &)

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.94.1 Detailed Description

Generic Semantic Action (Actor / Functor) for the Fare Parser.

24.94.2 Constructor & Destructor Documentation

24.94.2.1 SIMFQT::FareParserHelper::ParserSemanticAction::ParserSemanticAction (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 29 of file [FareParserHelper.cpp](#).

24.94.3 Member Data Documentation

24.94.3.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

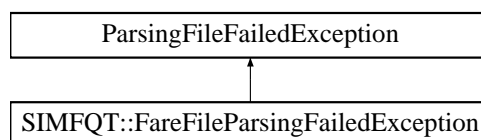
Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.95 ParsingFileFailedException Class Reference

Inheritance diagram for ParsingFileFailedException:



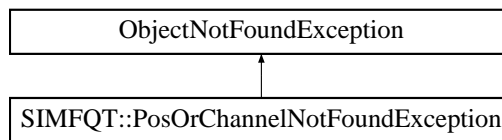
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.96 SIMFQT::PosOrChannelNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::PosOrChannelNotFoundException:



Public Member Functions

- [PosOrChannelNotFoundException](#) (const [std::string](#) &iWhat)

24.96.1 Detailed Description

The given POS/channel can not be found.

24.96.2 Constructor & Destructor Documentation

24.96.2.1 [SIMFQT::PosOrChannelNotFoundException::PosOrChannelNotFoundException \(const std::string & iWhat \)](#) `[inline]`

Constructor.

Definition at line 56 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.97 std::priority_queue Class Reference

STL class.

24.97.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.98 `std::queue` Class Reference

STL class.

24.98.1 Detailed Description

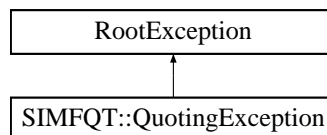
STL class.

The documentation for this class was generated from the following files:

24.99 `SIMFQT::QuotingException` Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for `SIMFQT::QuotingException`:



24.99.1 Detailed Description

The pricing operation fails.

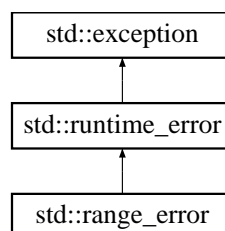
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.100 `std::range_error` Class Reference

STL class.

Inheritance diagram for `std::range_error`:



24.100.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.101 std::map::reverse_iterator Class Reference

STL iterator class.

24.101.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.102 std::multimap::reverse_iterator Class Reference

STL iterator class.

24.102.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.103 std::wstring::reverse_iterator Class Reference

STL iterator class.

24.103.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.104 std::deque::reverse_iterator Class Reference

STL iterator class.

24.104.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.105 std::list::reverse_iterator Class Reference

STL iterator class.

24.105.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.106 std::string::reverse_iterator Class Reference

STL iterator class.

24.106.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.107 std::multiset::reverse_iterator Class Reference

STL iterator class.

24.107.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.108 std::set::reverse_iterator Class Reference

STL iterator class.

24.108.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.109 std::basic_string::reverse_iterator Class Reference

STL iterator class.

24.109.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.110 `std::vector::reverse_iterator` Class Reference

STL iterator class.

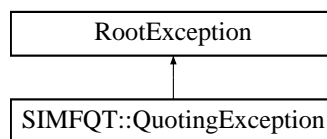
24.110.1 Detailed Description

STL iterator class.

The documentation for this class was generated from the following file:

24.111 `RootException` Class Reference

Inheritance diagram for `RootException`:



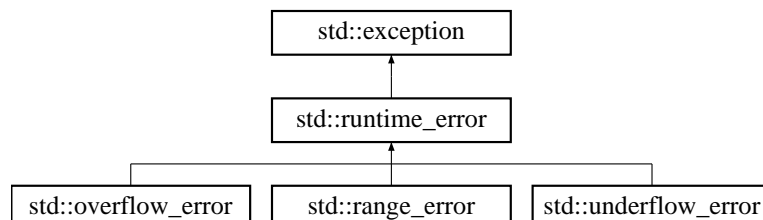
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.112 `std::runtime_error` Class Reference

STL class.

Inheritance diagram for `std::runtime_error`:



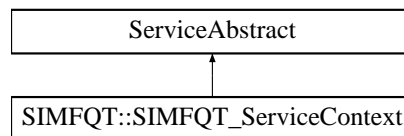
24.112.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.113 ServiceAbstract Class Reference

Inheritance diagram for ServiceAbstract:



The documentation for this class was generated from the following file:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)

24.114 std::set Class Reference

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.114.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.115 SIMFQT::SIMFQT_Service Class Reference

Interface for the [SIMFQT](#) Services.

```
#include <simfqt/SIMFQT_Service.hpp>
```

Public Member Functions

- [SIMFQT_Service](#) (const stdair::BasLogParams &)
- [SIMFQT_Service](#) (const stdair::BasLogParams &, const stdair::BasDBParams &)
- [SIMFQT_Service](#) (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr)
- void [parseAndLoad](#) (const [FareFilePath](#) &iFareFilename)
- [~SIMFQT_Service](#) ()
- void [buildSampleBom](#) ()
- stdair::BookingRequestStruct [buildBookingRequest](#) (const bool isForCRS=false)
- void [buildSampleTravelSolutions](#) (stdair::TravelSolutionList_T &)
- void [quotePrices](#) (const stdair::BookingRequestStruct &, stdair::TravelSolutionList_T &)
- [std::string csvDisplay](#) () const
- [std::string csvDisplay](#) (const stdair::TravelSolutionList_T &) const
- [std::string csvDisplay](#) (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const
- [std::string list](#) () const
- bool [check](#) (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const

24.115.1 Detailed Description

Interface for the [SIMFQT](#) Services.

24.115.2 Constructor & Destructor Documentation

24.115.2.1 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & *iLogParams*)

Constructor.

The `initSimfqtService()` method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

<i>const</i>	stdair::BasLogParams& Parameters for the output log stream.
--------------	---

Definition at line 36 of file [SIMFQT_Service.cpp](#).

24.115.2.2 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & *iLogParams*, const stdair::BasDBParams & *iDBParams*)

Constructor.

The `initSimfqtService()` method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

<i>const</i>	stdair::BasLogParams& Parameters for the output log stream.
<i>const</i>	stdair::BasDBParams& Parameters for the database access.

Definition at line 56 of file [SIMFQT_Service.cpp](#).

24.115.2.3 SIMFQT::SIMFQT_Service::SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

Moreover, as no reference on any output stream is given, it is assumed that the StdAir log service has already been initialised with the proper log output stream by some other methods in the calling chain (for instance, when the [SIMFQT_Service](#) is itself being initialised by another library service such as SIMCRS_Service).

Parameters

<i>stdair::STD-AIR_ServicePtr_T</i>	Reference on the STDAIR service.
-------------------------------------	----------------------------------

Definition at line 78 of file [SIMFQT_Service.cpp](#).

24.115.2.4 SIMFQT::SIMFQT_Service::~~SIMFQT_Service ()

Destructor.

Definition at line 94 of file [SIMFQT_Service.cpp](#).

24.115.3 Member Function Documentation

24.115.3.1 void SIMFQT::SIMFQT_Service::parseAndLoad (const FareFilePath & iFareFilename)

Parse the fare dump and load it into memory.

The CSV file, describing the fare rule for the simulator, is parsed and instantiated in memory accordingly.

Parameters

<i>const</i>	FareFilePath & Filename of the input fare file.
--------------	---

Definition at line 171 of file [SIMFQT_Service.cpp](#).

References [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

Referenced by [main\(\)](#).

24.115.3.2 void SIMFQT::SIMFQT_Service::buildSampleBom ()

Build a sample BOM tree, and attach it to the BomRoot instance.

As for now, two sample BOM trees can be built.

- One BOM tree is based on two actual inventories (one for BA, another for A-F). Each inventory contains one flight. One of those flights has two legs (and therefore three segments).
- The other BOM tree is fake, as a hook for RMOL to work.

Definition at line 185 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.115.3.3 stdair::BookingRequestStruct SIMFQT::SIMFQT_Service::buildBookingRequest (const bool *isForCRS* = false)

Build a BookingRequest structure (for test purposes).

Returns

stdair::BookingRequestStruct The created BookingRequest structure.

Definition at line 231 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.115.3.4 void SIMFQT::SIMFQT_Service::buildSampleTravelSolutions (stdair::TravelSolutionList_T & *ioTravelSolutionList*)

Build a sample list of travel solutions.

As of now (March 2011), that list is made of the following travel solutions:

- BA9
- LHR-SYD
- 2011-06-10
- Q
- WTP: 900
- Change fee: 20; Non refundable; Saturday night stay

Parameters

<i>TravelSolutionList_T</i> &	Sample list of travel solution structures. It should be given empty. It is altered with the returned sample.
-------------------------------	--

Definition at line 255 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.115.3.5 void SIMFQT::SIMFQT_Service::quotePrices (const stdair::BookingRequestStruct & iBookingRequest, stdair::TravelSolutionList_T & ioTravelSolutionList)

Calculate the prices for a given list of travel solutions.

A stdair::Fare_T attribute is calculated for every travel solution of the list.

Parameters

<i>stdair::BookingRequestStruct</i> &	Booking request.
<i>stdair::TravelSolutionList_T</i> &	List of travel solution.

Definition at line 391 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.115.3.6 std::string SIMFQT::SIMFQT_Service::csvDisplay () const

Recursively display (dump in the returned string) the objects of the BOM tree.

Returns

[std::string](#) Output string in which the BOM tree is logged/dumped.

Definition at line 276 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.115.3.7 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::TravelSolutionList_T & ioTravelSolutionList) const

Display (dump in the returned string) the full list of travel solution structures.

Returns

[std::string](#) Output string in which the list of travel solutions is logged/dumped.

Definition at line 303 of file [SIMFQT_Service.cpp](#).

24.115.3.8 **std::string** SIMFQT::SIMFQT_Service::csvDisplay (const stdair::AirportCode_T & *ioOrigin*, const stdair::AirportCode_T & *ioDestination*, const stdair::Date_T & *ioDepartureDate*) const

Recursively display (dump in the returned string) the fare-rules corresponding to the parameters given as input.

Parameters

<i>const</i>	stdair::AirportCode_T& Origin airport of the fare-rules to display
<i>const</i>	stdair::AirportCode_T& Destination airport of the fare- rules to display.
<i>const</i>	stdair::Date_T& Departure date of the fare-rules to display.

Returns

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 325 of file [SIMFQT_Service.cpp](#).

24.115.3.9 **std::string** SIMFQT::SIMFQT_Service::list () const

Display (dump in the returned string) the airport pairs and the corresponding departure dates of the fare rules stored in the BOM tree.

Returns

std::string Output string in which the airport pairs and departure dates are logged/-dumped.

Definition at line 348 of file [SIMFQT_Service.cpp](#).

24.115.3.10 **bool** SIMFQT::SIMFQT_Service::check (const stdair::AirportCode_T & *ioOrigin*, const stdair::AirportCode_T & *ioDestination*, const stdair::Date_T & *ioDepartureDate*) const

Check whether the given couple airportpair-date is a valid one.

Parameters

<i>const</i>	stdair::AirportCode_T& Origin airport of the fare rule to check.
<i>const</i>	stdair::AirportCode_T& Destination airport of the fare rule to check.
<i>const</i>	stdair::Date_T& Departure date of the fare rule to check.

Returns

bool Whether or not the given airportpair-date couple is a valid one.

Definition at line 369 of file [SIMFQT_Service.cpp](#).

The documentation for this class was generated from the following files:

- [simfqt/SIMFQT_Service.hpp](#)

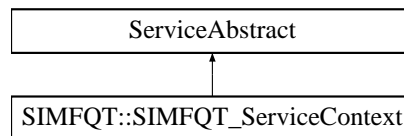
- [simfqt/service/SIMFQT_Service.cpp](#)

24.116 SIMFQT::SIMFQT_ServiceContext Class Reference

Class holding the context of the SimFQT services.

```
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Inheritance diagram for SIMFQT::SIMFQT_ServiceContext:



Friends

- class [SIMFQT_Service](#)
- class [FacSimfqtServiceContext](#)

24.116.1 Detailed Description

Class holding the context of the SimFQT services.

24.116.2 Friends And Related Function Documentation

24.116.2.1 friend class `SIMFQT_Service` [friend]

The [SIMFQT_Service](#) class should be the sole class to get access to ServiceContext content: general users do not want to bother with a context interface.

Definition at line 31 of file [SIMFQT_ServiceContext.hpp](#).

24.116.2.2 friend class `FacSimfqtServiceContext` [friend]

Definition at line 32 of file [SIMFQT_ServiceContext.hpp](#).

The documentation for this class was generated from the following files:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)
- [simfqt/service/SIMFQT_ServiceContext.cpp](#)

24.117 std::stack Class Reference

STL class.

24.118 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference149

24.117.1 Detailed Description

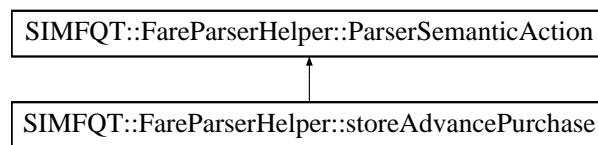
STL class.

The documentation for this class was generated from the following files:

24.118 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeAdvancePurchase:



Public Member Functions

- [storeAdvancePurchase](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.118.1 Detailed Description

Store the parsed advance purchase days.

24.118.2 Constructor & Destructor Documentation

24.118.2.1 SIMFQT::FareParserHelper::storeAdvancePurchase::storeAdvancePurchase ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 251 of file [FareParserHelper.cpp](#).

24.118.3 Member Function Documentation

24.118.3.1 void SIMFQT::FareParserHelper::storeAdvancePurchase::operator() (unsigned int
iAdvancePurchase, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type)
const

Actor Function (functor).

Definition at line 256 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setAdvancePurchase\(\)](#).

24.118.4 Member Data Documentation

24.118.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction:-
_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

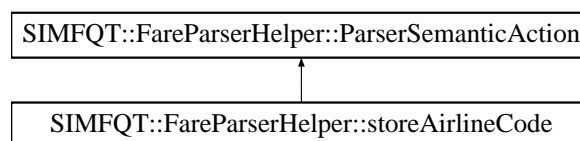
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.119 SIMFQT::FareParserHelper::storeAirlineCode Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeAirlineCode:



Public Member Functions

- [storeAirlineCode](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.119.1 Detailed Description

Store the parsed airline code.

24.119.2 Constructor & Destructor Documentation

24.119.2.1 SIMFQT::FareParserHelper::storeAirlineCode::storeAirlineCode ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 375 of file [FareParserHelper.cpp](#).

24.119.3 Member Function Documentation

24.119.3.1 void SIMFQT::FareParserHelper::storeAirlineCode::operator() ([std::vector](#)< char > *iChar*, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 380 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::addAirlineCode\(\)](#).

24.119.4 Member Data Documentation

24.119.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [\[inherited\]](#)

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRange](#)

[Time::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#)(), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#)(), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#)(), [operator\(\)](#)(), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#)(), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#)).

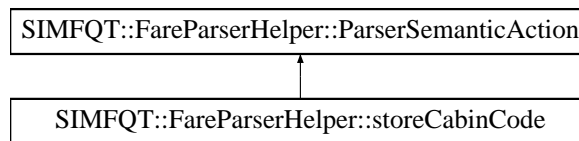
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.120 SIMFQT::FareParserHelper::storeCabinCode Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeCabinCode:



Public Member Functions

- [storeCabinCode](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.120.1 Detailed Description

Store the cabin code.

24.120.2 Constructor & Destructor Documentation

24.120.2.1 SIMFQT::FareParserHelper::storeCabinCode::storeCabinCode ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 209 of file [FareParserHelper.cpp](#).

24.120.3 Member Function Documentation

24.120.3.1 `void SIMFQT::FareParserHelper::storeCabinCode::operator() (char iChar, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const`

Actor Function (functor).

Definition at line 214 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setCabinCode\(\)](#).

24.120.4 Member Data Documentation

24.120.4.1 `FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule` [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

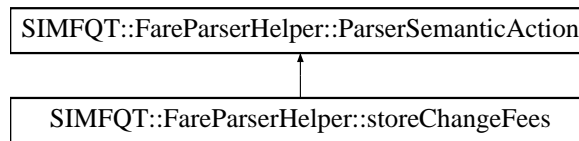
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.121 SIMFQT::FareParserHelper::storeChangeFees Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeChangeFees:



Public Member Functions

- [storeChangeFees](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.121.1 Detailed Description

Store the parsed change fees.

24.121.2 Constructor & Destructor Documentation

24.121.2.1 SIMFQT::FareParserHelper::storeChangeFees::storeChangeFees ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 292 of file [FareParserHelper.cpp](#).

24.121.3 Member Function Documentation

24.121.3.1 void SIMFQT::FareParserHelper::storeChangeFees::operator() (char *iChangefees*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 297 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setChangeFees\(\)](#).

24.121.4 Member Data Documentation

24.121.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

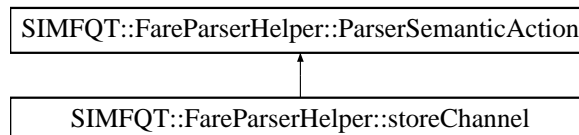
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.122 SIMFQT::FareParserHelper::storeChannel Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeChannel:



Public Member Functions

- [storeChannel](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.122.1 Detailed Description

Store the channel distribution.

24.122.2 Constructor & Destructor Documentation

24.122.2.1 SIMFQT::FareParserHelper::storeChannel::storeChannel (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 230 of file [FareParserHelper.cpp](#).

24.122.3 Member Function Documentation

24.122.3.1 void SIMFQT::FareParserHelper::storeChannel::operator() (std::vector< char > iChar, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 235 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setChannel\(\)](#).

24.122.4 Member Data Documentation

24.122.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

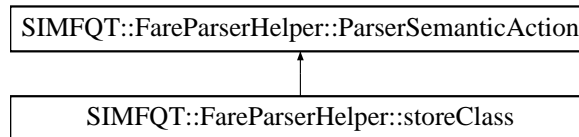
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.123 SIMFQT::FareParserHelper::storeClass Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeClass:



Public Member Functions

- [storeClass](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.123.1 Detailed Description

Store the parsed class code.

24.123.2 Constructor & Destructor Documentation

24.123.2.1 SIMFQT::FareParserHelper::storeClass::storeClass ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 393 of file [FareParserHelper.cpp](#).

24.123.3 Member Function Documentation

24.123.3.1 void SIMFQT::FareParserHelper::storeClass::operator() ([std::vector](#)< char > *iChar*, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 398 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::addClassCode\(\)](#).

24.123.4 Member Data Documentation

24.123.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

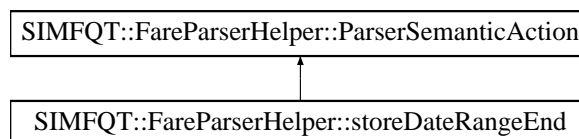
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.124 SIMFQT::FareParserHelper::storeDateRangeEnd Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeEnd:



Public Member Functions

- [storeDateRangeEnd](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.124.1 Detailed Description

Store the parsed end of the date range.

24.124.2 Constructor & Destructor Documentation

24.124.2.1 SIMFQT::FareParserHelper::storeDateRangeEnd::storeDateRangeEnd ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 128 of file [FareParserHelper.cpp](#).

24.124.3 Member Function Documentation

24.124.3.1 void SIMFQT::FareParserHelper::storeDateRangeEnd::operator() ([boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 133 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateDate\(\)](#), and [SIMFQT::FareRuleStruct::setDateRangeEnd\(\)](#).

24.124.4 Member Data Documentation

24.124.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay-](#)

24.125 SIMFQT::FareParserHelper::storeDateRangeStart Struct Reference 160

[::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

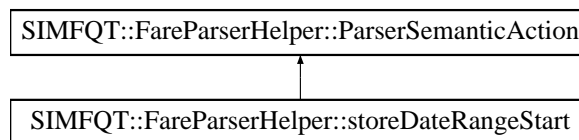
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.125 SIMFQT::FareParserHelper::storeDateRangeStart Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeStart:



Public Member Functions

- [storeDateRangeStart](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.125.1 Detailed Description

Store the parsed start of the date range.

24.125.2 Constructor & Destructor Documentation

24.125.2.1 SIMFQT::FareParserHelper::storeDateRangeStart::storeDateRangeStart ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 112 of file [FareParserHelper.cpp](#).

24.125.3 Member Function Documentation

24.125.3.1 void SIMFQT::FareParserHelper::storeDateRangeStart::operator()
 (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type ,
 boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 117 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateDate\(\)](#), and [SIMFQT::FareRuleStruct::setDateRangeStart\(\)](#).

24.125.4 Member Data Documentation

24.125.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::-
 _fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

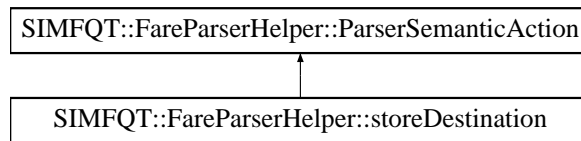
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.126 SIMFQT::FareParserHelper::storeDestination Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeDestination:



Public Member Functions

- [storeDestination](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.126.1 Detailed Description

Store the parsed destination.

24.126.2 Constructor & Destructor Documentation

24.126.2.1 SIMFQT::FareParserHelper::storeDestination::storeDestination ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 74 of file [FareParserHelper.cpp](#).

24.126.3 Member Function Documentation

24.126.3.1 void SIMFQT::FareParserHelper::storeDestination::operator() ([std::vector](#)< char > *iChar*, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 79 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setDestination\(\)](#).

24.126.4 Member Data Documentation

24.126.4.1 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

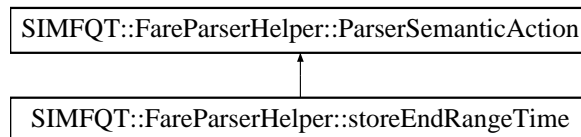
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.127 SIMFQT::FareParserHelper::storeEndRangeTime Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeEndRangeTime:



Public Member Functions

- [storeEndRangeTime](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.127.1 Detailed Description

Store the parsed end range time.

24.127.2 Constructor & Destructor Documentation

24.127.2.1 SIMFQT::FareParserHelper::storeEndRangeTime::storeEndRangeTime (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 167 of file [FareParserHelper.cpp](#).

24.127.3 Member Function Documentation

24.127.3.1 void SIMFQT::FareParserHelper::storeEndRangeTime::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 172 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), [SIMFQT::FareRuleStruct::setTimeRangeEnd\(\)](#), and [SIMFQT::FareRuleStruct::_itSeconds](#).

24.127.4 Member Data Documentation

24.127.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

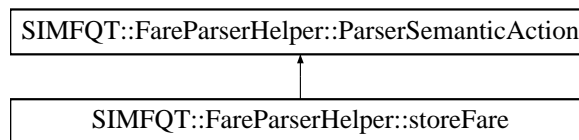
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.128 SIMFQT::FareParserHelper::storeFare Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeFare:



Public Member Functions

- [storeFare](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (double, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.128.1 Detailed Description

Store the parsed fare value.

24.128.2 Constructor & Destructor Documentation

24.128.2.1 SIMFQT::FareParserHelper::storeFare::storeFare ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 359 of file [FareParserHelper.cpp](#).

24.128.3 Member Function Documentation

24.128.3.1 void SIMFQT::FareParserHelper::storeFare::operator() (double *iFare*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 364 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setFare\(\)](#).

24.128.4 Member Data Documentation

24.128.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

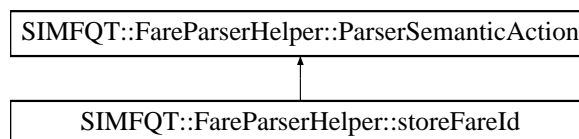
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.129 SIMFQT::FareParserHelper::storeFareId Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeFareId:



Public Member Functions

- [storeFareId](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.129.1 Detailed Description

Store the parsed fare Id.

24.129.2 Constructor & Destructor Documentation

24.129.2.1 SIMFQT::FareParserHelper::storeFareId::storeFareId ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 35 of file [FareParserHelper.cpp](#).

24.129.3 Member Function Documentation

24.129.3.1 void SIMFQT::FareParserHelper::storeFareId::operator() (unsigned int *iFareId*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 40 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::setFareID\(\)](#), [SIMFQT::FareRuleStruct::setAirlineCode\(\)](#), [SIMFQT::FareRuleStruct::clearAirlineCodeList\(\)](#), [SIMFQT::FareRuleStruct::setClassCode\(\)](#), [SIMFQT::FareRuleStruct::clearClassCodeList\(\)](#), and [SIMFQT::FareRuleStruct::_itSeconds](#).

24.129.4 Member Data Documentation

24.129.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturday](#)

[Stay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

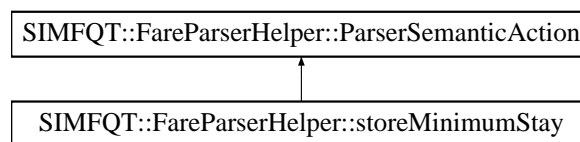
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.130 SIMFQT::FareParserHelper::storeMinimumStay Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeMinimumStay:



Public Member Functions

- [storeMinimumStay](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.130.1 Detailed Description

Store the parsed minimum stay.

24.130.2 Constructor & Destructor Documentation

24.130.2.1 SIMFQT::FareParserHelper::storeMinimumStay::storeMinimumStay ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line [343](#) of file [FareParserHelper.cpp](#).

24.130.3 Member Function Documentation

24.130.3.1 void SIMFQT::FareParserHelper::storeMinimumStay::operator() (unsigned int *iMinStay*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 348 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setMinimumStay\(\)](#).

24.130.4 Member Data Documentation

24.130.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

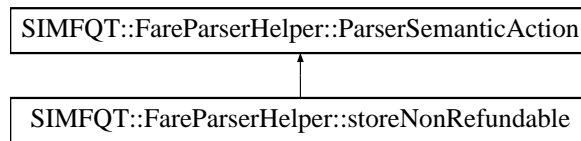
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.131 SIMFQT::FareParserHelper::storeNonRefundable Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeNonRefundable:



Public Member Functions

- [storeNonRefundable](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.131.1 Detailed Description

Store the parsed refundable option

24.131.2 Constructor & Destructor Documentation

24.131.2.1 SIMFQT::FareParserHelper::storeNonRefundable::storeNonRefundable ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line [318](#) of file [FareParserHelper.cpp](#).

24.131.3 Member Function Documentation

24.131.3.1 void SIMFQT::FareParserHelper::storeNonRefundable::operator() (char *iNonRefundable*, [boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line [323](#) of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setNonRefundable\(\)](#).

24.131.4 Member Data Documentation

24.131.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

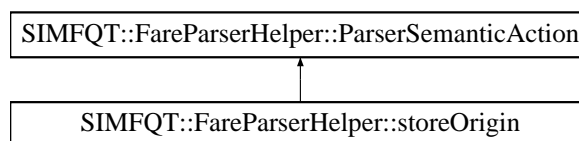
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.132 SIMFQT::FareParserHelper::storeOrigin Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeOrigin:



Public Member Functions

- [storeOrigin](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.132.1 Detailed Description

Store the parsed origin.

24.132.2 Constructor & Destructor Documentation

24.132.2.1 SIMFQT::FareParserHelper::storeOrigin::storeOrigin (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 58 of file [FareParserHelper.cpp](#).

24.132.3 Member Function Documentation

24.132.3.1 void SIMFQT::FareParserHelper::storeOrigin::operator() (std::vector< char > iChar, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 63 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setOrigin\(\)](#).

24.132.4 Member Data Documentation

24.132.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [operator\(\)](#), [-SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [-SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

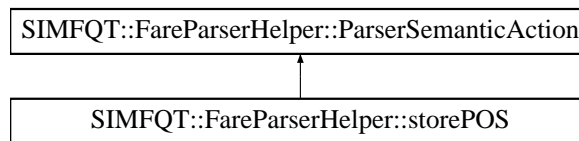
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.133 SIMFQT::FareParserHelper::storePOS Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storePOS:



Public Member Functions

- [storePOS](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.133.1 Detailed Description

Store the parsed customer point_of_sale.

24.133.2 Constructor & Destructor Documentation

24.133.2.1 SIMFQT::FareParserHelper::storePOS::storePOS ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 185 of file [FareParserHelper.cpp](#).

24.133.3 Member Function Documentation

24.133.3.1 void SIMFQT::FareParserHelper::storePOS::operator() ([std::vector](#)< char > *iChar*, [boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 190 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::getOrigin\(\)](#), [SIMFQT::FareRuleStruct::getDestination\(\)](#), and [SIMFQT::FareRuleStruct::setPOS\(\)](#).

24.133.4 Member Data Documentation

24.133.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

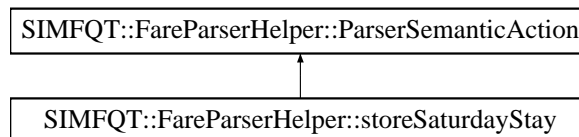
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.134 SIMFQT::FareParserHelper::storeSaturdayStay Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeSaturdayStay:



Public Member Functions

- [storeSaturdayStay \(FareRuleStruct &\)](#)

- void [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.134.1 Detailed Description

Store the parsed saturday night.

24.134.2 Constructor & Destructor Documentation

24.134.2.1 SIMFQT::FareParserHelper::storeSaturdayStay::storeSaturdayStay (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 267 of file [FareParserHelper.cpp](#).

24.134.3 Member Function Documentation

24.134.3.1 void SIMFQT::FareParserHelper::storeSaturdayStay::operator() (char *iSaturdayStay*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 272 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setSaturdayStay\(\)](#).

24.134.4 Member Data Documentation

24.134.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), S-

[IMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

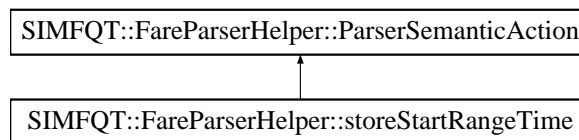
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.135 SIMFQT::FareParserHelper::storeStartRangeTime Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeStartRangeTime:



Public Member Functions

- [storeStartRangeTime](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.135.1 Detailed Description

Store the parsed start range time.

24.135.2 Constructor & Destructor Documentation

24.135.2.1 SIMFQT::FareParserHelper::storeStartRangeTime::storeStartRangeTime ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line [149](#) of file [FareParserHelper.cpp](#).

24.135.3 Member Function Documentation

24.135.3.1 void SIMFQT::FareParserHelper::storeStartRangeTime::operator()
 (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type ,
 boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 154 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), [SIMFQT::FareRuleStruct::setTimeRangeStart\(\)](#), and [SIMFQT::FareRuleStruct::_itSeconds](#).

24.135.4 Member Data Documentation

24.135.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::-
 _fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

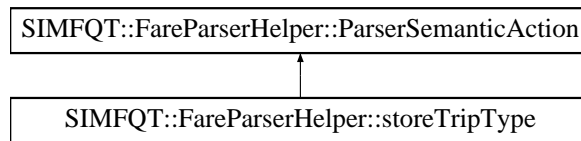
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.136 SIMFQT::FareParserHelper::storeTripType Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeTripType:



Public Member Functions

- [storeTripType](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) ([std::vector](#)< char >, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.136.1 Detailed Description

Store the parsed customer trip type.

24.136.2 Constructor & Destructor Documentation

24.136.2.1 SIMFQT::FareParserHelper::storeTripType::storeTripType ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 90 of file [FareParserHelper.cpp](#).

24.136.3 Member Function Documentation

24.136.3.1 void SIMFQT::FareParserHelper::storeTripType::operator() ([std::vector](#)< char > [iChar](#), [boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 95 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setTripType\(\)](#).

24.136.4 Member Data Documentation

24.136.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

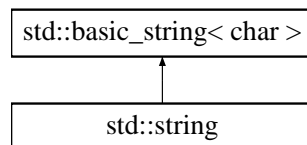
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.137 std::string Class Reference

STL class.

Inheritance diagram for std::string:



Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.137.1 Detailed Description

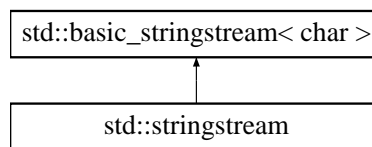
STL class.

The documentation for this class was generated from the following file:

24.138 `std::stringstream` Class Reference

STL class.

Inheritance diagram for `std::stringstream`:



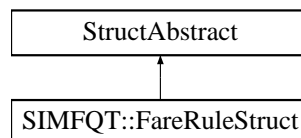
24.138.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.139 StructAbstract Class Reference

Inheritance diagram for StructAbstract:



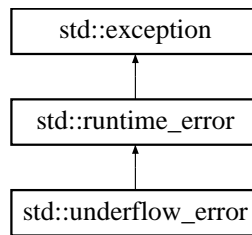
The documentation for this class was generated from the following file:

- `simfqt/bom/FareRuleStruct.hpp`

24.140 `std::underflow_error` Class Reference

STL class.

Inheritance diagram for `std::underflow_error`:



24.140.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

24.141 `std::valarray` Class Reference

STL class.

24.141.1 Detailed Description

STL class.

The documentation for this class was generated from the following files:

24.142 `std::vector` Class Reference

STL class.

Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.142.1 Detailed Description

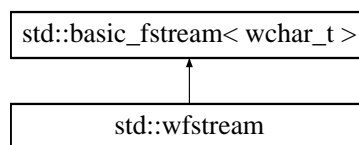
STL class.

The documentation for this class was generated from the following files:

24.143 std::wfstream Class Reference

STL class.

Inheritance diagram for std::wfstream:



24.143.1 Detailed Description

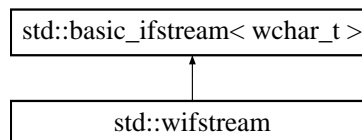
STL class.

The documentation for this class was generated from the following file:

24.144 std::wifstream Class Reference

STL class.

Inheritance diagram for std::wifstream:



24.144.1 Detailed Description

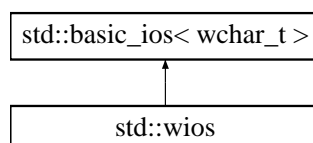
STL class.

The documentation for this class was generated from the following file:

24.145 std::wios Class Reference

STL class.

Inheritance diagram for std::wios:



24.145.1 Detailed Description

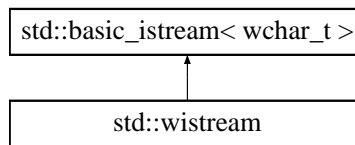
STL class.

The documentation for this class was generated from the following file:

24.146 std::wistream Class Reference

STL class.

Inheritance diagram for std::wistream:

**24.146.1 Detailed Description**

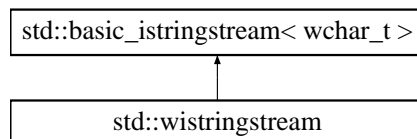
STL class.

The documentation for this class was generated from the following file:

24.147 std::wstringstream Class Reference

STL class.

Inheritance diagram for std::wstringstream:

**24.147.1 Detailed Description**

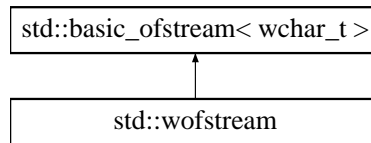
STL class.

The documentation for this class was generated from the following file:

24.148 std::wofstream Class Reference

STL class.

Inheritance diagram for std::wofstream:



24.148.1 Detailed Description

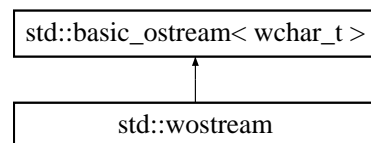
STL class.

The documentation for this class was generated from the following file:

24.149 std::wostream Class Reference

STL class.

Inheritance diagram for `std::wostream`:



24.149.1 Detailed Description

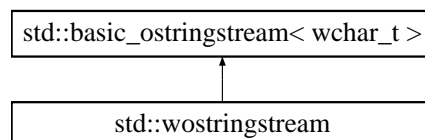
STL class.

The documentation for this class was generated from the following file:

24.150 std::wostringstream Class Reference

STL class.

Inheritance diagram for `std::wostringstream`:



24.150.1 Detailed Description

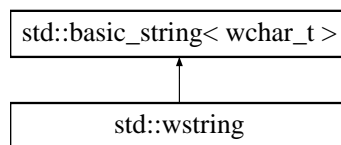
STL class.

The documentation for this class was generated from the following file:

24.151 `std::wstring` Class Reference

STL class.

Inheritance diagram for `std::wstring`:



Classes

- class [const_iterator](#)
STL iterator class.
- class [const_reverse_iterator](#)
STL iterator class.
- class [iterator](#)
STL iterator class.
- class [reverse_iterator](#)
STL iterator class.

24.151.1 Detailed Description

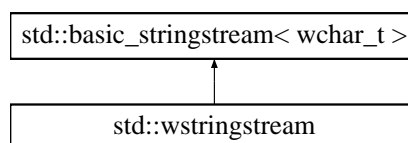
STL class.

The documentation for this class was generated from the following file:

24.152 `std::wstringstream` Class Reference

STL class.

Inheritance diagram for `std::wstringstream`:



24.152.1 Detailed Description

STL class.

The documentation for this class was generated from the following file:

25 File Documentation

25.1 [doc/local/authors.doc](#) File Reference

25.2 [doc/local/codingrules.doc](#) File Reference

25.3 [doc/local/copyright.doc](#) File Reference

25.4 [doc/local/documentation.doc](#) File Reference

25.5 [doc/local/features.doc](#) File Reference

25.6 [doc/local/help_wanted.doc](#) File Reference

25.7 [doc/local/howto_release.doc](#) File Reference

25.8 [doc/local/index.doc](#) File Reference

25.9 [doc/local/installation.doc](#) File Reference

25.10 [doc/local/linking.doc](#) File Reference

25.11 [doc/local/test.doc](#) File Reference

25.12 [doc/local/users_guide.doc](#) File Reference

25.13 [doc/local/verification.doc](#) File Reference

25.14 [doc/tutorial/tutorial.doc](#) File Reference

25.15 [simfqt/basic/BasConst.cpp](#) File Reference

```
#include <simfqt/basic/BasConst_General.hpp>      #include  
<simfqt/basic/BasConst_SIMFQT_Service.hpp>
```

Namespaces

- namespace [SIMFQT](#)

Variables

- const `std::string SIMFQT::DEFAULT_FARE_QUOTER_ID` = "IATA"

25.16 BasConst.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 #include <simfqt/basic/BasConst_General.hpp>
00005 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00006
00007 namespace SIMFQT {
00008
00009     const std::string DEFAULT_FARE_QUOTER_ID = "IATA";
00010
00011 }
00012 
```

25.17 simfqt/basic/BasConst_General.hpp File Reference

Namespaces

- namespace `SIMFQT`

25.18 BasConst_General.hpp

```

00001 #ifndef __SIMFQT_BAS_BASCONST_GENERAL_HPP
00002 #define __SIMFQT_BAS_BASCONST_GENERAL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007
00008 namespace SIMFQT {
00009
00010 }
00011 #endif // __SIMFQT_BAS_BASCONST_GENERAL_HPP

```

25.19 simfqt/basic/BasConst_SIMFQT_Service.hpp File Reference

```
#include <string>
```

Namespaces

- namespace `SIMFQT`

25.20 BasConst_SIMFQT_Service.hpp

```

00001 #ifndef __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////

```

```

00007 #include <string>
00008
00009 namespace SIMFQT {
00010
00012     extern const std::string DEFAULT_FARE_QUOTER_ID;
00013
00014 }
00015 #endif // __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP

```

25.21 simfqt/batches/simfqt_parseFareRules.cpp File Reference

```

#include <cassert> #include <iostream> #include <sstream> ×
#include <fstream>    #include <vector>    #include <list>
#include <string> #include <boost/date_time/posix_time/posix-
_time.hpp> #include <boost/date_time/gregorian/gregorian.-
hpp> #include <boost/tokenizer.hpp> #include <boost/program-
_options.hpp> #include <stdair/STDAIR_Service.hpp> #include
<stdair/bom/TravelSolutionStruct.hpp> #include <stdair/bom/-
BookingRequestStruct.hpp> #include <stdair/service/Logger.-
hpp> #include <simfqt/SIMFQT_Service.hpp> #include <simfqt/config/simfqt-paths.
hpp>

```

Typedefs

- typedef [std::vector< std::string >](#) [WordList_T](#)

Functions

- template<class T >
[std::ostream & operator<< \(std::ostream &os, const std::vector< T > &v\)](#)
- int [readConfiguration](#) (int argc, char *argv[], bool &iolsBuiltin, stdair::Filename_T &ioFareInputFilename, [std::string](#) &ioLogFilename)
- int [main](#) (int argc, char *argv[])

Variables

- const [std::string](#) [K_SIMFQT_DEFAULT_LOG_FILENAME](#) ("simfqt_parseFareRules.log")
- const [std::string](#) [K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME](#) (STDAIR_SAMPLE_DIR"fare01.csv")
- const bool [K_SIMFQT_DEFAULT_BUILT_IN_INPUT](#) = false
- const int [K_SIMFQT_EARLY_RETURN_STATUS](#) = 99

25.21.1 Typedef Documentation

25.21.1.1 typedef [std::vector<std::string>](#) [WordList_T](#)

Definition at line 24 of file [simfqt_parseFareRules.cpp](#).

25.21.2 Function Documentation

25.21.2.1 `template<class T> std::ostream& operator<< (std::ostream & os, const std::vector< T> & v)`

Definition at line 44 of file [simfqt_parseFareRules.cpp](#).

25.21.2.2 `int readConfiguration (int argc, char * argv[], bool & iolsBuiltin, stdair::Filename_T & ioFareInputFilename, std::string & ioLogFilename)`

Read and parse the command line options.

Definition at line 51 of file [simfqt_parseFareRules.cpp](#).

References [K_SIMFQT_DEFAULT_BUILT_IN_INPUT](#), [K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME](#), [K_SIMFQT_DEFAULT_LOG_FILENAME](#), [K_SIMFQT_EARLY_RETURN_STATUS](#), [PACKAGE_NAME](#), [PACKAGE_VERSION](#), and [PREFIXDIR](#).

Referenced by [main\(\)](#).

25.21.2.3 `int main (int argc, char * argv[])`

Definition at line 154 of file [simfqt_parseFareRules.cpp](#).

References [readConfiguration\(\)](#), [K_SIMFQT_EARLY_RETURN_STATUS](#), [SIMFQT::SIMFQT_Service::buildSampleTravelSolutions\(\)](#), [SIMFQT::SIMFQT_Service::buildBookingRequest\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleBom\(\)](#), [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#), [SIMFQT::SIMFQT_Service::csvDisplay\(\)](#), and [SIMFQT::SIMFQT_Service::quotePrices\(\)](#).

25.21.3 Variable Documentation

25.21.3.1 `const std::string K_SIMFQT_DEFAULT_LOG_FILENAME("simfqt_parseFareRules.log")`

Default name and location for the log file.

Referenced by [readConfiguration\(\)](#).

25.21.3.2 `const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME(STDAIR_SAMPLE_DIR"/fare01.csv")`

Default name and location for the (CSV) input file.

Referenced by [readConfiguration\(\)](#).

25.21.3.3 `const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false`

Default for the input type. It can be either built-in or provided by an input file. That latter must then be given with the -i option.

Definition at line 37 of file [simfqt_parseFareRules.cpp](#).

Referenced by [readConfiguration\(\)](#).

25.21.3.4 const int K_SIMFQT_EARLY_RETURN_STATUS = 99

Early return status (so that it can be differentiated from an error).

Definition at line 40 of file [simfqt_parseFareRules.cpp](#).

Referenced by [readConfiguration\(\)](#), and [main\(\)](#).

25.22 simfqt_parseFareRules.cpp

```

00001 // STL
00002 #include <cassert>
00003 #include <iostream>
00004 #include <sstream>
00005 #include <fstream>
00006 #include <vector>
00007 #include <list>
00008 #include <string>
00009 // Boost (Extended STL)
00010 #include <boost/date_time/posix_time/posix_time.hpp>
00011 #include <boost/date_time/gregorian/gregorian.hpp>
00012 #include <boost/tokenizer.hpp>
00013 #include <boost/program_options.hpp>
00014 // StdAir
00015 #include <stdair/STDAIR_Service.hpp>
00016 #include <stdair/bom/TravelSolutionStruct.hpp>
00017 #include <stdair/bom/BookingRequestStruct.hpp>
00018 #include <stdair/service/Logger.hpp>
00019 // Simfqt
00020 #include <simfqt/SIMFQT_Service.hpp>
00021 #include <simfqt/config/simfqt-paths.hpp>
00022
00023 // ////////// Type definitions //////////
00024 typedef std::vector<std::string> WordList_T;
00025
00026
00027 // ////////// Constants //////////
00029 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log");
00030
00032 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00033                                                         "/fare01.csv");
00034
00037 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00038
00040 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00041
00042 // ////////// Parsing of Options & Configuration //////////
00043 // A helper function to simplify the main part.
00044 template<class T> std::ostream& operator<< (std::ostream& os,
00045                                           const std::vector<T>& v) {
00046     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00047     return os;
00048 }
00049
00051 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00052                      stdair::Filename_T& ioFareInputFilename,
00053                      std::string& ioLogFilename) {
00054
00055     // Default for the built-in input
00056     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00057
00058     // Declare a group of options that will be allowed only on command line
00059     boost::program_options::options_description generic ("Generic options");
00060     generic.add_options()
00061         ("prefix", "print installation prefix")
00062         ("version,v", "print version string")
00063         ("help,h", "produce help message");
00064
00065     // Declare a group of options that will be allowed both on command
00066     // line and in config file

```

```

00067 boost::program_options::options_description config ("Configuration");
00068 config.add_options()
00069     ("builtin,b",
00070      "The sample BOM tree can be either built-in or parsed from an input file.
00071      That latter must then be given with the -f/--fare option")
00072     ("fare,f",
00073      boost::program_options::value< std::string >(&ioFareInputFilename)->
00074      default_value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
00075      "(CSV) input file for the fare rules")
00076     ("log,l",
00077      boost::program_options::value< std::string >(&ioLogFilename)->
00078      default_value(K_SIMFQT_DEFAULT_LOG_FILENAME),
00079      "Filename for the logs")
00080     ;
00081 // Hidden options, will be allowed both on command line and
00082 // in config file, but will not be shown to the user.
00083 boost::program_options::options_description hidden ("Hidden options");
00084 hidden.add_options()
00085     ("copyright",
00086      boost::program_options::value< std::vector<std::string> >(),
00087      "Show the copyright (license)");
00088 boost::program_options::options_description cmdline_options;
00089 cmdline_options.add(generic).add(config).add(hidden);
00090 boost::program_options::options_description config_file_options;
00091 config_file_options.add(config).add(hidden);
00092 boost::program_options::options_description visible ("Allowed options");
00093 visible.add(generic).add(config);
00094 boost::program_options::positional_options_description p;
00095 p.add ("copyright", -1);
00096 boost::program_options::variables_map vm;
00097 boost::program_options::store (boost::program_options::command_line_parser (argc, argv).
00098                               options (cmdline_options).positional(p).run(), vm);
00099 std::ifstream ifs ("simfqt.cfg");
00100 boost::program_options::store (parse_config_file (ifs, config_file_options),
00101                               vm);
00102 boost::program_options::notify (vm); if (vm.count ("help")) {
00103     std::cout << visible << std::endl;
00104     return K_SIMFQT_EARLY_RETURN_STATUS;
00105 }
00106 if (vm.count ("version")) {
00107     std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00108     return K_SIMFQT_EARLY_RETURN_STATUS;
00109 }
00110 if (vm.count ("prefix")) {
00111     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00112     return K_SIMFQT_EARLY_RETURN_STATUS;
00113 }
00114 if (vm.count ("builtin")) {
00115     ioIsBuiltin = true;
00116 }
00117 const std::string isBuiltinStr = (ioIsBuiltin == true)? "yes": "no";
00118 std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00119 if (ioIsBuiltin == false) {
00120     // The BOM tree should be built from parsing a fare (and O&D) file
00121     if (vm.count ("fare")) {
00122         ioFareInputFilename = vm["fare"].as< std::string >();
00123         std::cout << "Input fare filename is: " << ioFareInputFilename
00124                 << std::endl;
00125     } else {
00126         // The built-in option is not selected. However, no fare file

```

```

00138         // is specified
00139         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00140             << "options must be specified" << std::endl;
00141     }
00142 }
00143
00144 if (vm.count ("log")) {
00145     ioLogFilename = vm["log"].as< std::string >();
00146     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00147 }
00148
00149 return 0;
00150 }
00151
00152
00153 // ////////////////////////////////// M A I N //////////////////////////////////
00154 int main (int argc, char* argv[]) {
00155
00156     // State whether the BOM tree should be built-in or parsed from an input file
00157     bool isBuiltin;
00158
00159     // Fare input filename
00160     stdair::Filename_T lFareInputFilename;
00161
00162     // Output log File
00163     stdair::Filename_T lLogFilename;
00164
00165     // Call the command-line option parser
00166     const int lOptionParserStatus =
00167         readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename)
00168 ;
00169
00170 if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00171     return 0;
00172 }
00173
00174 // Set the log parameters
00175 std::ofstream logOutputFile;
00176 // Open and clean the log outputfile
00177 logOutputFile.open (lLogFilename.c_str());
00178 logOutputFile.clear();
00179
00180 // Initialise the Simfqt service object
00181 const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00182
00183 SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00184
00185 // DEBUG
00186 STDAIR_LOG_DEBUG ("Welcome to Simfqt");
00187
00188 // Build a default sample list of travel solutions
00189 stdair::TravelSolutionList_T lTravelSolutionList;
00190 simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00191
00192 // Build a default booking request
00193 stdair::BookingRequestStruct lBookingRequest =
00194     simfqtService.buildBookingRequest();
00195
00196 // Check wether or not a (CSV) input file should be read
00197 if (isBuiltin == true) {
00198     // Build the default sample BOM tree (filled with fares) for Simfqt
00199     simfqtService.buildSampleBom();
00200 } else {
00201     // Build the BOM tree from parsing a fare file
00202     SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
00203     simfqtService.parseAndLoad (lFareFilePath);
00204 }
00205
00206 // DEBUG: Display the travel solutions
00207 const std::string& lTSCSVDump =

```

```

00211     simfqtService.csvDisplay (lTravelSolutionList);
00212     STDAIR_LOG_DEBUG (lTSCSVDump);
00213
00214     // FareQuote the sample list of travel solutions
00215     simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00216
00217     // DEBUG: Display the whole BOM tree
00218     const std::string& lBOMCSVDump = simfqtService.csvDisplay();
00219     STDAIR_LOG_DEBUG ("BOM tree: " << lBOMCSVDump);
00220
00221     // DEBUG: Display the travel solutions
00222     const std::string& lTSCSVDumpEnd
00223     = simfqtService.csvDisplay (lTravelSolutionList);
00224     STDAIR_LOG_DEBUG (lTSCSVDumpEnd);
00225
00226     // Close the Log outputFile
00227     logOutputFile.close();
00228
00229     /*
00230     Note: as that program is not intended to be run on a server in
00231     production, it is better not to catch the exceptions. When it
00232     happens (that an exception is throwned), that way we get the
00233     call stack.
00234     */
00235
00236     return 0;
00237 }
00238

```

25.23 simfqt/bom/FareRuleStruct.cpp File Reference

```

#include <cassert> #include <sstream> #include <vector>
#include <stdair/basic/BasConst_General.hpp> #include
<stdair/service/Logger.hpp> #include <simfqt/bom/Fare-
RuleStruct.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.24 FareRuleStruct.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 #include <vector>
00008 // StdAir
00009 #include <stdair/basic/BasConst_General.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 // SIMFQT
00012 #include <simfqt/bom/FareRuleStruct.hpp>
00013
00014 namespace SIMFQT {
00015
00016     // //////////////////////////////////////
00017     FareRuleStruct::FareRuleStruct ()
00018     :_fareId(0),
00019     _origin(""),
00020     _destination(""),
00021     _dateRangeStart (stdair::DEFAULT_DATE),

```

```

00022     _dateRangeEnd(stdair::DEFAULT_DATE),
00023     _timeRangeStart(stdair::DEFAULT_EPSILON_DURATION),
00024     _timeRangeEnd(stdair::DEFAULT_EPSILON_DURATION),
00025     _cabinCode(""),
00026     _pos(""),
00027     _advancePurchase(0),
00028     _saturdayStay("T"),
00029     _changeFees("T"),
00030     _nonRefundable("T"),
00031     _minimumStay(0),
00032     _fare(0),
00033     _airlineCode(""),
00034     _classCode("") {
00035
00036 }
00037
00038 // //////////////////////////////////////
00039 stdair::Date_T FareRuleStruct::calculateDate() const {
00040     _itYear.check(); _itMonth.check(); _itDay.check();
00041     return stdair::Date_T(_itYear._value, _itMonth._value, _itDay._value);
00042 }
00043
00044 // //////////////////////////////////////
00045 stdair::Duration_T FareRuleStruct::calculateTime() const {
00046     _itHours.check(); _itMinutes.check(); _itSeconds.check();
00047     return boost::posix_time::hours(_itHours._value)
00048         + boost::posix_time::minutes(_itMinutes._value)
00049         + boost::posix_time::seconds(_itSeconds._value);
00050 }
00051
00052 // //////////////////////////////////////
00053 const std::string FareRuleStruct::describe() const {
00054     std::ostringstream oStr;
00055     oStr << "FareRule: " << _fareId << ", ";
00056
00057     oStr << _origin << "-" << _destination << " ("
00058         << _pos << "), " << _channel << ", [";
00059     oStr << _dateRangeStart << "/" << _dateRangeEnd << "]" << " - ["
00060         << boost::posix_time::to_simple_string(_timeRangeStart) << "/"
00061         << boost::posix_time::to_simple_string(_timeRangeEnd) << "], ";
00062
00063     oStr << _cabinCode << ", " << _fare << " EUR, ";
00064     oStr << _tripType << ", " << _saturdayStay << ", "
00065         << _changeFees << ", " << _nonRefundable << ", "
00066         << _advancePurchase << ", " << _minimumStay << ", ";
00067
00068     // Sanity check
00069     assert(_airlineCodeList.size() == _classCodeList.size());
00070
00071     // Browse the airline and class paths
00072     unsigned short idx = 0;
00073     stdair::ClassList_StringList_T::const_iterator itClass =
00074         _classCodeList.begin();
00075     for (stdair::AirlineCodeList_T::const_iterator itAirline =
00076         _airlineCodeList.begin();
00077         itAirline != _airlineCodeList.end(); ++itAirline, ++itClass, ++idx) {
00078         if (idx != 0) {
00079             oStr << " - ";
00080         }
00081         const stdair::AirlineCode_T lAirlineCode = *itAirline;
00082         const stdair::ClassCode_T lClassCode = *itClass;
00083         oStr << lAirlineCode << " / " << lClassCode;
00084     }
00085     return oStr.str();
00086 }
00087
00088 }
00089
00090 }
00091
00092

```

25.25 simfqt/bom/FareRuleStruct.hpp File Reference

```
#include <string> #include <vector> #include <stdair/stdair-
_demand_types.hpp> #include <stdair/stdair_inventory_
types.hpp> #include <stdair/basic/StructAbstract.hpp> ×
#include <stdair/basic/BasParserHelperTypes.hpp> #include
<simfqt/SIMFQT_Types.hpp>
```

Classes

- struct [SIMFQT::FareRuleStruct](#)

Namespaces

- namespace [SIMFQT](#)

25.26 FareRuleStruct.hpp

```
00001 #ifndef __SIMFQT_BOM_FARERULESTRUCT_HPP
00002 #define __SIMFQT_BOM_FARERULESTRUCT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 #include <vector>
00010 // StdAir
00011 #include <stdair/stdair_demand_types.hpp>
00012 #include <stdair/stdair_inventory_types.hpp>
00013 #include <stdair/basic/StructAbstract.hpp>
00014 #include <stdair/basic/BasParserHelperTypes.hpp>
00015 // SIMFQT
00016 #include <simfqt/SIMFQT_Types.hpp>
00017
00018 namespace SIMFQT {
00019
00021 struct FareRuleStruct : public stdair::StructAbstract {
00022 public:
00023
00025     FareRuleStruct ();
00026
00027 public:
00028     // ////////// Getters //////////
00030     SIMFQT::FareQuoteID_T getFareID () const {
00031         return _fareId;
00032     }
00033
00035     stdair::AirportCode_T getOrigin () const {
00036         return _origin;
00037     }
00038
00040     stdair::AirportCode_T getDestination () const {
00041         return _destination;
00042     }
00043
00045     stdair::TripType_T getTripType () const {
00046         return _tripType;
00047     }
00048
00050     stdair::Date_T getDateRangeStart () const {
00051         return _dateRangeStart;
```

```
00052     }
00053
00055     stdair::Date_T getDateRangeEnd () const {
00056         return _dateRangeEnd;
00057     }
00058
00060     stdair::Duration_T getTimeRangeStart () const {
00061         return _timeRangeStart;
00062     }
00063
00065     stdair::Duration_T getTimeRangeEnd () const {
00066         return _timeRangeEnd;
00067     }
00068
00070     stdair::CabinCode_T getCabinCode () const {
00071         return _cabinCode;
00072     }
00073
00075     const stdair::CityCode_T getPOS () const {
00076         return _pos;
00077     }
00078
00080     stdair::ChannelLabel_T getChannel () const {
00081         return _channel;
00082     }
00083
00085     stdair::DayDuration_T getAdvancePurchase () const {
00086         return _advancePurchase;
00087     }
00088
00090     stdair::SaturdayStay_T getSaturdayStay () const {
00091         return _saturdayStay;
00092     }
00093
00095     stdair::ChangeFees_T getChangeFees () const {
00096         return _changeFees;
00097     }
00098
00100     stdair::NonRefundable_T getNonRefundable () const {
00101         return _nonRefundable;
00102     }
00103
00105     stdair::DayDuration_T getMinimumStay () const {
00106         return _minimumStay;
00107     }
00108
00110     stdair::PriceValue_T getFare () const {
00111         return _fare;
00112     }
00113
00115     stdair::AirlineCode_T getAirlineCode () const {
00116         return _airlineCode;
00117     }
00118
00120     stdair::ClassCode_T getClassCode () const {
00121         return _classCode;
00122     }
00123
00125     const unsigned int getAirlineListSize () const {
00126         return _airlineCodeList.size();
00127     }
00128
00130     const unsigned int getClassCodeListSize () const {
00131         return _classCodeList.size();
00132     }
00133
00135     stdair::AirlineCodeList_T getAirlineList () const {
00136         return _airlineCodeList;
00137     }
00138
00140     stdair::ClassList_StringList_T getClassCodeList () const {
00141         return _classCodeList;
00142     }
00143
```

```
00144 public:
00145     // ////////// Display support methods //////////
00147     stdair::Date_T calculateDate() const;
00148
00150     stdair::Duration_T calculateTime() const;
00151
00153     const std::string describe() const;
00154
00155 public:
00156     // ////////// Setters //////////
00158     void setFareID (const SIMFQT::FareQuoteID_T& iFareQuoteID) {
00159         _fareId = iFareQuoteID;
00160     }
00161
00163     void setOrigin (const stdair::AirportCode_T& iOrigin) {
00164         _origin = iOrigin;
00165     }
00166
00168     void setDestination (const stdair::AirportCode_T& iDestination) {
00169         _destination = iDestination;
00170     }
00171
00173     void setTripType (const stdair::TripType_T& iTripType) {
00174         _tripType = iTripType;
00175     }
00176
00178     void setDateRangeStart (const stdair::Date_T& iDateRangeStart) {
00179         _dateRangeStart = iDateRangeStart;
00180     }
00181
00183     void setDateRangeEnd (const stdair::Date_T& iDateRangeEnd) {
00184         _dateRangeEnd = iDateRangeEnd;
00185     }
00186
00188     void setTimeRangeStart (const stdair::Duration_T& iTimeRangeStart) {
00189         _timeRangeStart = iTimeRangeStart;
00190     }
00191
00193     void setTimeRangeEnd (const stdair::Duration_T& iTimeRangeEnd) {
00194         _timeRangeEnd = iTimeRangeEnd;
00195     }
00196
00198     void setCabinCode (const stdair::CabinCode_T& iCabinCode) {
00199         _cabinCode = iCabinCode;
00200     }
00201
00203     void setPOS (const stdair::CityCode_T& iPOS) {
00204         _pos = iPOS;
00205     }
00206
00208     void setChannel (const stdair::ChannelLabel_T& iChannel) {
00209         _channel = iChannel;
00210     }
00211
00213     void setAdvancePurchase (const stdair::DayDuration_T& iAdvancePurchase) {
00214         _advancePurchase = iAdvancePurchase;
00215     }
00216
00218     void setSaturdayStay (const stdair::SaturdayStay_T& iSaturdayStay) {
00219         _saturdayStay = iSaturdayStay;
00220     }
00221
00223     void setChangeFees (const stdair::ChangeFees_T& iChangeFees) {
00224         _changeFees = iChangeFees;
00225     }
00226
00228     void setNonRefundable (const stdair::NonRefundable_T& iNonRefundable) {
00229         _nonRefundable = iNonRefundable;
00230     }
00231
00233     void setMinimumStay (const stdair::DayDuration_T& iMinimumStay) {
00234         _minimumStay = iMinimumStay;
00235     }
00236
```



```

00238     void setFare (const stdair::PriceValue_T& iFare) {
00239         _fare = iFare;
00240     }
00241
00243     void setAirlineCode (const stdair::AirlineCode_T& iAirlineCode) {
00244         _airlineCode = iAirlineCode;
00245     }
00246
00248     void setClassCode (const stdair::ClassCode_T& iClassCode) {
00249         _classCode = iClassCode;
00250     }
00251
00253     void clearAirlineCodeList () {
00254         _airlineCodeList.clear();
00255     }
00256
00258     void clearClassCodeList () {
00259         _classCodeList.clear();
00260     }
00261
00263     void addAirlineCode (const stdair::AirlineCode_T& iAirlineCode) {
00264         _airlineCodeList.push_back (iAirlineCode);
00265     }
00266
00268     void addClassCode (const stdair::ClassCode_T& iClassCode) {
00269         _classCodeList.push_back (iClassCode);
00270     }
00271
00272 public:
00273     // ////////////////////////////////// Attributes //////////////////////////////////
00275     stdair::year_t _itYear;
00276     stdair::month_t _itMonth;
00277     stdair::day_t _itDay;
00278
00280     stdair::hour_t _itHours;
00281     stdair::minute_t _itMinutes;
00282     stdair::second_t _itSeconds;
00283
00284 private:
00285     // ////////////////////////////////// Attributes //////////////////////////////////
00287     SIMFQT::FareQuoteID_T _fareId;
00288
00290     stdair::AirportCode_T _origin;
00291
00293     stdair::AirportCode_T _destination;
00294
00296     stdair::TripType_T _tripType;
00297
00299     stdair::Date_T _dateRangeStart;
00300
00302     stdair::Date_T _dateRangeEnd;
00303
00305     stdair::Duration_T _timeRangeStart;
00306
00308     stdair::Duration_T _timeRangeEnd;
00309
00311     stdair::CabinCode_T _cabinCode;
00312
00314     stdair::CityCode_T _pos;
00315
00317     stdair::ChannelLabel_T _channel;
00318
00320     stdair::DayDuration_T _advancePurchase;
00321
00323     stdair::SaturdayStay_T _saturdayStay;
00324
00326     stdair::ChangeFees_T _changeFees;
00327
00329     stdair::NonRefundable_T _nonRefundable;
00330
00332     stdair::DayDuration_T _minimumStay;
00333
00335     stdair::PriceValue_T _fare;
00336

```

```

00338     stdair::AirlineCode_T _airlineCode;
00339
00341     stdair::ClassCode_T _classCode;
00342
00345     stdair::AirlineCodeList_T _airlineCodeList;
00346
00349     stdair::ClassList_StringList_T _classCodeList;
00350
00351 };
00352
00353 }
00354 #endif // __SIMFQT_BOM_FARERULESTRUCT_HPP

```

25.27 simfqt/command/FareParser.cpp File Reference

```

#include <cassert> #include <string> #include <stdair/basic/-
BasFileMgr.hpp> #include <stdair/service/Logger.hpp> ×
#include <simfqt/command/FareParserHelper.hpp> #include
<simfqt/command/FareParser.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.28 FareParser.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <string>
00007 // StdAir
00008 #include <stdair/basic/BasFileMgr.hpp>
00009 #include <stdair/service/Logger.hpp>
00010 // AirSched
00011 #include <simfqt/command/FareParserHelper.hpp>
00012 #include <simfqt/command/FareParser.hpp>
00013
00014 namespace SIMFQT {
00015
00016 // //////////////////////////////////////
00017 void FareParser::fareRuleGeneration (const FareFilePath& iFareFilename,
00018                                     stdair::BomRoot& ioBomRoot) {
00019
00020     const stdair::Filename_T lFilename = iFareFilename.name();
00021
00022     // Check that the file path given as input corresponds to an actual file
00023     const bool doesExistAndIsReadable =
00024         stdair::BasFileMgr::doesExistAndIsReadable (lFilename);
00025     if (doesExistAndIsReadable == false) {
00026         STDAIR_LOG_ERROR ("The fare input file, '" << lFilename
00027                         << "', can not be retrieved on the file-system");
00028         throw FareInputFileNotFoundException ("The fare input file '" + lFilename
00029                                             + "' does not exist or can not "
00030                                             "be read");
00031     }
00032
00033     // Initialise the fare file parser.
00034     FareRuleFileParser lFareRuleFileParser (ioBomRoot, lFilename);
00035
00036     // Parse the CSV-formatted fare input file and generate the
00037     // corresponding fare rules.

```

```

00038     lFareRuleFileParser.generateFareRules ();
00039
00040 }
00041
00042 }
```

25.29 simfqt/command/FareParser.hpp File Reference

```

#include <string>    #include <stdair/stdair_basic_types.-
hpp> #include <stdair/command/CmdAbstract.hpp> #include
<simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::FareParser](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.30 FareParser.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREPARSER_HPP
00002 #define __SIMFQT_CMD_FAREPARSER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/command/CmdAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00015 // Forward declarations.
00016 namespace stdair {
00017     class BomRoot;
00018 }
00019
00020 namespace SIMFQT {
00021
00022     class FareParser : public stdair::CmdAbstract {
00023     public:
00030         static void fareRuleGeneration (const FareFilePath&, stdair::BomRoot&);
00031     };
00032 }
00033 #endif // __SIMFQT_CMD_FAREPARSER_HPP
```

25.31 simfqt/command/FareParserHelper.cpp File Reference

```

#include <cassert> #include <vector> #include <fstream>
#include <stdair/basic/BasFileMgr.hpp> #include <stdair/bom/-
```

```
BomRoot.hpp> #include <stdair/service/Logger.hpp> #include
<stdair/basic/BasParserTypes.hpp> #include <simfqt/command/-
FareParserHelper.hpp> #include <simfqt/command/FareRule-
Generator.hpp>
```

Classes

- struct [SIMFQT::FareParserHelper::FareRuleParser](#)

Namespaces

- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

Variables

- stdair::int1_p_t [SIMFQT::FareParserHelper::int1_p](#)
- stdair::uint2_p_t [SIMFQT::FareParserHelper::uint2_p](#)
- stdair::uint4_p_t [SIMFQT::FareParserHelper::uint4_p](#)
- stdair::uint1_4_p_t [SIMFQT::FareParserHelper::uint1_4_p](#)
- stdair::hour_p_t [SIMFQT::FareParserHelper::hour_p](#)
- stdair::minute_p_t [SIMFQT::FareParserHelper::minute_p](#)
- stdair::second_p_t [SIMFQT::FareParserHelper::second_p](#)
- stdair::year_p_t [SIMFQT::FareParserHelper::year_p](#)
- stdair::month_p_t [SIMFQT::FareParserHelper::month_p](#)
- stdair::day_p_t [SIMFQT::FareParserHelper::day_p](#)

25.32 FareParserHelper.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <vector>
00007 #include <fstream>
00008 // StdAir
00009 #include <stdair/basic/BasFileMgr.hpp>
00010 #include <stdair/bom/BomRoot.hpp>
00011 #include <stdair/service/Logger.hpp>
00012 // #define BOOST_SPIRIT_DEBUG
00013 #include <stdair/basic/BasParserTypes.hpp>
00014 // SIMFQT
00015 #include <simfqt/command/FareParserHelper.hpp>
00016 #include <simfqt/command/FareRuleGenerator.hpp>
00017
00018
00019
00020 namespace SIMFQT {
00021
00022     namespace FareParserHelper {
00023
00024         // //////////////////////////////////////
00025         // Semantic actions
00026         // //////////////////////////////////////
```

```

00027
00028 ParserSemanticAction::
00029 ParserSemanticAction (FareRuleStruct& ioFareRule)
00030 : _fareRule (ioFareRule) {
00031 }
00032
00033 // ////////////////////////////////////////
00034 storeFareId::
00035 storeFareId (FareRuleStruct& ioFareRule)
00036 : ParserSemanticAction (ioFareRule) {
00037 }
00038
00039 // ////////////////////////////////////////
00040 void storeFareId::operator() (unsigned int iFareId,
00041                             boost::spirit::qi::unused_type,
00042                             boost::spirit::qi::unused_type) const {
00043     _fareRule.setFareID (iFareId);
00044
00045     // DEBUG
00046     //STDAIR_LOG_DEBUG ( "Fare Id: " << _fareRule.getFareID ());
00047     const stdair::AirlineCode_T lEmptyAirlineCode ("");
00048     _fareRule.setAirlineCode (lEmptyAirlineCode);
00049     _fareRule.clearAirlineCodeList ();
00050     const stdair::ClassCode_T lEmptyClassCode ("");
00051     _fareRule.setClassCode (lEmptyClassCode);
00052     _fareRule.clearClassCodeList ();
00053     _fareRule._itSeconds = 0;
00054 }
00055
00056 // ////////////////////////////////////////
00057 storeOrigin ::
00058 storeOrigin (FareRuleStruct& ioFareRule)
00059 : ParserSemanticAction (ioFareRule) {
00060 }
00061
00062 // ////////////////////////////////////////
00063 void storeOrigin::operator() (std::vector<char> iChar,
00064                             boost::spirit::qi::unused_type,
00065                             boost::spirit::qi::unused_type) const {
00066     const stdair::AirportCode_T lOrigin (iChar.begin(), iChar.end());
00067     _fareRule.setOrigin (lOrigin);
00068     // DEBUG
00069     //STDAIR_LOG_DEBUG ( "Origin: " << _fareRule.getOrigin ());
00070 }
00071
00072 // ////////////////////////////////////////
00073 storeDestination ::
00074 storeDestination (FareRuleStruct& ioFareRule)
00075 : ParserSemanticAction (ioFareRule) {
00076 }
00077
00078 // ////////////////////////////////////////
00079 void storeDestination::operator() (std::vector<char> iChar,
00080                                 boost::spirit::qi::unused_type,
00081                                 boost::spirit::qi::unused_type) const {
00082     const stdair::AirportCode_T lDestination (iChar.begin(), iChar.end());
00083     _fareRule.setDestination (lDestination);
00084     // DEBUG
00085     //STDAIR_LOG_DEBUG ( "Destination: " << _fareRule.getDestination ());
00086 }
00087
00088 // ////////////////////////////////////////
00089 storeTripType ::
00090 storeTripType (FareRuleStruct& ioFareRule)
00091 : ParserSemanticAction (ioFareRule) {
00092 }
00093
00094 // ////////////////////////////////////////
00095 void storeTripType::operator() (std::vector<char> iChar,
00096                                 boost::spirit::qi::unused_type,
00097                                 boost::spirit::qi::unused_type) const {
00098     const stdair::TripType_T lTripType (iChar.begin(), iChar.end());
00099     if (lTripType == "OW" || lTripType == "RT") {
00100         _fareRule.setTripType (lTripType);

```

```

00101     } else {
00102         // ERROR
00103         STDAIR_LOG_ERROR ("Invalid trip type " << lTripType);
00104     }
00105     // DEBUG
00106     //STDAIR_LOG_DEBUG ("TripType: " << _fareRule.getTripType ());
00107 }
00108
00109
00110 // //////////////////////////////////////
00111 storeDateRangeStart::
00112 storeDateRangeStart (FareRuleStruct& ioFareRule)
00113     : ParserSemanticAction (ioFareRule) {
00114 }
00115
00116 // //////////////////////////////////////
00117 void storeDateRangeStart::operator() (boost::spirit::qi::unused_type,
00118                                     boost::spirit::qi::unused_type,
00119                                     boost::spirit::qi::unused_type) const
00120 {
00121     const stdair::Date_T& lDateStart = _fareRule.calculateDate ();
00122     _fareRule.setDateRangeStart (lDateStart);
00123     // DEBUG
00124     //STDAIR_LOG_DEBUG ("Date Range Start: " << _fareRule.getDateRangeStart
00125     ());
00126 }
00127
00128 // //////////////////////////////////////
00129 storeDateRangeEnd::
00130 storeDateRangeEnd(FareRuleStruct& ioFareRule)
00131     : ParserSemanticAction (ioFareRule) {
00132 }
00133
00134 // //////////////////////////////////////
00135 void storeDateRangeEnd::operator() (boost::spirit::qi::unused_type,
00136                                     boost::spirit::qi::unused_type,
00137                                     boost::spirit::qi::unused_type) const {
00138     const stdair::Date_T& lDateEnd = _fareRule.calculateDate ();
00139     // As a Boost date period (DatePeriod_T) defines the last day of
00140     // the period to be end-date - one day, we have to add one day to that
00141     // end date before.
00142     const stdair::DateOffset_T oneDay (1);
00143     const stdair::Date_T lBoostDateEnd = lDateEnd + oneDay;
00144     _fareRule.setDateRangeEnd (lBoostDateEnd);
00145     // DEBUG
00146     //STDAIR_LOG_DEBUG ("Date Range End: " << _fareRule.getDateRangeEnd ());
00147 }
00148
00149 // //////////////////////////////////////
00150 storeStartRangeTime::
00151 storeStartRangeTime (FareRuleStruct& ioFareRule)
00152     : ParserSemanticAction (ioFareRule) {
00153 }
00154
00155 // //////////////////////////////////////
00156 void storeStartRangeTime::operator() (boost::spirit::qi::unused_type,
00157                                     boost::spirit::qi::unused_type,
00158                                     boost::spirit::qi::unused_type) const
00159 {
00160     const stdair::Duration_T& lTimeStart = _fareRule.calculateTime ();
00161     _fareRule.setTimeRangeStart (lTimeStart);
00162     // DEBUG
00163     //STDAIR_LOG_DEBUG ("Time Range Start: " << _fareRule.getTimeRangeStart
00164     ());
00165     // Reset the number of seconds
00166     _fareRule._itSeconds = 0;
00167 }
00168
00169 // //////////////////////////////////////
00170 storeEndRangeTime::
00171 storeEndRangeTime (FareRuleStruct& ioFareRule)
00172     : ParserSemanticAction (ioFareRule) {
00173 }
00174

```

```

00171 // //////////////////////////////////////
00172 void storeEndRangeTime::operator() (boost::spirit::qi::unused_type,
00173                                     boost::spirit::qi::unused_type,
00174                                     boost::spirit::qi::unused_type) const {
00175     const stdair::Duration_T& lTimeEnd = _fareRule.calculateTime ();
00176     _fareRule.setTimeRangeEnd (lTimeEnd);
00177     // DEBUG
00178     //STDAIR_LOG_DEBUG ("Time Range End: " << _fareRule.getTimeRangeEnd ());
00179     // Reset the number of seconds
00180     _fareRule._itSeconds = 0;
00181 }
00182 // //////////////////////////////////////
00183 storePOS ::
00184 storePOS (FareRuleStruct& ioFareRule)
00185     : ParserSemanticAction (ioFareRule) {
00186 }
00187 // //////////////////////////////////////
00188 void storePOS::operator() (std::vector<char> iChar,
00189                             boost::spirit::qi::unused_type,
00190                             boost::spirit::qi::unused_type) const {
00191     const stdair::CityCode_T lPOS (iChar.begin(), iChar.end());
00192     if (lPOS == _fareRule.getOrigin() || lPOS == _fareRule.getDestination())
00193     {
00194         _fareRule.setPOS (lPOS);
00195     } else if (lPOS == "ROW") {
00196         const stdair::CityCode_T lPOSROW ("ROW");
00197         _fareRule.setPOS (lPOSROW);
00198     } else {
00199         // ERROR
00200         STDAIR_LOG_ERROR ("Invalid point of sale " << lPOS);
00201     }
00202     // DEBUG
00203     //STDAIR_LOG_DEBUG ("POS: " << _fareRule.getPOS ());
00204 }
00205 // //////////////////////////////////////
00206 storeCabinCode ::
00207 storeCabinCode (FareRuleStruct& ioFareRule)
00208     : ParserSemanticAction (ioFareRule) {
00209 }
00210 // //////////////////////////////////////
00211 void storeCabinCode::operator() (char iChar,
00212                                 boost::spirit::qi::unused_type,
00213                                 boost::spirit::qi::unused_type) const {
00214     std::ostringstream ostr;
00215     ostr << iChar;
00216     const std::string cabinCodeStr = ostr.str();
00217     const stdair::CabinCode_T& lCabinCode (cabinCodeStr);
00218     _fareRule.setCabinCode (lCabinCode);
00219     // DEBUG
00220     //STDAIR_LOG_DEBUG ("Cabin Code: " << _fareRule.getCabinCode ());
00221 }
00222 // //////////////////////////////////////
00223 storeChannel ::
00224 storeChannel (FareRuleStruct& ioFareRule)
00225     : ParserSemanticAction (ioFareRule) {
00226 }
00227 // //////////////////////////////////////
00228 void storeChannel::operator() (std::vector<char> iChar,
00229                                 boost::spirit::qi::unused_type,
00230                                 boost::spirit::qi::unused_type) const {
00231     const stdair::ChannelLabel_T lChannel (iChar.begin(), iChar.end());
00232     if (lChannel != "IN" && lChannel != "IF"
00233         && lChannel != "DN" && lChannel != "DF") {
00234         // ERROR
00235         STDAIR_LOG_ERROR ("Invalid channel " << lChannel);
00236     }
00237 }

```

```

00243     }
00244     _fareRule.setChannel (lChannel);
00245     // DEBUG
00246     //STDAIR_LOG_DEBUG ("Channel: " << _fareRule.getChannel ());
00247 }
00248
00249 // //////////////////////////////////////
00250 storeAdvancePurchase ::
00251 storeAdvancePurchase (FareRuleStruct& ioFareRule)
00252 : ParserSemanticAction (ioFareRule) {
00253 }
00254
00255 // //////////////////////////////////////
00256 void storeAdvancePurchase::operator() (unsigned int iAdvancePurchase,
00257                                       boost::spirit::qi::unused_type,
00258                                       boost::spirit::qi::unused_type)
00259 const {
00260     const stdair::DayDuration_T& lAdvancePurchase = iAdvancePurchase;
00261     _fareRule.setAdvancePurchase (lAdvancePurchase);
00262     // DEBUG
00263     //STDAIR_LOG_DEBUG ( "Advance Purchase: " << _fareRule.getAdvancePurchase
00264     ());
00265 }
00266 // //////////////////////////////////////
00267 storeSaturdayStay ::
00268 storeSaturdayStay (FareRuleStruct& ioFareRule)
00269 : ParserSemanticAction (ioFareRule) {
00270 }
00271 // //////////////////////////////////////
00272 void storeSaturdayStay::operator() (char iSaturdayStay,
00273                                    boost::spirit::qi::unused_type,
00274                                    boost::spirit::qi::unused_type) const {
00275     bool lBool = false;
00276     if (iSaturdayStay == 'T') {
00277         lBool = true;
00278     } else {
00279         if (iSaturdayStay != 'F') {
00280             // DEBUG
00281             STDAIR_LOG_DEBUG ("Invalid saturdayStay char " << iSaturdayStay);
00282         }
00283     }
00284     const stdair::SaturdayStay_T lSaturdayStay (lBool);
00285     _fareRule.setSaturdayStay (lSaturdayStay);
00286     // DEBUG
00287     //STDAIR_LOG_DEBUG ("Saturday Stay: " << _fareRule.getSaturdayStay ());
00288 }
00289 // //////////////////////////////////////
00290 storeChangeFees ::
00291 storeChangeFees (FareRuleStruct& ioFareRule)
00292 : ParserSemanticAction (ioFareRule) {
00293 }
00294
00295 // //////////////////////////////////////
00296 void storeChangeFees::operator() (char iChangefees,
00297                                   boost::spirit::qi::unused_type,
00298                                   boost::spirit::qi::unused_type) const {
00299     bool lBool = false;
00300     if (iChangefees == 'T') {
00301         lBool = true;
00302     } else {
00303         if (iChangefees != 'F') {
00304             // DEBUG
00305             STDAIR_LOG_DEBUG ("Invalid change fees char " << iChangefees);
00306         }
00307     }
00308     const stdair::ChangeFees_T lChangefees (lBool);
00309     _fareRule.setChangeFees (lChangefees);
00310     // DEBUG
00311     //STDAIR_LOG_DEBUG ("Change fees: " << _fareRule.getChangeFees ());
00312 }
00313
00314 }

```



```

00315
00316 // //////////////////////////////////////
00317 storeNonRefundable ::
00318 storeNonRefundable (FareRuleStruct& ioFareRule)
00319 : ParserSemanticAction (ioFareRule) {
00320 }
00321
00322 // //////////////////////////////////////
00323 void storeNonRefundable::operator() (char iNonRefundable,
00324                                     boost::spirit::qi::unused_type,
00325                                     boost::spirit::qi::unused_type) const
00326 {
00327     bool lBool = false;
00328     if (iNonRefundable == 'T') {
00329         lBool = true;
00330     } else {
00331         if (iNonRefundable != 'F') {
00332             // DEBUG
00333             STDAIR_LOG_DEBUG ("Invalid non refundable char " << iNonRefundable);
00334         }
00335         const stdair::NonRefundable_T lNonRefundable (lBool);
00336         _fareRule.setNonRefundable (lNonRefundable);
00337         // DEBUG
00338         //STDAIR_LOG_DEBUG ("Non refundable: " << _fareRule.getNonRefundable
00339     );
00340 }
00341
00342 // //////////////////////////////////////
00343 storeMinimumStay ::
00344 storeMinimumStay (FareRuleStruct& ioFareRule)
00345 : ParserSemanticAction (ioFareRule) {
00346 }
00347
00348 // //////////////////////////////////////
00349 void storeMinimumStay::operator() (unsigned int iMinStay,
00350                                   boost::spirit::qi::unused_type,
00351                                   boost::spirit::qi::unused_type) const {
00352     const stdair::DayDuration_T lMinStay = iMinStay;
00353     _fareRule.setMinimumStay (lMinStay);
00354     // DEBUG
00355     //STDAIR_LOG_DEBUG ("Minimum Stay: " << _fareRule.getMinimumStay ());
00356 }
00357
00358 // //////////////////////////////////////
00359 storeFare ::
00360 storeFare (FareRuleStruct& ioFareRule)
00361 : ParserSemanticAction (ioFareRule) {
00362 }
00363
00364 // //////////////////////////////////////
00365 void storeFare::operator() (double iFare,
00366                             boost::spirit::qi::unused_type,
00367                             boost::spirit::qi::unused_type) const {
00368     const stdair::PriceValue_T lFare = iFare;
00369     _fareRule.setFare (lFare);
00370     // DEBUG
00371     //STDAIR_LOG_DEBUG ("Fare: " << _fareRule.getFare ());
00372 }
00373
00374 // //////////////////////////////////////
00375 storeAirlineCode ::
00376 storeAirlineCode (FareRuleStruct& ioFareRule)
00377 : ParserSemanticAction (ioFareRule) {
00378 }
00379
00380 // //////////////////////////////////////
00381 void storeAirlineCode::operator() (std::vector<char> iChar,
00382                                    boost::spirit::qi::unused_type,
00383                                    boost::spirit::qi::unused_type) const {
00384     const stdair::AirlineCode_T lAirlineCode (iChar.begin(), iChar.end());
00385     // Insertion of this airline Code list in the whole AirlineCode name
00386     _fareRule.addAirlineCode (lAirlineCode);

```

```

00387         // DEBUG
00388         //STDAIR_LOG_DEBUG ( "Airline code: " << lAirlineCode);
00389     }
00390
00391     // //////////////////////////////////////
00392     storeClass ::
00393     storeClass (FareRuleStruct& ioFareRule)
00394         : ParserSemanticAction (ioFareRule) {
00395     }
00396
00397     // //////////////////////////////////////
00398     void storeClass::operator() (std::vector<char> iChar,
00399                                 boost::spirit::qi::unused_type,
00400                                 boost::spirit::qi::unused_type) const {
00401         std::ostringstream ostr;
00402         for (std::vector<char>::const_iterator lItVector = iChar.begin();
00403              lItVector != iChar.end();
00404              lItVector++) {
00405             ostr << *lItVector;
00406         }
00407         const std::string classCodeStr = ostr.str();
00408         const stdair::ClassCode_T lClassCode (classCodeStr);
00409         // Insertion of this class Code list in the whole classCode name
00410         _fareRule.addClassCode (lClassCode);
00411         // DEBUG
00412         //STDAIR_LOG_DEBUG ("Class Code: " << lClassCode);
00413     }
00414
00415     // //////////////////////////////////////
00416     doEndFare::
00417     doEndFare (stdair::BomRoot& ioBomRoot,
00418                FareRuleStruct& ioFareRule)
00419         : ParserSemanticAction (ioFareRule),
00420           _bomRoot (ioBomRoot) {
00421     }
00422
00423     // //////////////////////////////////////
00424     void doEndFare::operator() (boost::spirit::qi::unused_type,
00425                                 boost::spirit::qi::unused_type,
00426                                 boost::spirit::qi::unused_type) const {
00427         // DEBUG
00428         //STDAIR_LOG_DEBUG ("Do End");
00429         // Generation of the fare rule object.
00430         FareRuleGenerator::createAirportPair (_bomRoot, _fareRule);
00431         STDAIR_LOG_DEBUG(_fareRule.describe());
00432     }
00433
00434     // //////////////////////////////////////
00435     //
00436     // Utility Parsers
00437     //
00438     // //////////////////////////////////////
00439     namespace bsq = boost::spirit::qi;
00440     namespace bsa = boost::spirit::ascii;
00441
00442     stdair::int1_p_t int1_p;
00443
00444     stdair::uint2_p_t uint2_p;
00445
00446     stdair::uint4_p_t uint4_p;
00447
00448     stdair::uint1_4_p_t uint1_4_p;
00449
00450     stdair::hour_p_t hour_p;
00451     stdair::minute_p_t minute_p;
00452     stdair::second_p_t second_p;
00453
00454     stdair::year_p_t year_p;
00455     stdair::month_p_t month_p;
00456     stdair::day_p_t day_p;
00457
00458     //
00459     // (Boost Spirit) Grammar Definition
00460     //

```

```

00470
00499     template <typename Iterator>
00500     struct FareRuleParser :
00501     public boost::spirit::qi::grammar<Iterator,
00502         boost::spirit::ascii::space_type> {
00503
00504     FareRuleParser (stdair::BomRoot& ioBomRoot,
00505         FareRuleStruct& iofareRule) :
00506
00507         FareRuleParser::base_type(start),
00508         _bomRoot(ioBomRoot), _fareRule(iofareRule) {
00509
00510
00511     start = *(comments | fare_rule);
00512
00513     comments = (bsq::lexeme[bsq::repeat(2)[bsa::char_('/')]
00514         >> +(bsa::char_ - bsq::eol)
00515         >> bsq::eol]
00516         | bsq::lexeme[bsa::char_('/') >> bsa::char_('*')
00517         >> +(bsa::char_ - bsa::char_('*'))
00518         >> bsa::char_('*') >> bsa::char_('/')]);
00519
00520     fare_rule = fare_key
00521         >> +( ' ' >> segment )
00522         >> fare_rule_end[doEndFare(_bomRoot, _fareRule)];
00523
00524     fare_rule_end = bsa::char_(';');
00525
00526     fare_key = fare_id
00527         >> ';' >> origin >> ';' >> destination
00528         >> ';' >> tripType
00529         >> ';' >> dateRangeStart >> ';' >> dateRangeEnd
00530         >> ';' >> timeRangeStart >> ';' >> timeRangeEnd
00531         >> ';' >> point_of_sale >> ';' >> cabinCode >> ';' >> channel
00532         >> ';' >> advancePurchase >> ';' >> saturdayStay
00533         >> ';' >> changeFees >> ';' >> nonRefundable
00534         >> ';' >> minimumStay >> ';' >> fare;
00535
00536     fare_id = uint1_4_p[storeFareId(_fareRule)];
00537
00538     origin = bsq::repeat(3)[bsa::char_("A-Z")][storeOrigin(_fareRule)];
00539
00540     destination =
00541         bsq::repeat(3)[bsa::char_("A-Z")][storeDestination(_fareRule)];
00542
00543     tripType =
00544         bsq::repeat(2)[bsa::char_("A-Z")][storeTripType(_fareRule)];
00545
00546     dateRangeStart = date[storeDateRangeStart(_fareRule)];
00547
00548     dateRangeEnd = date[storeDateRangeEnd(_fareRule)];
00549
00550     date = bsq::lexeme
00551         [year_p[boost::phoenix::ref(_fareRule._itYear) = bsq::labels::_1]
00552         >> '-'
00553         >> month_p[boost::phoenix::ref(_fareRule._itMonth) = bsq::labels::_1]
00554         >> '-'
00555         >> day_p[boost::phoenix::ref(_fareRule._itDay) = bsq::labels::_1] ];
00556
00557     timeRangeStart = time[storeStartRangeTime(_fareRule)];
00558
00559     timeRangeEnd = time[storeEndRangeTime(_fareRule)];
00560
00561     time = bsq::lexeme
00562         [hour_p[boost::phoenix::ref(_fareRule._itHours) = bsq::labels::_1]
00563         >> ':'
00564         >> minute_p[boost::phoenix::ref(_fareRule._itMinutes) = bsq::labels::_1]
00565         >> - ( ':' >> second_p[boost::phoenix::ref(_fareRule._itSeconds) = bsq
00566             ::labels::_1] ) ];
00567
00568     point_of_sale = bsq::repeat(3)[bsa::char_("A-Z")][storePOS(_fareRule)];
00569
00570     cabinCode = bsa::char_("A-Z") [storeCabinCode(_fareRule)];

```

```

00570
00571     channel = bsq::repeat(2) [bsa::char_("A-Z")] [storeChannel(_fareRule)];
00572
00573     advancePurchase = uint1_4_p[storeAdvancePurchase(_fareRule)];
00574
00575     saturdayStay = bsa::char_("A-Z") [storeSaturdayStay(_fareRule)];
00576
00577     changeFees = bsa::char_("A-Z") [storeChangeFees(_fareRule)];
00578
00579     nonRefundable = bsa::char_("A-Z") [storeNonRefundable(_fareRule)];
00580
00581     minimumStay = uint1_4_p[storeMinimumStay(_fareRule)];
00582
00583     fare = bsq::double_[storeFare(_fareRule)];
00584
00585     segment = bsq::repeat(2) [bsa::char_("A-Z")] [storeAirlineCode(_fareRule)]
00586     >> ';'
00587     >> bsq::repeat(1,bsq::inf) [bsa::char_("A-Z")] [storeClass(_fareRule)];
00588
00589     //BOOST_SPIRIT_DEBUG_NODE (FareRuleParser);
00590     BOOST_SPIRIT_DEBUG_NODE (start);
00591     BOOST_SPIRIT_DEBUG_NODE (comments);
00592     BOOST_SPIRIT_DEBUG_NODE (fare_rule);
00593     BOOST_SPIRIT_DEBUG_NODE (fare_rule_end);
00594     BOOST_SPIRIT_DEBUG_NODE (fare_key);
00595     BOOST_SPIRIT_DEBUG_NODE (fare_id);
00596     BOOST_SPIRIT_DEBUG_NODE (origin);
00597     BOOST_SPIRIT_DEBUG_NODE (destination);
00598     BOOST_SPIRIT_DEBUG_NODE (tripType);
00599     BOOST_SPIRIT_DEBUG_NODE (dateRangeStart);
00600     BOOST_SPIRIT_DEBUG_NODE (dateRangeEnd);
00601     BOOST_SPIRIT_DEBUG_NODE (date);
00602     BOOST_SPIRIT_DEBUG_NODE (timeRangeStart);
00603     BOOST_SPIRIT_DEBUG_NODE (time);
00604     BOOST_SPIRIT_DEBUG_NODE (point_of_sale);
00605     BOOST_SPIRIT_DEBUG_NODE (cabinCode);
00606     BOOST_SPIRIT_DEBUG_NODE (channel);
00607     BOOST_SPIRIT_DEBUG_NODE (advancePurchase);
00608     BOOST_SPIRIT_DEBUG_NODE (saturdayStay);
00609     BOOST_SPIRIT_DEBUG_NODE (changeFees);
00610     BOOST_SPIRIT_DEBUG_NODE (nonRefundable);
00611     BOOST_SPIRIT_DEBUG_NODE (minimumStay);
00612     BOOST_SPIRIT_DEBUG_NODE (fare);
00613     BOOST_SPIRIT_DEBUG_NODE (segment);
00614
00615 }
00616
00617 // Instantiation of rules
00618 boost::spirit::qi::rule<Iterator,
00619     boost::spirit::ascii::space_type>
00620 start, comments, fare_rule, fare_rule_end, fare_key, fare_id, origin,
00621 destination, tripType, dateRangeStart, dateRangeEnd, date,
00622 timeRangeStart, timeRangeEnd, time, point_of_sale, cabinCode, channel,
00623 advancePurchase, saturdayStay, changeFees, nonRefundable, minimumStay,
00624 fare, segment;
00625
00626 // Parser Context
00627 stdair::BomRoot& _bomRoot;
00628 FareRuleStruct& _fareRule;
00629 };
00630
00631 }
00632
00633
00634 //
00635 // Entry class for the file parser
00636 //
00637
00638 // //////////////////////////////////////
00639 FareRuleFileParser::
00640 FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00641     const stdair::Filename_T& iFilename)
00642 : _filename (iFilename), _bomRoot (ioBomRoot) {
00643     init();
00644 }

```

```

00646     }
00647
00648     // ////////////////////////////////////////
00649     void FareRuleFileParser::init() {
00650         // Check that the file exists and is readable
00651         const bool doesExistAndIsReadable =
00652             stdair::BasFileMgr::doesExistAndIsReadable (_filename);
00653
00654         if (doesExistAndIsReadable == false) {
00655             STDAIR_LOG_ERROR ("The fare schedule file " << _filename
00656                             << " does not exist or can not be read.");
00657
00658             throw FareInputFileNotFoundException ("The fare file " + _filename
00659                                                 + " does not exist or can not be
00660 read");
00661         }
00662
00663     // ////////////////////////////////////////
00664     void FareRuleFileParser::generateFareRules () {
00665
00666         STDAIR_LOG_DEBUG ("Parsing fare input file: " << _filename);
00667
00668         // File to be parsed
00669         const std::string* lFileName = &_filename;
00670         const char *lChar = (*lFileName).c_str();
00671         std::ifstream fileToBeParsed(lChar, std::ios_base::in);
00672
00673         // Check if the filename exist and can be open
00674         if (fileToBeParsed == false) {
00675             STDAIR_LOG_ERROR ("The fare file " << _filename << " can not be open."
00676                             << std::endl);
00677
00678             throw FareInputFileNotFoundException ("The file " + _filename
00679                                                 + " does not exist or can not be
00680 read");
00681         }
00682
00683         // Create an input iterator
00684         stdair::base_iterator_t inputBegin (fileToBeParsed);
00685
00686         // Convert input iterator to an iterator usable by spirit parser
00687         stdair::iterator_t
00688             start (boost::spirit::make_default_multi_pass (inputBegin));
00689         stdair::iterator_t end;
00690
00691         // Initialise the parser (grammar) with the helper/staging structure.
00692         FareParserHelper::FareRuleParser<stdair::iterator_t> lFPParser(_bomRoot,
00693 _fareRule);
00694
00695         // Launch the parsing of the file and, thanks to the doEndFare
00696         // call-back structure, the building of the whole BomRoot BOM
00697         const bool hasParsingBeenSuccessful =
00698             boost::spirit::qi::phrase_parse (start, end, lFPParser,
00699                                             boost::spirit::ascii::space);
00700
00701         if (hasParsingBeenSuccessful == false) {
00702             STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00703                             << " failed");
00704             throw FareFileParsingFailedException ("Parsing of fare input file: "
00705                                                 + _filename + " failed");
00706         }
00707
00708         if (start != end) {
00709             STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00710                             << " failed");
00711             throw FareFileParsingFailedException ("Parsing of fare input file: "
00712                                                 + _filename + " failed");
00713         }
00714
00715         if (hasParsingBeenSuccessful == true && start == end) {
00716             STDAIR_LOG_DEBUG ("Parsing of fare input file: " << _filename
00717                             << " succeeded");
00718         }
00719     }

```

```
00717  
00718     }  
00719  
00720 }
```

25.33 simfqt/command/FareParserHelper.hpp File Reference

```
#include <string>          #include <boost/spirit/include/qi.-  
hpp> #include <stdair/command/CmdAbstract.hpp> #include  
<simfqt/SIMFQT_Types.hpp> #include <simfqt/bom/FareRule-  
Struct.hpp>
```

Classes

- struct [SIMFQT::FareParserHelper::ParserSemanticAction](#)
- struct [SIMFQT::FareParserHelper::storeFareId](#)
- struct [SIMFQT::FareParserHelper::storeOrigin](#)
- struct [SIMFQT::FareParserHelper::storeDestination](#)
- struct [SIMFQT::FareParserHelper::storeTripType](#)
- struct [SIMFQT::FareParserHelper::storeDateRangeStart](#)
- struct [SIMFQT::FareParserHelper::storeDateRangeEnd](#)
- struct [SIMFQT::FareParserHelper::storeStartRangeTime](#)
- struct [SIMFQT::FareParserHelper::storeEndRangeTime](#)
- struct [SIMFQT::FareParserHelper::storePOS](#)
- struct [SIMFQT::FareParserHelper::storeCabinCode](#)
- struct [SIMFQT::FareParserHelper::storeChannel](#)
- struct [SIMFQT::FareParserHelper::storeAdvancePurchase](#)
- struct [SIMFQT::FareParserHelper::storeSaturdayStay](#)
- struct [SIMFQT::FareParserHelper::storeChangeFees](#)
- struct [SIMFQT::FareParserHelper::storeNonRefundable](#)
- struct [SIMFQT::FareParserHelper::storeMinimumStay](#)
- struct [SIMFQT::FareParserHelper::storeFare](#)
- struct [SIMFQT::FareParserHelper::storeAirlineCode](#)
- struct [SIMFQT::FareParserHelper::storeClass](#)
- struct [SIMFQT::FareParserHelper::doEndFare](#)
- class [SIMFQT::FareRuleFileParser](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

25.34 FareParserHelper.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREPARSERHELPER_HPP
00002 #define __SIMFQT_CMD_FAREPARSERHELPER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // Boost
00010 #include <boost/spirit/include/qi.hpp>
00011 // StdAir
00012 #include <stdair/command/CmdAbstract.hpp>
00013 // Simfqt
00014 #include <simfqt/SIMFQT_Types.hpp>
00015 #include <simfqt/bom/FareRuleStruct.hpp>
00016
00017 // Forward declarations
00018 namespace stdair {
00019     class BomRoot;
00020 }
00021
00022 namespace SIMFQT {
00023
00024     namespace FareParserHelper {
00025
00026         // //////////////////////////////////////
00027         // Semantic actions
00028         // //////////////////////////////////////
00029
00030         struct ParserSemanticAction {
00031             ParserSemanticAction (FareRuleStruct&);
00032             FareRuleStruct& _fareRule;
00033         };
00034
00035         struct storeFareId : public ParserSemanticAction {
00036             storeFareId (FareRuleStruct&);
00037             void operator() (unsigned int,
00038                             boost::spirit::qi::unused_type,
00039                             boost::spirit::qi::unused_type) const;
00040         };
00041
00042         struct storeOrigin : public ParserSemanticAction {
00043             storeOrigin (FareRuleStruct&);
00044             void operator() (std::vector<char>,
00045                             boost::spirit::qi::unused_type,
00046                             boost::spirit::qi::unused_type) const;
00047         };
00048
00049         struct storeDestination : public ParserSemanticAction {
00050             storeDestination (FareRuleStruct&);
00051             void operator() (std::vector<char>,
00052                             boost::spirit::qi::unused_type,
00053                             boost::spirit::qi::unused_type) const;
00054         };
00055
00056         struct storeTripType : public ParserSemanticAction {
00057             storeTripType (FareRuleStruct&);
00058             void operator() (std::vector<char>,
00059                             boost::spirit::qi::unused_type,
00060                             boost::spirit::qi::unused_type) const;
00061         };
00062
00063         struct storeDateRangeStart : public ParserSemanticAction {
00064             storeDateRangeStart (FareRuleStruct&);
00065             void operator() (boost::spirit::qi::unused_type,
00066                             boost::spirit::qi::unused_type,
00067                             boost::spirit::qi::unused_type) const;
00068         };
00069
00070         struct storeDateRangeEnd : public ParserSemanticAction {

```

```

00092     storeDateRangeEnd (FareRuleStruct&);
00094     void operator() (boost::spirit::qi::unused_type,
00095                     boost::spirit::qi::unused_type,
00096                     boost::spirit::qi::unused_type) const;
00097 };
00098
00100 struct storeStartRangeTime : public ParserSemanticAction {
00102     storeStartRangeTime (FareRuleStruct&);
00104     void operator() (boost::spirit::qi::unused_type,
00105                     boost::spirit::qi::unused_type,
00106                     boost::spirit::qi::unused_type) const;
00107 };
00108
00110 struct storeEndRangeTime : public ParserSemanticAction {
00112     storeEndRangeTime (FareRuleStruct&);
00114     void operator() (boost::spirit::qi::unused_type,
00115                     boost::spirit::qi::unused_type,
00116                     boost::spirit::qi::unused_type) const;
00117 };
00118
00120 struct storePOS : public ParserSemanticAction {
00122     storePOS (FareRuleStruct&);
00124     void operator() (std::vector<char>,
00125                     boost::spirit::qi::unused_type,
00126                     boost::spirit::qi::unused_type) const;
00127 };
00128
00130 struct storeCabinCode : public ParserSemanticAction {
00132     storeCabinCode (FareRuleStruct&);
00134     void operator() (char,
00135                     boost::spirit::qi::unused_type,
00136                     boost::spirit::qi::unused_type) const;
00137 };
00138
00140 struct storeChannel : public ParserSemanticAction {
00142     storeChannel (FareRuleStruct&);
00144     void operator() (std::vector<char>,
00145                     boost::spirit::qi::unused_type,
00146                     boost::spirit::qi::unused_type) const;
00147 };
00148
00150 struct storeAdvancePurchase : public ParserSemanticAction {
00152     storeAdvancePurchase (FareRuleStruct&);
00154     void operator() (unsigned int,
00155                     boost::spirit::qi::unused_type,
00156                     boost::spirit::qi::unused_type) const;
00157 };
00158
00160 struct storeSaturdayStay : public ParserSemanticAction {
00162     storeSaturdayStay (FareRuleStruct&);
00164     void operator() (char,
00165                     boost::spirit::qi::unused_type,
00166                     boost::spirit::qi::unused_type) const;
00167 };
00168
00170 struct storeChangeFees : public ParserSemanticAction {
00172     storeChangeFees (FareRuleStruct&);
00174     void operator() (char,
00175                     boost::spirit::qi::unused_type,
00176                     boost::spirit::qi::unused_type) const;
00177 };
00178
00180 struct storeNonRefundable : public ParserSemanticAction {
00182     storeNonRefundable (FareRuleStruct&);
00184     void operator() (char,
00185                     boost::spirit::qi::unused_type,
00186                     boost::spirit::qi::unused_type) const;
00187 };
00188
00190 struct storeMinimumStay : public ParserSemanticAction {
00192     storeMinimumStay (FareRuleStruct&);
00194     void operator() (unsigned int,
00195                     boost::spirit::qi::unused_type,
00196                     boost::spirit::qi::unused_type) const;

```



```

00197     };
00198
00200     struct storeFare : public ParserSemanticAction {
00202         storeFare (FareRuleStruct&);
00204         void operator() (double,
00205                         boost::spirit::qi::unused_type,
00206                         boost::spirit::qi::unused_type) const;
00207     };
00208
00210     struct storeAirlineCode : public ParserSemanticAction {
00212         storeAirlineCode (FareRuleStruct&);
00214         void operator() (std::vector<char>,
00215                         boost::spirit::qi::unused_type,
00216                         boost::spirit::qi::unused_type) const;
00217     };
00218
00220     struct storeClass : public ParserSemanticAction {
00222         storeClass (FareRuleStruct&);
00224         void operator() (std::vector<char>,
00225                         boost::spirit::qi::unused_type,
00226                         boost::spirit::qi::unused_type) const;
00227     };
00228
00230     struct doEndFare : public ParserSemanticAction {
00232         doEndFare (stdair::BomRoot&, FareRuleStruct&);
00234         void operator() (boost::spirit::qi::unused_type,
00235                         boost::spirit::qi::unused_type,
00236                         boost::spirit::qi::unused_type) const;
00238         stdair::BomRoot& _bomRoot;
00239     };
00240
00241 }
00242
00244 //
00245 // Entry class for the file parser
00246 //
00248
00254 class FareRuleFileParser : public stdair::CmdAbstract {
00255 public:
00257     FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00258                         const stdair::Filename_T& iFilename);
00259
00261     void generateFareRules ();
00262
00263 private:
00265     void init();
00266
00267 private:
00268     // Attributes
00270     stdair::Filename_T _filename;
00271
00273     stdair::BomRoot& _bomRoot;
00274
00276     FareRuleStruct _fareRule;
00277 };
00278
00279 }
00280 #endif // __SIMFQT_CMD_FAREPARSERHELPER_HPP

```

25.35 simfq/command/FareQuoter.cpp File Reference

```

#include <cassert> #include <sstream> #include <stdair/basic/-
BasConst_BomDisplay.hpp> #include <stdair/bom/BomKey-
Manager.hpp> #include <stdair/bom/ParsedKey.hpp> #include
<stdair/bom/BomManager.hpp> #include <stdair/bom/Bom-
Root.hpp> #include <stdair/bom/InventoryKey.hpp> #include
<stdair/bom/FlightDateKey.hpp> #include <stdair/bom/-
SegmentDateKey.hpp> #include <stdair/bom/AirlineClass-

```

```
List.hpp> #include <stdair/bom/AirportPair.hpp> #include
<stdair/bom/PosChannel.hpp> #include <stdair/bom/Date-
Period.hpp> #include <stdair/bom/TimePeriod.hpp> #include
<stdair/bom/FareFeatures.hpp> #include <stdair/bom/-
BookingRequestStruct.hpp> #include <stdair/bom/Travel-
SolutionStruct.hpp> #include <stdair/service/Logger.-
hpp> #include <stdair/bom/key_types.hpp> #include <simfqt/-
SIMFQT_Types.hpp> #include <simfqt/command/FareQuoter.-
hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.36 FareQuoter.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/basic/BasConst_BomDisplay.hpp>
00009 #include <stdair/bom/BomKeyManager.hpp>
00010 #include <stdair/bom/ParsedKey.hpp>
00011 #include <stdair/bom/BomManager.hpp>
00012 #include <stdair/bom/BomRoot.hpp>
00013 #include <stdair/bom/InventoryKey.hpp>
00014 #include <stdair/bom/FlightDateKey.hpp>
00015 #include <stdair/bom/SegmentDateKey.hpp>
00016 #include <stdair/bom/AirlineClassList.hpp>
00017 #include <stdair/bom/AirportPair.hpp>
00018 #include <stdair/bom/PosChannel.hpp>
00019 #include <stdair/bom/DatePeriod.hpp>
00020 #include <stdair/bom/TimePeriod.hpp>
00021 #include <stdair/bom/FareFeatures.hpp>
00022 #include <stdair/bom/BookingRequestStruct.hpp>
00023 #include <stdair/bom/TravelSolutionStruct.hpp>
00024 #include <stdair/service/Logger.hpp>
00025 #include <stdair/bom/key_types.hpp>
00026 // SimFQT
00027 #include <simfqt/SIMFQT_Types.hpp>
00028 #include <simfqt/command/FareQuoter.hpp>
00029
00030 namespace SIMFQT {
00031
00032     bool FareQuoter::_atLeastOneAvailableDateRule = false;
00033     bool FareQuoter::_atLeastOneAvailablePosChannel = false;
00034     bool FareQuoter::_atLeastOneAvailableTimeRule = false;
00035     bool FareQuoter::_atLeastOneAvailableFeaturesRule = false;
00036     bool FareQuoter::_atLeastOneAvailableAirlineClassRule = false;
00037
00038     // //////////////////////////////////////
00039     FareQuoter::FareQuoter() {
00040         assert (false);
00041     }
00042
00043     // //////////////////////////////////////
00044     FareQuoter::FareQuoter(const FareQuoter&) {
00045         assert (false);
00046     }
00047
00048     // //////////////////////////////////////
```

```

00049 FareQuoter::~FareQuoter() {
00050 }
00051
00052 // //////////////////////////////////////
00053 void FareQuoter::reset() {
00054     _atLeastOneAvailableDateRule = false;
00055     _atLeastOneAvailablePosChannel = false;
00056     _atLeastOneAvailableTimeRule = false;
00057     _atLeastOneAvailableFeaturesRule = false;
00058     _atLeastOneAvailableAirlineClassRule = false;
00059 }
00060
00061
00062 // //////////////////////////////////////
00063 void FareQuoter::
00064 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00065             stdair::TravelSolutionList_T& ioTravelSolutionList,
00066             const stdair::BomRoot& iBomRoot) {
00067
00068     // Do an independent price quote for each travel solution related to the
00069     // booking request.
00070     for (stdair::TravelSolutionList_T::iterator itTravelSolution =
00071          ioTravelSolutionList.begin();
00072          itTravelSolution != ioTravelSolutionList.end(); ++itTravelSolution) {
00073         reset();
00074         // Select a travel solution.
00075         stdair::TravelSolutionStruct& lTravelSolutionStruct = *itTravelSolution;
00076         // Price quote the travel solution into question.
00077         priceQuote (iBookingRequest, lTravelSolutionStruct, iBomRoot);
00078     }
00079 }
00080
00081 // //////////////////////////////////////
00082 void FareQuoter::
00083 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00084             stdair::TravelSolutionStruct& ioTravelSolution,
00085             const stdair::BomRoot& iBomRoot) {
00086
00087     // Get the origin of the first segment in order to get the origin of
00088     // the solution.
00089     const stdair::ParsedKey& lFirstSegmentKey =
00090         getFirstSPParsedKey(ioTravelSolution);
00091     const stdair::AirportCode_T& lOrigin = lFirstSegmentKey._boardingPoint;
00092
00093     // Get the destination of the last segment in order to get the
00094     // destination of the solution.
00095     const stdair::ParsedKey& lLastSegmentKey =
00096         getLastSPParsedKey(ioTravelSolution);
00097     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00098
00099     // Construct the Airport pair stream of the segment path.
00100     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00101
00102     // Search for the fare rules having the same origin and destination
00103     airports
00104     // as the travel solution
00105     const stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00106         getObjectPtr<stdair::AirportPair> (iBomRoot, lAirportPairKey.toString());
00107
00108     // If no fare rule has the same origin and destination airports, the
00109     pricing
00110     // is not possible, throw an exception.
00111     if (lAirportPair_ptr == NULL) {
00112         STDAIR_LOG_ERROR ("No available fare rule for the "
00113             << "Origin-Destination pair: "
00114             << lAirportPairKey.toString());
00115         throw AirportPairNotFoundException ("No available fare rule for "
00116             "the Origin-Destination pair: "
00117             + lAirportPairKey.toString());
00118     }
00119     // Sanity check.
00120     assert(lAirportPair_ptr != NULL);

```

```

00120 // Fare rule(s) with the same origin and destination airports exist(s), now
00121 // the date range need to be checked.
00122 const stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00123 priceQuote(iBookingRequest, ioTravelSolution, lAirportPair);
00124
00125 if (_atLeastOneAvailableAirlineClassRule == false) {
00126     displayMissingFareRuleMessage(iBookingRequest, ioTravelSolution);
00127 }
00128 }
00129
00130 // //////////////////////////////////////
00131 void FareQuoter::
00132 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00133             stdair::TravelSolutionStruct& ioTravelSolution,
00134             const stdair::AirportPair& iAirportPair) {
00135
00136     // Get the first segment path parsed key.
00137     const stdair::ParsedKey lFirstSPParsedKey =
00138         getFirstSPParsedKey(ioTravelSolution);
00139
00140     // Get the date of the first segment date key.
00141     const stdair::FlightDateKey& lFlightDateKey =
00142         lFirstSPParsedKey.getFlightDateKey();
00143     const stdair::Date_T& lSPDate = lFlightDateKey.getDepartureDate();
00144
00145     // Get the list of the fare date ranges.
00146     const stdair::DatePeriodList_T& lFareDatePeriodList =
00147         stdair::BomManager::getList<stdair::DatePeriod> (iAirportPair);
00148
00149     // Browse the list of the fare rules date range.
00150     for (stdair::DatePeriodList_T::const_iterator itDateRange =
00151          lFareDatePeriodList.begin();
00152          itDateRange != lFareDatePeriodList.end(); ++itDateRange) {
00153
00154         const stdair::DatePeriod* lCurrentFareDatePeriod_ptr = *itDateRange ;
00155         assert (lCurrentFareDatePeriod_ptr != NULL);
00156
00157         // Select the fare rules having a corresponding date range.
00158         const bool isDepartureDateValid =
00159             lCurrentFareDatePeriod_ptr->isDepartureDateValid (lSPDate);
00160
00161         // If a fare rule has a corresponding date range, its channel and
00162         position
00163         // need to be checked.
00164         if (isDepartureDateValid == true) {
00165             _atLeastOneAvailableDateRule = true;
00166             const stdair::DatePeriod& lCurrentFareDatePeriod =
00167                 *lCurrentFareDatePeriod_ptr;
00168             priceQuote (iBookingRequest, ioTravelSolution,
00169                         lCurrentFareDatePeriod, iAirportPair);
00169         }
00170     }
00171 }
00172
00173 // //////////////////////////////////////
00174 void FareQuoter::
00175 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00176             stdair::TravelSolutionStruct& ioTravelSolution,
00177             const stdair::DatePeriod& iFareDatePeriod,
00178             const stdair::AirportPair& iAirportPair) {
00179
00180     // Get the point-of-sale of the booking request.
00181     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00182
00183     // Get the booking request channel.
00184     const stdair::ChannelLabel_T& lChannel =
00185         iBookingRequest.getBookingChannel();
00186
00187     // Construct the corresponding POS-channel primary key.
00188     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00189
00190     // Search for the fare rules having the same point-of-sale and channel as
00191     // the travel solution.

```

```

00193     const stdair::PosChannelList_T lFarePosChannelList =
00194         stdair::BomManager::getList<stdair::PosChannel> (iFareDatePeriod);
00195
00196     // Browse the list of the fare rules pos channel.
00197     for (stdair::PosChannelList_T::const_iterator itPosChannel =
00198         lFarePosChannelList.begin();
00199         itPosChannel != lFarePosChannelList.end();
00200         ++itPosChannel) {
00201         const stdair::PosChannel* lCurrentFarePosChannel_ptr = *itPosChannel;
00202         assert (lCurrentFarePosChannel_ptr != NULL);
00203
00204         // Get the point-of-sale and channel of the current fare rule.
00205         const stdair::CityCode_T& lCurrentPointOfSale =
00206             lCurrentFarePosChannel_ptr->getPos();
00207         const stdair::ChannelLabel_T& lCurrentChannel =
00208             lCurrentFarePosChannel_ptr->getChannel();
00209
00210         // Select the fare rules having a corresponding pos channel.
00211         if (lCurrentPointOfSale == lPointOfSale &&
00212             lCurrentChannel == lChannel) {
00213             _atLeastOneAvailablePosChannel = true;
00214             // Fare rule(s) with the same point-of-sale and channel exist(s), now
00215             // the time range need to be checked.
00216             const stdair::PosChannel& lFarePosChannel= *lCurrentFarePosChannel_ptr;
00217             priceQuote (iBookingRequest, ioTravelSolution, lFarePosChannel);
00218         }
00219     }
00220 }
00221 }
00222
00223 // //////////////////////////////////////
00224 void FareQuoter::
00225 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00226             stdair::TravelSolutionStruct& ioTravelSolution,
00227             const stdair::PosChannel& iFarePosChannel) {
00228
00229     // Get the first segment path parsed key.
00230     const stdair::ParsedKey lFirstSPParsedKey =
00231         getFirstSPParsedKey(ioTravelSolution);
00232
00233     // Get the segment boarding time of the segment path.
00234     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00235
00236     // Get the list of the fare rules time period.
00237     const stdair::TimePeriodList_T& lFareTimePeriodList =
00238         stdair::BomManager::getList<stdair::TimePeriod> (iFarePosChannel);
00239
00240     // Browse the list of the fare rules time range.
00241     for (stdair::TimePeriodList_T::const_iterator itTimeRange =
00242         lFareTimePeriodList.begin();
00243         itTimeRange != lFareTimePeriodList.end();
00244         ++itTimeRange) {
00245         const stdair::TimePeriod* lCurrentFareTimePeriod_ptr = *itTimeRange ;
00246         assert (lCurrentFareTimePeriod_ptr != NULL);
00247
00248         // Select the fare rules having a corresponding time range.
00249         const bool isDepartureTimeValid =
00250             lCurrentFareTimePeriod_ptr->isDepartureTimeValid (lSPTime);
00251
00252         // If a fare rule has a corresponding time range, its advanced purchase,
00253         // trip type and minimum stay duration need to be checked.
00254         if (isDepartureTimeValid) {
00255             _atLeastOneAvailableTimeRule = true;
00256             const stdair::TimePeriod& lCurrentFareTimePeriod =
00257                 *lCurrentFareTimePeriod_ptr;
00258             priceQuote (iBookingRequest, ioTravelSolution,
00259                 lCurrentFareTimePeriod, iFarePosChannel);
00260         }
00261     }
00262 }
00263 }
00264
00265 // //////////////////////////////////////
00266 void FareQuoter::

```

```

00267 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00268             stdair::TravelSolutionStruct& ioTravelSolution,
00269             const stdair::TimePeriod& iFareTimePeriod,
00270             const stdair::PosChannel& iFarePosChannel) {
00271
00272     // Get the stay duration of the booking request.
00273     const stdair::DayDuration_T& lStayDuration=
00274         iBookingRequest.getStayDuration();
00275
00276     // Get the booking request trip type.
00277     const stdair::TripType_T& lTripType =
00278         iBookingRequest.getTripType();
00279
00280     // Get the booking request date time.
00281     const stdair::DateTime_T& lRequestDateTime =
00282         iBookingRequest.getRequestDateTime();
00283
00284     // Get the referenced departure date of the segment path.
00285     const stdair::ParsedKey lFirstSPParsedKey =
00286         getFirstSPParsedKey(ioTravelSolution);
00287     const stdair::Date_T& lSPDate =
00288         lFirstSPParsedKey.getFlightDateKey().getDepartureDate();
00289
00290     // Get the segment boarding time of the segment path.
00291     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00292
00293     // Construct the date-time type corresponding to the flight date
00294     const stdair::DateTime_T lSPDateTime (lSPDate, lSPTime);
00295
00296     bool isTripTypeValid = false;
00297     bool isStayDurationValid = false;
00298     bool isAdvancePurchaseValid = false;
00299
00300     // Get the list of the fare features.
00301     const stdair::FareFeaturesList_T& lFareFeaturesList =
00302         stdair::BomManager::getList<stdair::FareFeatures> (iFareTimePeriod);
00303
00304     // Browse the list of the fare rules features.
00305     for (stdair::FareFeaturesList_T::const_iterator itFareFeatures =
00306         lFareFeaturesList.begin();
00307         itFareFeatures != lFareFeaturesList.end();
00308         ++itFareFeatures) {
00309         const stdair::FareFeatures* lCurrentFareFeatures_ptr =
00310             *itFareFeatures;
00311         assert (lCurrentFareFeatures_ptr != NULL);
00312
00313         // Does the current fare features correspond to a correct trip
00314         // type?
00315         isTripTypeValid =
00316             lCurrentFareFeatures_ptr->isTripTypeValid (lTripType);
00317         // Does the current fare features correspond to a correct stay
00318         // duration?
00319         isStayDurationValid =
00320             lCurrentFareFeatures_ptr->isStayDurationValid (lStayDuration);
00321         // Does the current fare features correspond to a correct advanced
00322         // purchase?
00323         isAdvancePurchaseValid = lCurrentFareFeatures_ptr->
00324             isAdvancePurchaseValid (lRequestDateTime,
00325                                     lSPDateTime);
00326
00327         // Search for the fare rules having corresponding features.
00328         if (isStayDurationValid && isAdvancePurchaseValid && isTripTypeValid) {
00329             _atLeastOneAvailableFeaturesRule = true;
00330             // Create a fare structure for the travel solution.
00331             stdair::FareOptionStruct lFareOption;
00332             const stdair::ChangeFees_T& lChangeFees =
00333                 lCurrentFareFeatures_ptr->getChangeFees();
00334             // Set the fare change fees.
00335             lFareOption.setChangeFees (lChangeFees);
00336             const stdair::NonRefundable_T& lNonRefundable =
00337                 lCurrentFareFeatures_ptr->getRefundableOption();
00338             // Set the fare refundable option.
00339             lFareOption.setNonRefundable (lNonRefundable);
00340             const stdair::SaturdayStay_T& lSaturdayStay =

```

```

00341         lCurrentFareFeatures_ptr->getSaturdayStay();
00342         // Set the fare saturday night stay option.
00343         lFareOption.setSaturdayStay (lSaturdayStay);
00344         const stdair::FareFeatures& lCurrentFareFeatures =
00345             *lCurrentFareFeatures_ptr;
00346         priceQuote (iBookingRequest, ioTravelSolution,
00347                     lCurrentFareFeatures, iFarePosChannel,
00348                     lFareOption);
00349     }
00350 }
00351
00352 }
00353
00354
00355 // //////////////////////////////////////
00356 void FareQuoter::
00357 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00358             stdair::TravelSolutionStruct& ioTravelSolution,
00359             const stdair::FareFeatures& iFareFeatures,
00360             const stdair::PosChannel& iFarePosChannel,
00361             stdair::FareOptionStruct& iFareOption) {
00362
00363     // Get the first segment path parsed key.
00364     const stdair::ParsedKey lFirstSPParsedKey =
00365         getFirstSPParsedKey(ioTravelSolution);
00366
00367     // Get the segment-path of the travel solution.
00368     const stdair::SegmentPath_T& lSegmentPath =
00369         ioTravelSolution.getSegmentPath();
00370
00371     // Get the list of the fare rules.
00372     const stdair::AirlineClassListList_T& lAirlineClassListList =
00373         stdair::BomManager::getList<stdair::AirlineClassList> (iFareFeatures);
00374
00375     bool lCorrectAirlineRule = false;
00376     bool lAtLeastOneDifferentAirline = false;
00377
00378     // Browse the list of airline code list and search for the fare rules
00379     // having a corresponding airline list.
00380     for (stdair::AirlineClassListList_T::const_iterator itAirlineClassList =
00381          lAirlineClassListList.begin();
00382          itAirlineClassList != lAirlineClassListList.end();
00383          ++itAirlineClassList) {
00384         const stdair::AirlineClassList* lCurrentAirlineClassList_ptr =
00385             *itAirlineClassList;
00386         assert (lCurrentAirlineClassList_ptr != NULL);
00387
00388         lCorrectAirlineRule = true;
00389         lAtLeastOneDifferentAirline = false;
00390
00391         const stdair::ClassList_StringList_T lClassList_StringList =
00392             lCurrentAirlineClassList_ptr->getAirlineCodeList();
00393
00394         // Compare the segment path airline list with the fare rule airline list.
00395         if (lClassList_StringList.size() == lSegmentPath.size()) {
00396             // If the two sizes are equal, we need to compare the airline codes.
00397             stdair::SegmentPath_T::const_iterator itSegmentPath =
00398                 lSegmentPath.begin();
00399
00400             stdair::ClassList_StringList_T::const_iterator itClassList_String =
00401                 lClassList_StringList.begin();
00402             // Browse the segment path airline code list (while the segment path
00403             // airline list is equal to the fare rule airline list).
00404             while (itSegmentPath != lSegmentPath.end()
00405                  && lAtLeastOneDifferentAirline == false) {
00406
00407                 // Get the segment airline code.
00408                 const std::string lSegmentDateKey = *itSegmentPath;
00409                 const stdair::ParsedKey& lParsedKey =
00410                     stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00411                 const stdair::InventoryKey& lInventoryKey =
00412                     lParsedKey.getInventoryKey();
00413                 const stdair::AirlineCode_T& lSegmentAirlineCode =
00414                     lInventoryKey.getAirlineCode();

```

```

00415
00416         // Get the fare rule airline code.
00417         const stdair::AirlineCode_T& lFareRuleAirlineCode =
00418             *itClassList_String;
00419
00420         if (lSegmentAirlineCode != lFareRuleAirlineCode) {
00421             lAtLeastOneDifferentAirline = true;
00422         }
00423         itSegmentPath++;
00424         itClassList_String++;
00425     }
00426
00427 } else {
00428     // If the two sizes are different, the fare rule does not match the
00429     // travel solution into question.
00430     lCorrectAirlineRule = false;
00431 }
00432
00433 // If one segment airline code and one fare rule airline code are
00434 // different then the fare rule does not match the travel solution.
00435 if (lAtLeastOneDifferentAirline == true) {
00436     lCorrectAirlineRule = false;
00437 }
00438
00439 // If the current fare rule is a match, add the fare option structure
00440 // to the travel solution into question.
00441 if (lCorrectAirlineRule == true) {
00442     _atLeastOneAvailableAirlineClassRule = true;
00443     // Get the booking request trip type.
00444     const stdair::TripType_T& lTripType =
00445         iBookingRequest.getTripType();
00446
00447     // Get the travel fare.
00448     stdair::Fare_T lFare =
00449         lCurrentAirlineClassList_ptr->getFare();
00450     // If the trip into question is the inbound or outbound part of a round
00451     trip,
00452     // the applicable fare is a half RT fare.
00453     if (lTripType == "RI" || lTripType == "RO") {
00454         lFare /= 2;
00455     }
00456     // Set the travel fare option.
00457     iFareOption.setFare (lFare);
00458     // Copy the class path list into the fare option.
00459     const stdair::ClassList_StringList_T& lClassCodeList =
00460         lCurrentAirlineClassList_ptr->getClassCodeList();
00461     for (stdair::ClassList_StringList_T::const_iterator itClassCodeList =
00462         lClassCodeList.begin();
00463         itClassCodeList != lClassCodeList.end(); ++itClassCodeList ) {
00464         const stdair::ClassList_String_T& lClassCodeList = *itClassCodeList;
00465         iFareOption.addClassList (lClassCodeList);
00466     }
00467
00468     // Add the fare option to the travel solution into question.
00469     ioTravelSolution.addFareOption (iFareOption);
00470
00471     // DEBUG
00472     STDAIR_LOG_DEBUG ("Segment path: " << lFirstSPParsedKey.toString()
00473         << ". A corresponding fare option for the '"
00474         << lCurrentAirlineClassList_ptr->describeKey()
00475         << "' class is: " << iFareOption);
00476     iFareOption.emptyClassList();
00477 }
00478 }
00479 }
00480 }
00481
00482 ///////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00483 stdair::ParsedKey FareQuoter::
00484 getFirstSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00485
00486     // Get the segment-path of the travel solution.
00487     const stdair::SegmentPath_T& lSegmentPath =

```



```

00488         ioTravelSolution.getSegmentPath();
00489
00490         // Get the number of segments of the travel solution.
00491         const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00492
00493         // Sanity check: there is at least one segment in the travel solution.
00494         assert (lNbSegments >= 1);
00495
00496         // Get the first segment of the travel solution.
00497         const std::string& lFirstSegmentDateKey = lSegmentPath.front();
00498
00499         // Get the parsed key of the first segment of the travel solution.
00500         const stdair::ParsedKey& lFirstSegmentParsedKey =
00501             stdair::BomKeyManager::extractKeys (lFirstSegmentDateKey);
00502
00503         return lFirstSegmentParsedKey;
00504     }
00505 }
00506
00507 // //////////////////////////////////////
00508 stdair::ParsedKey FareQuoter::
00509 getLastSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00510
00511     // Get the segment-path of the travel solution.
00512     const stdair::SegmentPath_T& lSegmentPath =
00513         ioTravelSolution.getSegmentPath();
00514
00515     // Get the number of segments of the travel solution.
00516     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00517
00518     // Sanity check: there is at least one segment in the travel solution.
00519     assert (lNbSegments >= 1);
00520
00521     // Get the last segment of the travel solution.
00522     const std::string& lLastSegmentDateKey = lSegmentPath.back();
00523
00524     // Get the parsed key of the last segment of the travel solution.
00525     const stdair::ParsedKey& lLastSegmentParsedKey =
00526         stdair::BomKeyManager::extractKeys (lLastSegmentDateKey);
00527
00528     return lLastSegmentParsedKey;
00529 }
00530
00531 // //////////////////////////////////////
00532 void FareQuoter::
00533 displayMissingFareRuleMessage (const stdair::BookingRequestStruct&
00534 iBookingRequest,
00535                               stdair::TravelSolutionStruct& ioTravelSolution
00536 ) {
00537
00538     // Get the origin of the first segment in order to get the origin of
00539     // the solution.
00540     const stdair::ParsedKey lFirstSPParsedKey =
00541         getFirstSPParsedKey(ioTravelSolution);
00542     const stdair::AirportCode_T& lOrigin = lFirstSPParsedKey._boardingPoint;
00543
00544     // Get the destination of the last segment in order to get the
00545     // destination of the solution.
00546     const stdair::ParsedKey& lLastSegmentKey =
00547         getLastSPParsedKey(ioTravelSolution);
00548     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00549
00550     // Construct the Airport pair stream of the segment path.
00551     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00552
00553     // Get the date of the first segment date key.
00554     const stdair::FlightDateKey& lFlightDateKey =
00555         lFirstSPParsedKey.getFlightDateKey();
00556
00557     // Get the point-of-sale of the booking request.
00558     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00559     // Get the booking request channel.
00560     const stdair::ChannelLabel_T& lChannel =

```

```

00560         iBookingRequest.getBookingChannel();
00561         // Construct the corresponding POS-channel primary key.
00562         const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00563
00564         // Get the booking request date time.
00565         const stdair::DateTime_T& lRequestDateTime =
00566             iBookingRequest.getRequestDateTime();
00567
00568         // If no fare rule has a corresponding date range, the pricing is not
00569         // possible, throw an exception.
00570         if (_atLeastOneAvailableDateRule == false) {
00571             const stdair::SegmentDateKey lSegmentDateKey =
00572                 lFirstSPParsedKey.getSegmentKey();
00573             STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00574                 "flight date " << lFlightDateKey.toString()
00575                 << " and the Origin-Destination pair: "
00576                 << lSegmentDateKey.toString());
00577             throw FlightDateNotFoundException ("No available fare rule for the "
00578                 "flight date "
00579                 + lFlightDateKey.toString()
00580                 + " and the Origin-Destination pair: "
00581                 + lSegmentDateKey.toString());
00582         }
00583         // If no fare rule has a corresponding pos channel, the pricing is not
00584         // possible, throw an exception.
00585         else if (_atLeastOneAvailablePosChannel == false) {
00586             STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00587                 "point of sale " << lPointOfSale
00588                 << ", to the channel " << lChannel
00589                 << ", to the flight date "
00590                 << lFlightDateKey.toString()
00591                 << " and to the Origin-Destination pair: "
00592                 << lAirportPairKey.toString());
00593             throw PosOrChannelNotFoundException ("No available fare rule for the "
00594                 "point of sale " + lPointOfSale
00595                 + ", the channel " + lChannel
00596                 + ", the flight date "
00597                 + lFlightDateKey.toString()
00598                 + " and the Origin-Destination pair: "
00599                 + lAirportPairKey.toString());
00600         }
00601         // If no fare rule has a corresponding time range, the pricing is not
00602         // possible, throw an exception.
00603         else if (_atLeastOneAvailableTimeRule == false) {
00604             STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00605                 << lFirstSPParsedKey.toString() << "' (parsed key) and
00606                 to '"
00607                 << lFarePosChannelKey.toString() << "' (POS and
00608                 channel)");
00609             throw FlightTimeNotFoundException ("No available fare rule corresponding
00610                 "
00611                 "to '" + lFirstSPParsedKey.toString()
00612                 + "' (parsed key) and to '"
00613                 + lFarePosChannelKey.toString()
00614                 + "' (POS and channel)");
00615         }
00616         // If no fare rule matches the advance purchase, trip type and stay
00617         // duration criterion, the pricing is not possible, throw an exception.
00618         else if (_atLeastOneAvailableFeaturesRule == false) {
00619             // Get the stay duration of the booking request.
00620             const stdair::DayDuration_T& lStayDuration=
00621                 iBookingRequest.getStayDuration();
00622             std::ostringstream lStayDurationStream;
00623             lStayDurationStream << lStayDuration;
00624             const std::string lStayDurationString (lStayDurationStream.str());
00625
00626             // Get the booking request trip type.
00627             const stdair::TripType_T& lTripType =
00628                 iBookingRequest.getTripType();
00629             STDAIR_LOG_ERROR ("No available fare rule corresponding to a "

```

```

00628         "trip type " << lTripType
00629         << ", to a stay duration of " << lStayDurationString
00630         << ", to a request date time of " << lRequestDateTime
00631         << ", to '" << lFirstSPParsedKey.toString()
00632         << "' (parsed key) and to '"
00633         << lFarePosChannelKey << "' (POS and channel)");
00634         throw FeaturesNotFoundException ("No available fare rule corresponding to
a "
00635         "trip type " + lTripType
00636         + ", to a stay duration of "
00637         + lStayDurationString
00638         + ", to a request date time of "
00639         + boost::posix_time::to_simple_string(
lRequestDateTime)
00640         + ", to '" + lFirstSPParsedKey.toString(
)
00641         + "' (parsed key) and to '"
00642         + lFarePosChannelKey.toString()
00643         + "' (POS and channel)");
00644     }
00645     assert (_atLeastOneAvailableAirlineClassRule == false);
00646     // If no fare rule matches the airline class path, the pricing is not
00647     // possible, throw an exception.
00648     STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00649     << lFirstSPParsedKey .toString() << "' (parsed key), to '"
"
00650     << iBookingRequest.describe()
00651     << "' (booking request) and to '"
00652     << lFarePosChannelKey.toString() << "' (POS and channel)");
);
00653     throw AirlineNotFoundException ("No available fare rule corresponding to '"
00654     + lFirstSPParsedKey .toString()
00655     + "' (parsed key), to '"
00656     + iBookingRequest.describe()
00657     + "' (booking request) and to '"
00658     + lFarePosChannelKey.toString()
00659     + "' (POS and channel)");
00660 }
00661 }
00662

```

25.37 simfqt/command/FareQuoter.hpp File Reference

```

#include <stdair/stdair_basic_types.hpp> #include <stdair/bom/-
TravelSolutionTypes.hpp>

```

Classes

- class [SIMFQT::FareQuoter](#)
Command wrapping the pricing request process.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.38 FareQuoter.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREQUOTER_HPP

```

```

00002 #define __SIMFQT_CMD_FAREQUOTER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00012 namespace stdair {
00013     class BomRoot;
00014     struct BookingRequestStruct;
00015     struct TravelSolutionStruct;
00016     struct ParsedKey;
00017     class AirportPair;
00018     class PosChannel;
00019     class DatePeriod;
00020     class TimePeriod;
00021     class FareFeatures;
00022 }
00023
00024 namespace SIMFQT {
00025
00029     class FareQuoter {
00032         friend class SIMFQT_Service;
00033
00034     private:
00035         // ////////////////////////////////// Business support methods //////////////////////////////////
00045         static void priceQuote (const stdair::BookingRequestStruct&,
00046                                 stdair::TravelSolutionList_T&,
00047                                 const stdair::BomRoot&);
00048
00060         static void priceQuote (const stdair::BookingRequestStruct&,
00061                                 stdair::TravelSolutionStruct&,
00062                                 const stdair::BomRoot&);
00063
00074         static void priceQuote (const stdair::BookingRequestStruct&,
00075                                 stdair::TravelSolutionStruct&,
00076                                 const stdair::AirportPair&);
00077
00092         static void priceQuote (const stdair::BookingRequestStruct&,
00093                                 stdair::TravelSolutionStruct&,
00094                                 const stdair::DatePeriod&,
00095                                 const stdair::AirportPair&);
00096
00108         static void priceQuote (const stdair::BookingRequestStruct&,
00109                                 stdair::TravelSolutionStruct&,
00110                                 const stdair::PosChannel&);
00111
00126         static void priceQuote (const stdair::BookingRequestStruct&,
00127                                 stdair::TravelSolutionStruct&,
00128                                 const stdair::TimePeriod&,
00129                                 const stdair::PosChannel&);
00130
00148         static void priceQuote (const stdair::BookingRequestStruct&,
00149                                 stdair::TravelSolutionStruct&,
00150                                 const stdair::FareFeatures&,
00151                                 const stdair::PosChannel&,
00152                                 stdair::FareOptionStruct&);
00153
00157         static void reset ();
00158
00168         static void displayMissingFareRuleMessage (const
stdair::BookingRequestStruct&,
00169                                                     stdair::TravelSolutionStruct&);
00170
00178         static stdair::ParsedKey getFirstSPParsedKey (stdair::TravelSolutionStruct&
);
00179
00187         static stdair::ParsedKey getLastSPParsedKey (stdair::TravelSolutionStruct&
);
00188
00189
00190

```

```

00191 private:
00192     // ////////////////////////////////// Construction and destruction //////////////////////////////////
00196     FareQuoter();
00197
00201     FareQuoter(const FareQuoter&);
00202
00206     ~FareQuoter();
00207
00208 private:
00209
00212     static bool _atLeastOneAvailableDateRule;
00213
00216     static bool _atLeastOneAvailablePosChannel;
00217
00221     static bool _atLeastOneAvailableTimeRule;
00222
00226     static bool _atLeastOneAvailableFeaturesRule;
00227
00231     static bool _atLeastOneAvailableAirlineClassRule;
00232
00233 };
00234
00235 }
00236 #endif // __SIMFQT_CMD_FAREQUOTER_HPP
00237

```

25.39 simfqt/command/FareRuleGenerator.cpp File Reference

```

#include <cassert>    #include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp> #include <stdair/factory/-
FacBomManager.hpp>    #include <stdair/service/Logger.hpp>
#include <stdair/bom/AirportPair.hpp> #include <stdair/bom/-
PosChannel.hpp>        #include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp> #include <stdair/bom/-
FareFeatures.hpp> #include <stdair/bom/AirlineClassList.-
hpp>    #include <simfqt/bom/FareRuleStruct.hpp>    #include
<simfqt/command/FareRuleGenerator.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.40 FareRuleGenerator.cpp

```

00001 // //////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/bom/BomManager.hpp>
00008 #include <stdair/bom/BomRoot.hpp>
00009 #include <stdair/factory/FacBomManager.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 #include <stdair/bom/AirportPair.hpp>
00012 #include <stdair/bom/PosChannel.hpp>
00013 #include <stdair/bom/DatePeriod.hpp>
00014 #include <stdair/bom/TimePeriod.hpp>
00015 #include <stdair/bom/FareFeatures.hpp>
00016 #include <stdair/bom/AirlineClassList.hpp>
00017 // SimFQT

```

```

00018 #include <simfqt/bom/FareRuleStruct.hpp>
00019 #include <simfqt/command/FareRuleGenerator.hpp>
00020
00021 namespace SIMFQT {
00022
00023 // //////////////////////////////////////
00024 void FareRuleGenerator::
00025     createAirportPair (stdair::BomRoot& ioBomRoot,
00026                       const FareRuleStruct& iFareRuleStruct) {
00027
00028     // Create the airport-pair primary key.
00029     const stdair::AirportCode_T& lBoardPoint = iFareRuleStruct.getOrigin ();
00030     const stdair::AirportCode_T& lOffPoint =
00031         iFareRuleStruct.getDestination ();
00032     const stdair::AirportPairKey lAirportPairKey (lBoardPoint, lOffPoint);
00033
00034     // Check that the airport-pair object is not already existing. If an
00035     // airport-pair object with the same key has not already been created,
00036     // create it and link it to the ioBomRoot object.
00037     stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00038         getObjectPtr<stdair::AirportPair> (ioBomRoot, lAirportPairKey.toString());
00039
00040     if (lAirportPair_ptr == NULL) {
00041         lAirportPair_ptr =
00042             &stdair::FacBom<stdair::AirportPair>::instance().
00043             create (lAirportPairKey);
00044         stdair::FacBomManager::addToListAndMap (ioBomRoot, *lAirportPair_ptr);
00045         stdair::FacBomManager::linkWithParent (ioBomRoot, *lAirportPair_ptr);
00046     }
00047     // Sanity check.
00048     assert (lAirportPair_ptr != NULL);
00049
00050     stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00051     // Generate the date-period object corresponding to the given
00052     // fareRule.
00053     createDateRange (lAirportPair, iFareRuleStruct);
00054 }
00055
00056 // //////////////////////////////////////
00057 void FareRuleGenerator::
00058     createDateRange (stdair::AirportPair& iAirportPair,
00059                     const FareRuleStruct& iFareRuleStruct) {
00060
00061     // Create the fare date-period primary key.
00062     const stdair::Date_T& lDateRangeStart =
00063         iFareRuleStruct.getDateRangeStart ();
00064     const stdair::Date_T& lDateRangeEnd =
00065         iFareRuleStruct.getDateRangeEnd ();
00066     const stdair::DatePeriod_T lDatePeriod (lDateRangeStart, lDateRangeEnd);
00067     const stdair::DatePeriodKey lFareDatePeriodKey (lDatePeriod);
00068
00069     // Check that the date-period object is not already existing.
00070     // If a date-period object with the same key has not already been
00071     // created, create it and link it to the airport-pair object.
00072     stdair::DatePeriod* lFareDatePeriod_ptr = stdair::BomManager::
00073         getObjectPtr<stdair::DatePeriod> (iAirportPair,
00074                                           lFareDatePeriodKey.toString());
00075
00076     if (lFareDatePeriod_ptr == NULL) {
00077         lFareDatePeriod_ptr = &stdair::FacBom<stdair::DatePeriod>::instance().
00078             create (lFareDatePeriodKey);
00079         stdair::FacBomManager::addToListAndMap (iAirportPair,
00080                                                 *lFareDatePeriod_ptr);
00081         stdair::FacBomManager::linkWithParent (iAirportPair,
00082                                                 *lFareDatePeriod_ptr);
00083     }
00084     // Sanity check.
00085     assert (lFareDatePeriod_ptr != NULL);
00086
00087     stdair::DatePeriod& lDateRange = *lFareDatePeriod_ptr;
00088     // Generate the point_of_sale-channel object corresponding to
00089     // the given fareRule.
00090     createPOSChannel (lDateRange, iFareRuleStruct);

```

```

00091 }
00092
00093 // //////////////////////////////////////
00094 void FareRuleGenerator::
00095 createPOSSChannel (stdair::DatePeriod& iDatePeriod,
00096                   const FareRuleStruct& iFareRuleStruct) {
00097
00098     // Create the point-of-sale-channel primary key.
00099     const stdair::CityCode_T& lPosition = iFareRuleStruct.getPOS ();
00100     const stdair::ChannelLabel_T& lChannel =
00101         iFareRuleStruct.getChannel ();
00102     const stdair::PosChannelKey lFarePosChannelKey (lPosition, lChannel);
00103
00104     // Check that the point_of_sale-channel object is not already existing.
00105     // If a point_of_sale-channel object with the same key has not already
00106     // been created, create it and link it to the date-period object.
00107     stdair::PosChannel* lFarePosChannel_ptr = stdair::BomManager::
00108         getObjectPtr<stdair::PosChannel> (iDatePeriod,
00109                                           lFarePosChannelKey.toString());
00110     if (lFarePosChannel_ptr == NULL) {
00111         lFarePosChannel_ptr = &stdair::FacBom<stdair::PosChannel>::instance().
00112             create (lFarePosChannelKey);
00113         stdair::FacBomManager::addToListAndMap (iDatePeriod,
00114                                                 *lFarePosChannel_ptr);
00115         stdair::FacBomManager::linkWithParent (iDatePeriod,
00116                                                 *lFarePosChannel_ptr);
00117     }
00118     // Sanity check.
00119     assert (lFarePosChannel_ptr != NULL);
00120
00121     stdair::PosChannel& lPosChannel = *lFarePosChannel_ptr;
00122     // Generate the time-period object corresponding to the given
00123     // fareRule.
00124     createTimeRange (lPosChannel, iFareRuleStruct);
00125 }
00126
00127
00128
00129 // //////////////////////////////////////
00130 void FareRuleGenerator::
00131 createTimeRange (stdair::PosChannel& iPosChannel,
00132                 const FareRuleStruct& iFareRuleStruct) {
00133
00134     // Create the fare time-period primary key.
00135     const stdair::Time_T& lTimeRangeStart =
00136         iFareRuleStruct.getTimeRangeStart ();
00137     const stdair::Time_T& lTimeRangeEnd =
00138         iFareRuleStruct.getTimeRangeEnd ();
00139     const stdair::TimePeriodKey lFareTimePeriodKey (lTimeRangeStart,
00140                                                     lTimeRangeEnd);
00141
00142     // Check that the time-period object is not already existing.
00143     // If a time-period object with the same key has not already been
00144     // created, create it and link it to the point_of_sale-channel object.
00145
00146     stdair::TimePeriod* lFareTimePeriod_ptr = stdair::BomManager::
00147         getObjectPtr<stdair::TimePeriod> (iPosChannel,
00148                                           lFareTimePeriodKey.toString());
00149     if (lFareTimePeriod_ptr == NULL) {
00150         lFareTimePeriod_ptr = &stdair::FacBom<stdair::TimePeriod>::instance().
00151             create (lFareTimePeriodKey);
00152         stdair::FacBomManager::addToListAndMap (iPosChannel,
00153                                                 *lFareTimePeriod_ptr);
00154         stdair::FacBomManager::linkWithParent (iPosChannel,
00155                                                 *lFareTimePeriod_ptr);
00156     }
00157     // Sanity check.
00158     assert (lFareTimePeriod_ptr != NULL);
00159
00160     stdair::TimePeriod& lTimeRange = *lFareTimePeriod_ptr;
00161     // Generate the fare-features object corresponding to the given
00162     // fareRule.
00163     createFareFeatures (lTimeRange, iFareRuleStruct);

```

```

00164     }
00165
00166     // //////////////////////////////////////
00167     void FareRuleGenerator::
00168     createFareFeatures (stdair::TimePeriod& iTimePeriod,
00169                        const FareRuleStruct& iFareRuleStruct) {
00170
00171         // Create the fare-features primary key.
00172         const stdair::TripType_T& lTripType =
00173             iFareRuleStruct.getTripType ();
00174         const stdair::DayDuration_T& lAdvancePurchase =
00175             iFareRuleStruct.getAdvancePurchase ();
00176         const stdair::SaturdayStay_T& lSaturdayStay =
00177             iFareRuleStruct.getSaturdayStay ();
00178         const stdair::ChangeFees_T& lChangeFees =
00179             iFareRuleStruct.getChangeFees ();
00180         const stdair::NonRefundable_T& lNonRefundable =
00181             iFareRuleStruct.getNonRefundable ();
00182         const stdair::DayDuration_T& lMinimumStay =
00183             iFareRuleStruct.getMinimumStay ();
00184         const stdair::FareFeaturesKey
00185             lFareFeaturesKey (lTripType, lAdvancePurchase, lSaturdayStay,
00186                             lChangeFees, lNonRefundable, lMinimumStay);
00187
00188         // Check that the fare features object is not already existing.
00189         // If a fare features object with the same key has not already been
00190         // created, create it and link it to the time-period object.
00191         stdair::FareFeatures* lFareFeatures_ptr = stdair::BomManager::
00192             getObjectPtr<stdair::FareFeatures> (iTimePeriod,
00193                                                lFareFeaturesKey.toString());
00194         if (lFareFeatures_ptr == NULL) {
00195             lFareFeatures_ptr = &stdair::FacBom<stdair::FareFeatures>::instance().
00196                 create (lFareFeaturesKey);
00197             assert(lFareFeatures_ptr != NULL);
00198             stdair::FacBomManager::addToListAndMap (iTimePeriod,
00199                                                    *lFareFeatures_ptr);
00200             stdair::FacBomManager::linkWithParent (iTimePeriod,
00201                                                    *lFareFeatures_ptr);
00202         }
00203         // Sanity check.
00204         assert(lFareFeatures_ptr != NULL);
00205
00206         stdair::FareFeatures& lFareFeatures = *lFareFeatures_ptr;
00207         // Generate the airline-class list object corresponding to the
00208         // given fareRule
00209         createAirlineClassList (lFareFeatures, iFareRuleStruct);
00210     }
00211 }
00212
00213 // //////////////////////////////////////
00214 void FareRuleGenerator::
00215 createAirlineClassList (stdair::FareFeatures& iFareFeatures,
00216                        const FareRuleStruct& iFareRuleStruct) {
00217
00218     // Create the AirlineClassList primary key.
00219     const unsigned int lAirlineListSize =
00220         iFareRuleStruct.getAirlineListSize();
00221     const unsigned int lClassCodeListSize =
00222         iFareRuleStruct.getClassCodeListSize();
00223     assert (lAirlineListSize == lClassCodeListSize);
00224     const stdair::AirlineClassListKey
00225         lAirlineClassListKey (iFareRuleStruct.getAirlineList(),
00226                               iFareRuleStruct.getClassCodeList());
00227     const stdair::Fare_T& lFare = iFareRuleStruct.getFare ();
00228
00229     // Create the airline class list object and link it to the fare features
00230     // object.
00231     stdair::AirlineClassList* lAirlineClassList_ptr =
00232         &stdair::FacBom<stdair::AirlineClassList>::instance().
00233             create (lAirlineClassListKey);
00234     lAirlineClassList_ptr->setFare(lFare);
00235     stdair::FacBomManager::addToListAndMap (iFareFeatures,
00236                                             *lAirlineClassList_ptr);
00237     stdair::FacBomManager::linkWithParent (iFareFeatures,

```



```

00238                                     *lAirlineClassList_ptr);
00239     }
00240
00241 }
00242

```

25.41 simfqt/command/FareRuleGenerator.hpp File Reference

```

#include <stdair/command/CmdAbstract.hpp> #include <simfqt/-
SIMFQT_Types.hpp>

```

Classes

- class [SIMFQT::FareRuleGenerator](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

25.42 FareRuleGenerator.hpp

```

00001 #ifndef __SIMFQT_CMD_FARERULEGENERATOR_HPP
00002 #define __SIMFQT_CMD_FARERULEGENERATOR_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/command/CmdAbstract.hpp>
00009 // Simfqt
00010 #include <simfqt/SIMFQT_Types.hpp>
00011
00012 // Forward declarations
00013 namespace stdair {
00014     class BomRoot;
00015     class FareRule;
00016     class AirportPair;
00017     class DatePeriod;
00018     class PosChannel;
00019     class TimePeriod;
00020     class FareFeatures;
00021     class AirlineClassList;
00022 }
00023
00024 namespace SIMFQT {
00025
00026     // Forward declarations
00027     struct FareRuleStruct;
00028     namespace FareParserHelper {
00029         struct doEndFare;
00030     }
00031
00032     class FareRuleGenerator : public stdair::CmdAbstract {
00033
00034         // Only the following class may use methods of FareGenerator.
00035         // Indeed, as those methods build the BOM, it is not good to expose
00036

```

```

00037     // them public.
00038     friend class FareFileParser;
00039     friend struct FareParserHelper::doEndFare;
00040     friend class FareParser;
00041
00042     private:
00043
00052         static void createAirportPair (stdair::BomRoot&,
00053                                         const FareRuleStruct&);
00054
00063         static void createDateRange (stdair::AirportPair&,
00064                                       const FareRuleStruct&);
00065
00074         static void createPOSChannel (stdair::DatePeriod&,
00075                                       const FareRuleStruct&);
00076
00085         static void createTimeRange (stdair::PosChannel&,
00086                                       const FareRuleStruct&);
00087
00096         static void createFareFeatures (stdair::TimePeriod&,
00097                                         const FareRuleStruct&);
00098
00107         static void createAirlineClassList (stdair::FareFeatures&,
00108                                              const FareRuleStruct&);
00109
00110
00111     };
00112 };
00113
00114 }
00115 #endif // __SIMFQT_CMD_FARERULEGENERATOR_HPP

```

25.43 simfqt/config/simfqt-paths.hpp File Reference

Defines

- #define [PACKAGE](#) "simfqt"
- #define [PACKAGE_NAME](#) "SIMFQT"
- #define [PACKAGE_VERSION](#) "0.1.3"
- #define [PREFIXDIR](#) "/usr"
- #define [EXEC_PREFIX](#) "/usr"
- #define [BINDIR](#) "/usr/bin"
- #define [LIBDIR](#) "/usr/lib"
- #define [LIBEXECDIR](#) "/usr/libexec"
- #define [SBINDIR](#) "/usr/sbin"
- #define [SYSCONFDIR](#) "/usr/etc"
- #define [INCLUDEDIR](#) "/usr/include"
- #define [DATAROOTDIR](#) "/usr/share"
- #define [DATADIR](#) "/usr/share"
- #define [DOCDIR](#) "/usr/share/doc/simfqt-0.1.3"
- #define [MANDIR](#) "/usr/share/man"
- #define [INFODIR](#) "/usr/share/info"
- #define [HTMLDIR](#) "/usr/share/doc/simfqt-0.1.3/html"
- #define [PDFDIR](#) "/usr/share/doc/simfqt-0.1.3/html"
- #define [STDAIR_SAMPLE_DIR](#) "/usr/share/stdair/samples"

25.43.1 Define Documentation

25.43.1.1 `#define PACKAGE "simfqt"`

Definition at line 4 of file [simfqt-paths.hpp](#).

25.43.1.2 `#define PACKAGE_NAME "SIMFQT"`

Definition at line 5 of file [simfqt-paths.hpp](#).

Referenced by [readConfiguration\(\)](#).

25.43.1.3 `#define PACKAGE_VERSION "0.1.3"`

Definition at line 6 of file [simfqt-paths.hpp](#).

Referenced by [readConfiguration\(\)](#).

25.43.1.4 `#define PREFIXDIR "/usr"`

Definition at line 7 of file [simfqt-paths.hpp](#).

Referenced by [readConfiguration\(\)](#).

25.43.1.5 `#define EXEC_PREFIX "/usr"`

Definition at line 8 of file [simfqt-paths.hpp](#).

25.43.1.6 `#define BINDIR "/usr/bin"`

Definition at line 9 of file [simfqt-paths.hpp](#).

25.43.1.7 `#define LIBDIR "/usr/lib"`

Definition at line 10 of file [simfqt-paths.hpp](#).

25.43.1.8 `#define LIBEXECDIR "/usr/libexec"`

Definition at line 11 of file [simfqt-paths.hpp](#).

25.43.1.9 `#define SBINDIR "/usr/sbin"`

Definition at line 12 of file [simfqt-paths.hpp](#).

25.43.1.10 `#define SYSCONFDIR "/usr/etc"`

Definition at line 13 of file [simfqt-paths.hpp](#).

25.43.1.11 `#define INCLUDEDIR "/usr/include"`

Definition at line 14 of file [simfqt-paths.hpp](#).

25.43.1.12 `#define DATAROOTDIR "/usr/share"`

Definition at line 15 of file [simfqt-paths.hpp](#).

25.43.1.13 `#define DATADIR "/usr/share"`

Definition at line 16 of file [simfqt-paths.hpp](#).

25.43.1.14 `#define DOCDIR "/usr/share/doc/simfqt-0.1.3"`

Definition at line 17 of file [simfqt-paths.hpp](#).

25.43.1.15 `#define MANDIR "/usr/share/man"`

Definition at line 18 of file [simfqt-paths.hpp](#).

25.43.1.16 `#define INFODIR "/usr/share/info"`

Definition at line 19 of file [simfqt-paths.hpp](#).

25.43.1.17 `#define HTMLDIR "/usr/share/doc/simfqt-0.1.3/html"`

Definition at line 20 of file [simfqt-paths.hpp](#).

25.43.1.18 `#define PDFDIR "/usr/share/doc/simfqt-0.1.3/html"`

Definition at line 21 of file [simfqt-paths.hpp](#).

25.43.1.19 `#define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"`

Definition at line 22 of file [simfqt-paths.hpp](#).

25.44 simfqt-paths.hpp

```
00001 #ifndef __SIMFQT_PATHS_HPP__
00002 #define __SIMFQT_PATHS_HPP__
00003
00004 #define PACKAGE "simfqt"
00005 #define PACKAGE_NAME "SIMFQT"
00006 #define PACKAGE_VERSION "0.1.3"
00007 #define PREFIXDIR "/usr"
00008 #define EXEC_PREFIX "/usr"
00009 #define BINDIR "/usr/bin"
00010 #define LIBDIR "/usr/lib"
00011 #define LIBEXECDIR "/usr/libexec"
00012 #define SBINDIR "/usr/sbin"
00013 #define SYSCONFDIR "/usr/etc"
00014 #define INCLUDEDIR "/usr/include"
00015 #define DATAROOTDIR "/usr/share"
00016 #define DATADIR "/usr/share"
00017 #define DOCDIR "/usr/share/doc/simfqt-0.1.3"
00018 #define MANDIR "/usr/share/man"
00019 #define INFODIR "/usr/share/info"
00020 #define HTMLDIR "/usr/share/doc/simfqt-0.1.3/html"
00021 #define PDFDIR "/usr/share/doc/simfqt-0.1.3/html"
00022 #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"
00023
00024 #endif // __SIMFQT_PATHS_HPP__
```

25.45 simfqt/factory/FacSimfqtServiceContext.cpp File Reference

```
#include <cassert> #include <stdair/service/FacSupervisor.-
hpp> #include <simfqt/factory/FacSimfqtServiceContext.-
hpp> #include <simfqt/service/SIMFQT_ServiceContext.-
hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.46 FacSimfqtServiceContext.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/service/FacSupervisor.hpp>
00008 // SimFQT
00009 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00010 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00011
00012 namespace SIMFQT {
00013
00014     FacSimfqtServiceContext* FacSimfqtServiceContext::_instance = NULL;
00015
00016     // //////////////////////////////////////
00017     FacSimfqtServiceContext::~FacSimfqtServiceContext() {
00018         _instance = NULL;
00019     }
00020
00021     // //////////////////////////////////////
00022     FacSimfqtServiceContext& FacSimfqtServiceContext::instance() {
00023
00024         if (_instance == NULL) {
00025             _instance = new FacSimfqtServiceContext();
00026             assert (_instance != NULL);
00027
00028             stdair::FacSupervisor::instance().registerServiceFactory (_instance);
00029         }
00030         return *_instance;
00031     }
00032
00033     // //////////////////////////////////////
00034     SIMFQT_ServiceContext& FacSimfqtServiceContext::create() {
00035         SIMFQT_ServiceContext* aServiceContext_ptr = NULL;
00036
00037         aServiceContext_ptr = new SIMFQT_ServiceContext();
00038         assert (aServiceContext_ptr != NULL);
00039
00040         // The new object is added to the Bom pool
00041         _pool.push_back (aServiceContext_ptr);
00042
00043         return *aServiceContext_ptr;
00044     }
00045
00046 }
```

25.47 simfqt/factory/FacSimfqtServiceContext.hpp File Reference

```
#include <string>    #include <stdair/stdair_basic_types.-
hpp> #include <stdair/service/FacServiceAbstract.hpp>
```

Classes

- class [SIMFQT::FacSimfqtServiceContext](#)
Factory for the service context.

Namespaces

- namespace [SIMFQT](#)

25.48 FacSimfqtServiceContext.hpp

```
00001 #ifndef __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/service/FacServiceAbstract.hpp>
00012
00013 namespace SIMFQT {
00014
00016     class SIMFQT_ServiceContext;
00017
00018
00022     class FacSimfqtServiceContext : public stdair::FacServiceAbstract {
00023     public:
00024
00031         static FacSimfqtServiceContext& instance();
00032
00039         ~FacSimfqtServiceContext();
00040
00048         SIMFQT_ServiceContext& create();
00049
00050
00051     protected:
00057         FacSimfqtServiceContext() {}
00058
00059
00060     private:
00064         static FacSimfqtServiceContext* _instance;
00065     };
00066
00067 }
00068 #endif // __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
```

25.49 simfqt/service/SIMFQT_Service.cpp File Reference

```
#include <cassert>    #include <boost/make_shared.hpp> ×
#include <stdair/basic/BasChronometer.hpp> #include <stdair/bom/-
```

```
BomDisplay.hpp> #include <stdair/bom/TravelSolutionStruct.-
hpp> #include <stdair/bom/BookingRequestStruct.hpp> x
#include <stdair/service/Logger.hpp> #include <stdair/-
STDAIR_Service.hpp> #include <simfqt/basic/BasConst_S-
IMFQT_Service.hpp> #include <simfqt/factory/FacSimfqt-
ServiceContext.hpp> #include <simfqt/command/FareParser.-
hpp> #include <simfqt/command/FareQuoter.hpp> #include
<simfqt/service/SIMFQT_ServiceContext.hpp> #include <simfqt/-
SIMFQT_Service.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.50 SIMFQT_Service.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // Boost
00007 #include <boost/make_shared.hpp>
00008 // StdAir
00009 #include <stdair/basic/BasChronometer.hpp>
00010 #include <stdair/bom/BomDisplay.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/BookingRequestStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 #include <stdair/STDAIR_Service.hpp>
00015 // Simfqt
00016 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00017 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00018 #include <simfqt/command/FareParser.hpp>
00019 #include <simfqt/command/FareQuoter.hpp>
00020 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00021 #include <simfqt/SIMFQT_Service.hpp>
00022
00023 namespace SIMFQT {
00024
00025 // //////////////////////////////////////
00026 SIMFQT_Service::SIMFQT_Service() : _simfqtServiceContext (NULL) {
00027     assert (false);
00028 }
00029
00030 // //////////////////////////////////////
00031 SIMFQT_Service::SIMFQT_Service (const SIMFQT_Service& iService) {
00032     assert (false);
00033 }
00034
00035 // //////////////////////////////////////
00036 SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams)
00037 : _simfqtServiceContext (NULL) {
00038
00039     // Initialise the STDAIR service handler
00040     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00041         initStdAirService (iLogParams);
00042
00043     // Initialise the service context
00044     initServiceContext();
00045
00046     // Add the StdAir service context to the SIMFQT service context
00047     // \note SIMFQT owns the STDAIR service resources here.
00048     const bool ownStdairService = true;
```

```

00049     addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00050
00051     // Initialise the (remaining of the) context
00052     initSimfqtService();
00053 }
00054
00055 // //////////////////////////////////////
00056 SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams,
00057                                const stdair::BasDBParams& iDBParams)
00058     : _simfqtServiceContext (NULL) {
00059
00060     // Initialise the STDAIR service handler
00061     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00062         initStdAirService (iLogParams, iDBParams);
00063
00064     // Initialise the service context
00065     initServiceContext();
00066
00067     // Add the StdAir service context to the SIMFQT service context
00068     // \note SIMFQT owns the STDAIR service resources here.
00069     const bool ownStdairService = true;
00070     addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00071
00072     // Initialise the (remaining of the) context
00073     initSimfqtService();
00074 }
00075
00076 // //////////////////////////////////////
00077 SIMFQT_Service::
00078 SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr)
00079     : _simfqtServiceContext (NULL) {
00080
00081     // Initialise the service context
00082     initServiceContext();
00083
00084     // Store the STDAIR service object within the (SIMFQT) service context
00085     // \note Simfqt does not own the STDAIR service resources here.
00086     const bool doesNotOwnStdairService = false;
00087     addStdAirService (ioSTDAIR_Service_ptr, doesNotOwnStdairService);
00088
00089     // Initialise the context
00090     initSimfqtService();
00091 }
00092
00093 // //////////////////////////////////////
00094 SIMFQT_Service::~SIMFQT_Service() {
00095     // Delete/Clean all the objects from memory
00096     finalise();
00097 }
00098
00099 // //////////////////////////////////////
00100 void SIMFQT_Service::finalise() {
00101     assert (_simfqtServiceContext != NULL);
00102     // Reset the (Boost.)Smart pointer pointing on the STDAIR_Service object.
00103     _simfqtServiceContext->reset();
00104 }
00105
00106 // //////////////////////////////////////
00107 void SIMFQT_Service::initServiceContext() {
00108     // Initialise the service context
00109     SIMFQT_ServiceContext& lSIMFQT_ServiceContext =
00110         FacSimfqtServiceContext::instance().create();
00111     _simfqtServiceContext = &lSIMFQT_ServiceContext;
00112 }
00113
00114 // //////////////////////////////////////
00115 void SIMFQT_Service::
00116 addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr,
00117                  const bool iOwnStdairService) {
00118
00119     // Retrieve the SimFQT service context
00120     assert (_simfqtServiceContext != NULL);
00121     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00122

```



```

00123     // Store the STDAIR service object within the (SimFQT) service context
00124     lSIMFQT_ServiceContext.setSTDAIR_Service (ioSTDAIR_Service_ptr,
00125                                             iOwnStdairService);
00126 }
00127
00128 // //////////////////////////////////////
00129 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00130 initStdAirService (const stdair::BasLogParams& iLogParams,
00131                  const stdair::BasDBParams& iDBParams) {
00132
00133     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00134         boost::make_shared<stdair::STDAIR_Service> (iLogParams, iDBParams);
00140     assert (lSTDAIR_Service_ptr != NULL);
00142
00143     return lSTDAIR_Service_ptr;
00144 }
00145
00146 // //////////////////////////////////////
00147 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00148 initStdAirService (const stdair::BasLogParams& iLogParams) {
00149
00150     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00151         boost::make_shared<stdair::STDAIR_Service> (iLogParams);
00158     assert (lSTDAIR_Service_ptr != NULL);
00159
00160     return lSTDAIR_Service_ptr;
00161 }
00162
00163 // //////////////////////////////////////
00164 void SIMFQT_Service::initSimfqtService() {
00165     // Do nothing at this stage. A sample BOM tree may be built by
00166     // calling the buildSampleBom() method
00167 }
00168
00169 // //////////////////////////////////////
00170 void SIMFQT_Service::
00171 parseAndLoad (const FareFilePath& iFareFilename) {
00172
00173     // Retrieve the BOM root object.
00174     assert (_simfqtServiceContext != NULL);
00175     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00176     stdair::STDAIR_Service& lSTDAIR_Service =
00177         lSIMFQT_ServiceContext.getSTDAIR_Service();
00178     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00179
00180     // Initialise the airline inventories
00181     FareParser::fareRuleGeneration (iFareFilename, lBomRoot);
00182 }
00183
00184 // //////////////////////////////////////
00185 void SIMFQT_Service::buildSampleBom() {
00186
00187     // Retrieve the SimFQT service context
00188     if (_simfqtServiceContext == NULL) {
00189         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00190                                                         "has not been initialised");
00191     }
00192     assert (_simfqtServiceContext != NULL);
00193
00194     // Retrieve the SimFQT service context and whether it owns the Stdair
00195     // service
00196     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00197     const bool doesOwnStdairService =
00198         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00199
00200     // Retrieve the StdAir service object from the (SimFQT) service context
00201     stdair::STDAIR_Service& lSTDAIR_Service =
00202         lSIMFQT_ServiceContext.getSTDAIR_Service();
00203
00208     if (doesOwnStdairService == true) {
00209         //
00210         lSTDAIR_Service.buildSampleBom();
00211     }

```

```

00212     }
00228 }
00229
00230 // //////////////////////////////////////
00231 stdair::BookingRequestStruct SIMFQT_Service::buildBookingRequest(const bool
isForCRS) {
00232
00233     // Retrieve the SIMFQT service context
00234     if (_simfqtServiceContext == NULL) {
00235         throw stdair::NonInitialisedServiceException ("The Simfqt service has not
"
00236                                                     "been initialised");
00237     }
00238     assert (_simfqtServiceContext != NULL);
00239
00240     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00241
00242     // Retrieve the STDAIR service object from the (Simfqt) service context
00243     stdair::STDAIR_Service& lSTDAIR_Service =
00244         lSIMFQT_ServiceContext.getSTDAIR_Service();
00245
00246     // Delegate the BOM building to the dedicated service
00247     stdair::BookingRequestStruct oBookingRequest =
00248         lSTDAIR_Service.buildSampleBookingRequest (isForCRS);
00249
00250     return oBookingRequest;
00251 }
00252
00253 // //////////////////////////////////////
00254 void SIMFQT_Service::
00255 buildSampleTravelSolutions(stdair::TravelSolutionList_T& ioTravelSolutionList
){
00256
00257     // Retrieve the SIMFQT service context
00258     if (_simfqtServiceContext == NULL) {
00259         throw stdair::NonInitialisedServiceException ("The Simfqt service has not
"
00260                                                     "been initialised");
00261     }
00262     assert (_simfqtServiceContext != NULL);
00263
00264     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00265
00266     // Retrieve the STDAIR service object from the (Simfqt) service context
00267     stdair::STDAIR_Service& lSTDAIR_Service =
00268         lSIMFQT_ServiceContext.getSTDAIR_Service();
00269
00270     // Delegate the BOM building to the dedicated service
00271     lSTDAIR_Service.buildSampleTravelSolutionForPricing (ioTravelSolutionList);
00272 }
00273
00274 // //////////////////////////////////////
00275 std::string SIMFQT_Service::csvDisplay() const {
00276
00277     // Retrieve the SIMFQT service context
00278     if (_simfqtServiceContext == NULL) {
00279         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00280                                                     "has not been initialised")
00281     }
00282
00283     assert (_simfqtServiceContext != NULL);
00284
00285     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00286
00287     // Retrieve the STDAIR service object from the (SimFQT) service context
00288     stdair::STDAIR_Service& lSTDAIR_Service =
00289         lSIMFQT_ServiceContext.getSTDAIR_Service();
00290
00291     // Get the root of the BOM tree, on which all of the other BOM objects
00292     // are attached
00293     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00294
00295     // Delegate the BOM display to the dedicated service

```

```

00296     std::ostringstream oCSVStr;
00297     stdair::BomDisplay::csvSimFQTAirRACDisplay (oCSVStr, lBomRoot);
00298     return oCSVStr.str();
00299 }
00300
00301 // //////////////////////////////////////
00302 std::string SIMFQT_Service::
00303 csvDisplay (const stdair::TravelSolutionList_T& ioTravelSolutionList) const {
00304
00305     // Retrieve the Simfqt service context
00306     if (_simfqtServiceContext == NULL) {
00307         throw stdair::NonInitialisedServiceException ("The Simfqt service has not
00308 "
00309 "been initialised");
00310     }
00311     assert (_simfqtServiceContext != NULL);
00312
00313     // Retrieve the Simfqt service context
00314     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00315
00316     // Retrieve the STDAIR service object from the (Simfqt) service context
00317     stdair::STDAIR_Service& lSTDAIR_Service =
00318         lSIMFQT_ServiceContext.getSTDAIR_Service();
00319
00320     // Delegate the BOM building to the dedicated service
00321     return lSTDAIR_Service.csvDisplay (ioTravelSolutionList);
00322 }
00323
00324 // //////////////////////////////////////
00325 std::string SIMFQT_Service::
00326 csvDisplay (const stdair::AirportCode_T& iOrigin,
00327             const stdair::AirportCode_T& iDestination,
00328             const stdair::Date_T& iDepartureDate) const {
00329
00330     // Retrieve the SIMFQT service context
00331     if (_simfqtServiceContext == NULL) {
00332         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00333 "has not been initialised")
00334     };
00335     }
00336     assert (_simfqtServiceContext != NULL);
00337
00338     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00339
00340     // Retrieve the STDAIR service object from the (SIMFQT) service context
00341     stdair::STDAIR_Service& lSTDAIR_Service =
00342         lSIMFQT_ServiceContext.getSTDAIR_Service();
00343
00344     // Delegate the BOM display to the dedicated service
00345     return lSTDAIR_Service.csvDisplay (iOrigin, iDestination,
00346                                         iDepartureDate);
00347 }
00348
00349 // //////////////////////////////////////
00350 std::string SIMFQT_Service::list() const {
00351
00352     // Retrieve the SIMFQT service context
00353     if (_simfqtServiceContext == NULL) {
00354         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00355 "has not been initialised")
00356     };
00357     }
00358     assert (_simfqtServiceContext != NULL);
00359
00360     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00361
00362     // Retrieve the STDAIR service object from the (SIMFQT) service context
00363     stdair::STDAIR_Service& lSTDAIR_Service =
00364         lSIMFQT_ServiceContext.getSTDAIR_Service();
00365
00366     // Delegate the BOM display to the dedicated service
00367     return lSTDAIR_Service.listAirportPairDateRange ();
00368 }

```

```

00367 // //////////////////////////////////////
00368 bool SIMFQT_Service::
00369 check (const stdair::AirportCode_T& iOrigin,
00370        const stdair::AirportCode_T& iDestination,
00371        const stdair::Date_T& iDepartureDate) const {
00372     std::ostringstream oFlightListStr;
00373
00374     if (_simfqtServiceContext == NULL) {
00375         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00376                                                         "has not been initialised")
00377     }
00378     assert (_simfqtServiceContext != NULL);
00379     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00380
00381     // Retrieve the STDAIR service object from the (SIMFQT) service context
00382     stdair::STDAIR_Service& lSTDAIR_Service =
00383         lSIMFQT_ServiceContext.getSTDAIR_Service();
00384
00385     // Delegate the BOM display to the dedicated service
00386     return lSTDAIR_Service.check (iOrigin, iDestination, iDepartureDate);
00387 }
00388
00389 // //////////////////////////////////////
00390 void SIMFQT_Service::
00391 quotePrices (const stdair::BookingRequestStruct& iBookingRequest,
00392             stdair::TravelSolutionList_T& ioTravelSolutionList) {
00393
00394     // Retrieve the Simfqt service context
00395     if (_simfqtServiceContext == NULL) {
00396         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00397                                                         "has not been initialised")
00398     }
00399     assert (_simfqtServiceContext != NULL);
00400
00401     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00402
00403     // Retrieve the StdAir service context
00404     stdair::STDAIR_Service& lSTDAIR_Service =
00405         lSIMFQT_ServiceContext.getSTDAIR_Service();
00406
00407     // Get the root of the BOM tree, on which all of the other BOM objects
00408     // will be attached
00409     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00410
00411     // Delegate the action to the dedicated command
00412     stdair::BasChronometer lFareQuoteRetrievalChronometer;
00413     lFareQuoteRetrievalChronometer.start();
00414     FareQuoter::priceQuote (iBookingRequest, ioTravelSolutionList, lBomRoot);
00415
00416     // DEBUG
00417     const double lFareQuoteRetrievalMeasure =
00418         lFareQuoteRetrievalChronometer.elapsed();
00419     STDAIR_LOG_DEBUG ("Fare Quote retrieving: " << lFareQuoteRetrievalMeasure
00420                     << " - " << lSIMFQT_ServiceContext.display());
00421 }
00422
00423 }

```

25.51 simfqt/service/SIMFQT_ServiceContext.cpp File Reference

```

#include <cassert> #include <sstream> #include <simfqt/basic/-
BasConst_SIMFQT_Service.hpp> #include <simfqt/service/SI-
MFQT_ServiceContext.hpp>

```

Namespaces

- namespace `SIMFQT`

25.52 SIMFQT_ServiceContext.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // SimFQT
00008 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00009 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00010
00011 namespace SIMFQT {
00012
00013 // //////////////////////////////////////
00014 SIMFQT_ServiceContext::SIMFQT_ServiceContext() : _ownStdairService (false) {
00015 }
00016
00017 // //////////////////////////////////////
00018 SIMFQT_ServiceContext::SIMFQT_ServiceContext (const SIMFQT_ServiceContext&) {
00019     assert (false);
00020 }
00021
00022 // //////////////////////////////////////
00023 SIMFQT_ServiceContext::~SIMFQT_ServiceContext() {
00024 }
00025
00026 // //////////////////////////////////////
00027 stdair::STDAIR_Service& SIMFQT_ServiceContext::getSTDAIR_Service() const {
00028     assert (_stdairService != NULL);
00029     return *_stdairService;
00030 }
00031
00032 // //////////////////////////////////////
00033 const std::string SIMFQT_ServiceContext::shortDisplay() const {
00034     std::ostringstream ostr;
00035     ostr << "SIMFQT_ServiceContext -- Owns StdAir service: "
00036         << _ownStdairService;
00037     return ostr.str();
00038 }
00039
00040 // //////////////////////////////////////
00041 const std::string SIMFQT_ServiceContext::display() const {
00042     std::ostringstream ostr;
00043     ostr << shortDisplay();
00044     return ostr.str();
00045 }
00046
00047 // //////////////////////////////////////
00048 const std::string SIMFQT_ServiceContext::describe() const {
00049     return shortDisplay();
00050 }
00051
00052 // //////////////////////////////////////
00053 void SIMFQT_ServiceContext::reset() {
00054     if (_ownStdairService == true) {
00055         _stdairService.reset();
00056     }
00057 }
00058
00059 }

```

25.53 simfqt/service/SIMFQT_ServiceContext.hpp File Reference

```
#include <string> #include <stdair/stdair_service_types.-
hpp> #include <stdair/service/ServiceAbstract.hpp> #include
<simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::SIMFQT_ServiceContext](#)
Class holding the context of the SimFQT services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.54 SIMFQT_ServiceContext.hpp

```
00001 #ifndef __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_service_types.hpp>
00011 #include <stdair/service/ServiceAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00016 namespace stdair {
00017     class STDAIR_Service;
00018 }
00019
00020 namespace SIMFQT {
00021
00025     class SIMFQT_ServiceContext : public stdair::ServiceAbstract {
00031     friend class SIMFQT_Service;
00032     friend class FacSimfqtServiceContext;
00033
00034     private:
00035         // ////////// Getters //////////
00039         stdair::STDAIR_ServicePtr_T getSTDAIR_ServicePtr() const {
00040             return _stdairService;
00041         }
00042
00046         stdair::STDAIR_Service& getSTDAIR_Service() const;
00047
00051         const bool getOwnStdairServiceFlag() const {
00052             return _ownStdairService;
00053         }
00054
00055     private:
00057         // ////////// Setters //////////
00061         void setSTDAIR_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00062                                 const bool iOwnStdairService) {
00063             _stdairService = ioSTDAIR_ServicePtr;
```

```

00064     _ownStdairService = iOwnStdairService;
00065 }
00066
00070 void reset();
00071
00072
00073 private:
00074     // ////////// Display Methods //////////
00078     const std::string shortDisplay() const;
00079
00083     const std::string display() const;
00084
00088     const std::string describe() const;
00089
00090
00091 private:
00092     // ////////// Construction / initialisation //////////
00096     SIMFQT_ServiceContext (const FareQuoteID_T&);
00097
00101     SIMFQT_ServiceContext ();
00102
00106     SIMFQT_ServiceContext (const SIMFQT_ServiceContext&);
00107
00111     ~SIMFQT_ServiceContext ();
00112
00113
00114 private:
00115     // ////////// Children //////////
00119     stdair::STDAIR_ServicePtr_T _stdairService;
00120
00124     bool _ownStdairService;
00125 };
00126
00127 }
00128 #endif // __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP

```

25.55 simfqt/SIMFQT_Service.hpp File Reference

```

#include <stdair/stdair_basic_types.hpp> #include <stdair/stdair-
_service_types.hpp> #include <stdair/bom/TravelSolution-
Types.hpp> #include <simfqt/SIMFQT_Types.hpp>

```

Classes

- class [SIMFQT::SIMFQT_Service](#)
Interface for the [SIMFQT](#) Services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.56 SIMFQT_Service.hpp

```

00001 #ifndef __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00003

```

```

00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/stdair_service_types.hpp>
00010 #include <stdair/bom/TravelSolutionTypes.hpp>
00011 // SimFQT
00012 #include <simfqt/SIMFQT_Types.hpp>
00013
00015 namespace stdair {
00016     class STDAIR_Service;
00017     struct BookingRequestStruct;
00018     struct BasLogParams;
00019     struct BasDBParams;
00020 }
00021
00022 namespace SIMFQT {
00023
00025     class SIMFQT_ServiceContext;
00026
00027     class SIMFQT_Service {
00031     public:
00032
00033         // ////////////////////////////////// Constructors and Destructors //////////////////////////////////
00034         SIMFQT_Service (const stdair::BasLogParams&);
00046
00047         SIMFQT_Service (const stdair::BasLogParams&, const stdair::BasDBParams&);
00060
00061         SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr);
00077
00078         void parseAndLoad (const FareFilePath& iFareFilename);
00087
00088         ~SIMFQT_Service();
00092
00093
00094     public:
00095         // ////////////////////////////////// Business Methods //////////////////////////////////
00096         void buildSampleBom();
00108
00109         stdair::BookingRequestStruct buildBookingRequest(const bool isForCRS =
00116         false);
00117
00135         void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
00136
00146         void quotePrices (const stdair::BookingRequestStruct&,
00147             stdair::TravelSolutionList_T&);
00148
00149     public:
00150         // ////////////////////////////////// Display support methods //////////////////////////////////
00151         std::string csvDisplay() const;
00159
00160         std::string csvDisplay (const stdair::TravelSolutionList_T& const;
00168
00169         std::string csvDisplay (const stdair::AirportCode_T& ioOrigin,
00182         const stdair::AirportCode_T& ioDestination,
00183         const stdair::Date_T& ioDepartureDate) const;
00184
00185         std::string list() const;
00194
00195         bool check (const stdair::AirportCode_T& ioOrigin,
00208         const stdair::AirportCode_T& ioDestination,
00209         const stdair::Date_T& ioDepartureDate) const;
00210
00211     private:
00212         // ////////////////////////////////// Construction and Destruction helper methods //////////////////////////////////
00213         SIMFQT_Service();
00217
00218         SIMFQT_Service (const SIMFQT_Service&);
00222
00223         stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&,
00233         const stdair::BasDBParams&);
00234

```



```

00235
00244     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&)
;
00245
00254     void addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00255                           const bool iOwnStdairService);
00256
00261     void initServiceContext();
00262
00269     void initSimfqtService();
00270
00279     void initSimfqtService (const FareFilePath& iFareFilename);
00280
00284     void finalise();
00285
00286
00287     private:
00288         // ////////// Service Context //////////
00292         SIMFQT_ServiceContext* _simfqtServiceContext;
00293     };
00294 }
00295 #endif // __SIMFQT_SVC_SIMFQT_SERVICE_HPP

```

25.57 simfqt/SIMFQT_Types.hpp File Reference

```

#include <vector> #include <string> #include <boost/shared-
_ptr.hpp> #include <stdair/stdair_exceptions.hpp> #include
<stdair/stdair_file.hpp>

```

Classes

- class [SIMFQT::FareFileParsingFailedException](#)
- class [SIMFQT::AirportPairNotFoundException](#)
- class [SIMFQT::PosOrChannelNotFoundException](#)
- class [SIMFQT::FlightDateNotFoundException](#)
- class [SIMFQT::FlightTimeNotFoundException](#)
- class [SIMFQT::FeaturesNotFoundException](#)
- class [SIMFQT::AirlineNotFoundException](#)
- class [SIMFQT::FareInputFileNotFoundException](#)
- class [SIMFQT::QuotingException](#)
- class [SIMFQT::FareFilePath](#)

Namespaces

- namespace [SIMFQT](#)

Typedefs

- typedef unsigned int [SIMFQT::FareQuoteID_T](#)
- typedef boost::shared_ptr < SIMFQT_Service > [SIMFQT::SIMFQT_ServicePtr_T](#)

25.58 SIMFQT_Types.hpp

```

00001 #ifndef __SIMFQT_SIMFQT_TYPES_HPP
00002 #define __SIMFQT_SIMFQT_TYPES_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <vector>
00009 #include <string>
00010 // Boost
00011 #include <boost/shared_ptr.hpp>
00012 // StdAir
00013 #include <stdair/stdair_exceptions.hpp>
00014 #include <stdair/stdair_file.hpp>
00015
00016 namespace SIMFQT {
00017
00018 // Forward declarations
00019 class SIMFQT_Service;
00020
00021
00022 // /////////// Exceptions ///////////
00026 class FareFileParsingFailedException
00027 : public stdair::ParsingFileFailedException {
00028 public:
00032   FareFileParsingFailedException (const std::string& iWhat)
00033   : stdair::ParsingFileFailedException (iWhat) {}
00034 };
00035
00039 class AirportPairNotFoundException : public stdair::ObjectNotFoundException {
00040 public:
00044   AirportPairNotFoundException (const std::string& iWhat)
00045   : stdair::ObjectNotFoundException (iWhat) {}
00046 };
00047
00051 class PosOrChannelNotFoundException : public stdair::ObjectNotFoundException
00052 {
00052 public:
00056   PosOrChannelNotFoundException (const std::string& iWhat)
00057   : stdair::ObjectNotFoundException (iWhat) {}
00058 };
00059
00063 class FlightDateNotFoundException : public stdair::ObjectNotFoundException {
00064 public:
00068   FlightDateNotFoundException (const std::string& iWhat)
00069   : stdair::ObjectNotFoundException (iWhat) {}
00070 };
00071
00075 class FlightTimeNotFoundException : public stdair::ObjectNotFoundException {
00076 public:
00080   FlightTimeNotFoundException (const std::string& iWhat)
00081   : stdair::ObjectNotFoundException (iWhat) {}
00082 };
00083
00087 class FeaturesNotFoundException : public stdair::ObjectNotFoundException {
00088 public:
00092   FeaturesNotFoundException (const std::string& iWhat)
00093   : stdair::ObjectNotFoundException (iWhat) {}
00094 };
00095
00099 class AirlineNotFoundException : public stdair::ObjectNotFoundException {
00100 public:
00104   AirlineNotFoundException (const std::string& iWhat)
00105   : stdair::ObjectNotFoundException (iWhat) {}
00106 };
00107
00111 class FareInputFileNotFoundException : public stdair::FileNotFoundException {
00112 public:
00116   FareInputFileNotFoundException (const std::string& iWhat)
00117   : stdair::FileNotFoundException (iWhat) {}
00118 };

```

```

00119
00123     class QuotingException : public stdair::RootException {
00124     };
00125
00126     // ////////// Files //////////
00130     class FareFilePath : public stdair::InputFilePath {
00131     public:
00135         explicit FareFilePath (const stdair::Filename_T& iFilename)
00136             : stdair::InputFilePath (iFilename) {}
00137     };
00138
00139     // ////////// Type definitions specific to SimFQT //////////
00143     typedef unsigned int FareQuoteID_T;
00144
00148     typedef boost::shared_ptr<SIMFQT_Service> SIMFQT_ServicePtr_T;
00149 }
00150 #endif // __SIMFQT_SIMFQT_TYPES_HPP

```

25.59 simfqt/ui/cmdline/simfqt.cpp File Reference

25.60 simfqt.cpp

```

00001
00005 // STL
00006 #include <cassert>
00007 #include <iostream>
00008 #include <sstream>
00009 #include <fstream>
00010 #include <string>
00011 // Boost (Extended STL)
00012 #include <boost/program_options.hpp>
00013 #include <boost/tokenizer.hpp>
00014 #include <boost/regex.hpp>
00015 // StdAir
00016 #include <stdair/basic/BasLogParams.hpp>
00017 #include <stdair/basic/BasConst_BomDisplay.hpp>
00018 #include <stdair/basic/BasDBParams.hpp>
00019 #include <stdair/basic/BasConst_DefaultObject.hpp>
00020 #include <stdair/basic/BasConst_Inventory.hpp>
00021 #include <stdair/basic/BasConst_Request.hpp>
00022 #include <stdair/service/Logger.hpp>
00023 #include <stdair/stdair_exceptions.hpp>
00024 #include <stdair/stdair_basic_types.hpp>
00025 #include <stdair/stdair_date_time_types.hpp>
00026 #include <stdair/bom/TravelSolutionStruct.hpp>
00027 #include <stdair/bom/BookingRequestStruct.hpp>
00028 #include <stdair/bom/ParsedKey.hpp>
00029 #include <stdair/bom/BomKeyManager.hpp>
00030 #include <stdair/command/CmdBomManager.hpp>
00031 // Stdair GNU Readline Wrapper
00032 #include <stdair/ui/cmdline/SReadline.hpp>
00033 // Simfqt
00034 #include <simfqt/SIMFQT_Service.hpp>
00035 #include <simfqt/config/simfqt-paths.hpp>
00036
00037
00038 // ////////// Constants //////////
00042 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt.log");
00043
00047 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00048                                                         "/fare01.csv");
00049
00054 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00055
00059 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00060
00065 typedef std::vector<std::string> TokenList_T;
00066
00070 struct Command_T {
00071     typedef enum {

```

```

00072     NOP = 0,
00073     QUIT,
00074     HELP,
00075     LIST,
00076     DISPLAY,
00077     PRICE,
00078     LAST_VALUE
00079 } Type_T;
00080 };
00081
00082 // ////////// Parsing of Options & Configuration //////////
00083 // A helper function to simplify the main part.
00084 template<class T> std::ostream& operator<< (std::ostream& os,
00085                                           const std::vector<T>& v) {
00086     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00087     return os;
00088 }
00089
00090 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00091                       stdair::Filename_T& ioFareInputFilename,
00092                       std::string& ioLogFilename) {
00093     // Default for the built-in input
00094     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00095
00096     // Declare a group of options that will be allowed only on command line
00097     boost::program_options::options_description generic ("Generic options");
00098     generic.add_options()
00099         ("prefix", "print installation prefix")
00100         ("version,v", "print version string")
00101         ("help,h", "produce help message");
00102
00103     // Declare a group of options that will be allowed both on command
00104     // line and in config file
00105     boost::program_options::options_description config ("Configuration");
00106     config.add_options()
00107         ("builtin,b",
00108          "The sample BOM tree can be either built-in or parsed from an input file.
00109          That latter must then be given with the -f/--fare option")
00110         ("fare,f",
00111          boost::program_options::value< std::string >(&ioFareInputFilename)->
00112          default_value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
00113          "(CSV) input file for the fare rules")
00114         ("log,l",
00115          boost::program_options::value< std::string >(&ioLogFilename)->
00116          default_value(K_SIMFQT_DEFAULT_LOG_FILENAME),
00117          "Filename for the logs")
00118         ;
00119
00120     // Hidden options, will be allowed both on command line and
00121     // in config file, but will not be shown to the user.
00122     boost::program_options::options_description hidden ("Hidden options");
00123     hidden.add_options()
00124         ("copyright",
00125          boost::program_options::value< std::vector<std::string> >(),
00126          "Show the copyright (license)");
00127
00128     boost::program_options::options_description cmdline_options;
00129     cmdline_options.add(generic).add(config).add(hidden);
00130
00131     boost::program_options::options_description config_file_options;
00132     config_file_options.add(config).add(hidden);
00133
00134     boost::program_options::options_description visible ("Allowed options");
00135     visible.add(generic).add(config);
00136
00137     boost::program_options::positional_options_description p;
00138     p.add ("copyright", -1);
00139
00140     boost::program_options::variables_map vm;
00141     boost::program_options::
00142         store (boost::program_options::command_line_parser (argc, argv).
00143               options (cmdline_options).positional(p).run(), vm);
00144 }
00145

```

```

00146 std::ifstream ifs ("simfqt.cfg");
00147 boost::program_options::store (parse_config_file (ifs, config_file_options),
00148                                vm);
00149 boost::program_options::notify (vm); if (vm.count ("help")) {
00150     std::cout << visible << std::endl;
00151     return K_SIMFQT_EARLY_RETURN_STATUS;
00152 }
00153
00154 if (vm.count ("version")) {
00155     std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00156     return K_SIMFQT_EARLY_RETURN_STATUS;
00157 }
00158
00159 if (vm.count ("prefix")) {
00160     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00161     return K_SIMFQT_EARLY_RETURN_STATUS;
00162 }
00163
00164 if (vm.count ("builtin")) {
00165     ioIsBuiltin = true;
00166 }
00167 const std::string isBuiltinStr = (ioIsBuiltin == true)? "yes": "no";
00168 std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00169
00170 if (ioIsBuiltin == false) {
00171
00172     // The BOM tree should be built from parsing a fare (and O&D) file
00173     if (vm.count ("fare")) {
00174         ioFareInputFilename = vm["fare"].as< std::string >();
00175         std::cout << "Input fare filename is: " << ioFareInputFilename
00176                 << std::endl;
00177     }
00178     else {
00179         // The built-in option is not selected. However, no fare file
00180         // is specified
00181         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00182                 << "options must be specified" << std::endl;
00183     }
00184 }
00185
00186 if (vm.count ("log")) {
00187     ioLogFilename = vm["log"].as< std::string >();
00188     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00189 }
00190
00191 return 0;
00192 }
00193
00194
00195 // //////////////////////////////////////
00196 void initReadline (swift::SReadline& ioInputReader) {
00197
00198     // Prepare the list of my own completers
00199     std::vector<std::string> Completers;
00200
00201     // The following is supported:
00202     // - "identifiers"
00203     // - special identifier %file - means to perform a file name completion
00204     Completers.push_back ("help");
00205     Completers.push_back ("list");
00206     Completers.push_back ("display %airport_code %airport_code %departure_date");
00207     Completers.push_back ("price %airline_code %flight_number %departure_date
00208                             %airport_code %airport_code %departure_time %booking_date %booking_time %POS
00209                             %channel% %trip_type %stay_duration");
00208     Completers.push_back ("quit");
00209
00210     // Now register the completers.
00211     // Actually it is possible to re-register another set at any time
00212     ioInputReader.RegisterCompletions (Completers);
00213 }
00214
00215 // //////////////////////////////////////
00216 Command_T::Type_T extractCommand (TokenList_T& ioTokenList) {
00217     Command_T::Type_T oCommandType = Command_T::LAST_VALUE;

```

```

00218
00219 // Interpret the user input
00220 if (ioTokenList.empty() == false) {
00221     TokenList_T::iterator itTok = ioTokenList.begin();
00222     std::string& lCommand (*itTok);
00223     boost::algorithm::to_lower (lCommand);
00224
00225     if (lCommand == "help") {
00226         oCommandType = Command_T::HELP;
00227
00228     } else if (lCommand == "list") {
00229         oCommandType = Command_T::LIST;
00230
00231     } else if (lCommand == "display") {
00232         oCommandType = Command_T::DISPLAY;
00233
00234     } else if (lCommand == "price") {
00235         oCommandType = Command_T::PRICE;
00236
00237     } else if (lCommand == "quit") {
00238         oCommandType = Command_T::QUIT;
00239
00240     }
00241
00242     // Remove the first token (the command), as the corresponding information
00243     // has been extracted in the form of the returned command type enumeration
00244     ioTokenList.erase (itTok);
00245
00246 } else {
00247     oCommandType = Command_T::NOP;
00248 }
00249
00250 return oCommandType;
00251 }
00252
00253 ///////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00254 // Re-compose a date using three strings: the year, the month and the
00255 // day. Return true if a correct date has been computed, false if not.
00256 bool retrieveDate (std::string iYearString,
00257                  std::string iMonthString,
00258                  std::string iDayString,
00259                  std::air::Date_T& ioDate) {
00260
00261     const std::string kMonthStr[12] = {"Jan", "Feb", "Mar", "Apr", "May", "Jun",
00262                                       "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"};
00263
00264     // Check the year.
00265     unsigned short lDateYear;
00266     try {
00267         lDateYear = boost::lexical_cast<unsigned short> (iYearString);
00268         if (lDateYear < 100) {
00269             lDateYear += 2000;
00270         }
00271     }
00272
00273     catch (boost::bad_lexical_cast& eCast) {
00274         std::cerr << "The year ('" << iYearString
00275                   << "') cannot be understood." << std::endl;
00276         return false;
00277     }
00278
00279     // Check the month.
00280     std::string lDateMonthStr;
00281     try {
00282         const boost::regex lMonthRegex ("^(\\d{1,2})$");
00283         const bool isMonthANumber = regex_match (iMonthString, lMonthRegex);
00284
00285         if (isMonthANumber == true) {
00286             const unsigned short lMonth =
00287                 boost::lexical_cast<unsigned short> (iMonthString);
00288             if (lMonth > 12) {
00289                 throw boost::bad_lexical_cast();
00290             }
00291         }

```

```

00292         if (lMonth != 0) {
00293             lDateMonthStr = kMonthStr[lMonth-1];
00294         } else {
00295             std::cerr << "The month ('" << iMonthString
00296                 << "') cannot be understood." << std::endl;
00297             return false;
00298         }
00299
00300     } else {
00301         if (iMonthString.size() < 3) {
00302             throw boost::bad_lexical_cast();
00303         }
00304         std::string lMonthStr1 (iMonthString.substr (0, 1));
00305         boost::algorithm::to_upper (lMonthStr1);
00306         std::string lMonthStr23 (iMonthString.substr (1, 2));
00307         boost::algorithm::to_lower (lMonthStr23);
00308         lDateMonthStr = lMonthStr1 + lMonthStr23;
00309     }
00310
00311 } catch (boost::bad_lexical_cast& eCast) {
00312     std::cerr << "The month ('" << iMonthString
00313         << "') cannot be understood." << std::endl;
00314     return false;
00315 }
00316
00317 // Check the day.
00318 unsigned short lDateDay;
00319 try {
00320
00321     lDateDay = boost::lexical_cast<unsigned short> (iDayString);
00322
00323 } catch (boost::bad_lexical_cast& eCast) {
00324     std::cerr << "The day ('" << iDayString
00325         << "') cannot be understood." << std::endl;
00326     return false;
00327 }
00328
00329 // Re-compose the date.
00330 std::ostringstream lDateStr;
00331 lDateStr << lDateYear << "-" << lDateMonthStr
00332     << "-" << lDateDay;
00333 try {
00334
00335     ioDate =
00336         boost::gregorian::from_simple_string (lDateStr.str());
00337
00338 } catch (boost::gregorian::bad_month& eCast) {
00339     std::cerr << "The month of the date ('" << lDateStr.str()
00340         << "') cannot be understood." << std::endl;
00341     return false;
00342 } catch (boost::gregorian::bad_day_of_month& eCast) {
00343     std::cerr << "The date ('" << lDateStr.str()
00344         << "') is not correct: the day of month does not exist."
00345         << std::endl;
00346     return false;
00347 } catch (boost::gregorian::bad_year& eCast) {
00348     std::cerr << "The year ('" << lDateStr.str()
00349         << "') is not correct."
00350         << std::endl;
00351     return false;
00352 }
00353
00354 return true;
00355 }
00356
00357 ///////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00358 // Re-compose a time using two strings: the hour and the minute.
00359 // Return true if a correct time has been computed, false if not.
00360 bool retrieveTime (std::string iHourString,
00361     std::string iMinuteString,
00362     std::time_t& oTime) {
00363
00364     // Check the hour
00365     unsigned short lTimeHour;

```

```

00366     try {
00367
00368         lTimeHour = boost::lexical_cast<unsigned short> (iHourString);
00369
00370     } catch (boost::bad_lexical_cast& eCast) {
00371         std::cerr << "The hour of the time ('" << iHourString
00372             << "') cannot be understood." << std::endl;
00373         return false;
00374     }
00375
00376     // Check the minutes
00377     unsigned short lTimeMinute;
00378     try {
00379
00380         lTimeMinute = boost::lexical_cast<unsigned short> (iMinuteString);
00381
00382     } catch (boost::bad_lexical_cast& eCast) {
00383         std::cerr << "The minute of the time ('" << iMinuteString
00384             << "') cannot be understood." << std::endl;
00385         return false;
00386     }
00387
00388
00389     // Re-compose the time
00390     std::ostringstream lTimeStr;
00391     lTimeStr << lTimeHour << ":" << lTimeMinute;
00392     oTime =
00393         boost::posix_time::duration_from_string (lTimeStr.str());
00394
00395     return true;
00396 }
00397
00398 // //////////////////////////////////////
00399 // Analyze the tokens of the 'price' command in order to construct
00400 // a travel solution list and a booking request.
00401 const stdair::BookingRequestStruct parseTravelSolutionAndBookingRequestKey
00402 (const TokenList_T& iTokenList,
00403  stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
00404  const stdair::BookingRequestStruct& ioBookingRequestStruct) {
00405
00406     TokenList_T::const_iterator iTok = iTokenList.begin();
00407
00408     if (iTok->empty() == true) {
00409
00410         std::cerr << "Wrong list of parameters. "
00411             << "The default booking request and travel solution list are
00412                 << std::endl;
00413         return ioBookingRequestStruct;
00414
00415     } else {
00416         // Parameters corresponding to the tokens.
00417         // Each parameter corresponds to one token except the dates
00418         // (three tokens) and the times (two tokens).
00419         stdair::AirlineCode_T lAirlineCode;
00420         stdair::FlightNumber_T lflightNumber;
00421         stdair::Date_T lDepartureDate;
00422         stdair::Duration_T lDepartureTime;
00423         stdair::AirportCode_T lOriginAirport;
00424         stdair::AirportCode_T lDestinationAirport;
00425         stdair::Date_T lRequestDate;
00426         stdair::Duration_T lRequestTime;
00427         stdair::CityCode_T lPOS;
00428         stdair::ChannelLabel_T lChannel;
00429         stdair::TripType_T lTripType;
00430         unsigned short lStayDuration;
00431
00432         // Read the airline code.
00433         lAirlineCode = *iTok;
00434         boost::algorithm::to_upper (lAirlineCode);
00435
00436         // Read the flight-number .
00437         ++iTok;

```



```

00439     if (itTok->empty() == false) {
00440         try {
00441             lflightNumber = boost::lexical_cast<stdair::FlightNumber_T> (*itTok);
00442         } catch (boost::bad_lexical_cast& eCast) {
00443             std::cerr << "The flight number ('" << *itTok
00444                 << "') cannot be understood."
00445                 << std::endl;
00446             return ioBookingRequestStruct;
00447         }
00448     }
00449 }
00450
00451 // Read the departure date.
00452 ++itTok;
00453 if (itTok->empty() == true) {
00454     return ioBookingRequestStruct;
00455 }
00456 const std::string lDepartureYearString = *itTok;
00457 ++itTok;
00458 if (itTok->empty() == true) {
00459     return ioBookingRequestStruct;
00460 }
00461 const std::string lDepartureMonthString = *itTok;
00462 ++itTok;
00463 if (itTok->empty() == true) {
00464     return ioBookingRequestStruct;
00465 }
00466 const std::string lDepartureDayString = *itTok;
00467 const bool IsDepartureDateReadable =
00468     retrieveDate (lDepartureYearString, lDepartureMonthString,
00469                 lDepartureDayString, lDepartureDate);
00470
00471 if (IsDepartureDateReadable == false) {
00472     std::cerr << "The default booking request and travel solution list are
00473 kept."
00474         << std::endl;
00475     return ioBookingRequestStruct;
00476 }
00477
00478 // Read the origin.
00479 ++itTok;
00480 if (itTok->empty() == false) {
00481     lOriginAirport = *itTok;
00482     boost::algorithm::to_upper (lOriginAirport);
00483 }
00484
00485 // Read the destination.
00486 ++itTok;
00487 if (itTok->empty() == false) {
00488     lDestinationAirport = *itTok;
00489     boost::algorithm::to_upper (lDestinationAirport);
00490 }
00491
00492 // Read the departure time.
00493 ++itTok;
00494 if (itTok->empty() == true) {
00495     return ioBookingRequestStruct;
00496 }
00497 const std::string lDepartureHourString = *itTok;
00498 ++itTok;
00499 if (itTok->empty() == true) {
00500     return ioBookingRequestStruct;
00501 }
00502 const std::string lDepartureMinuteString = *itTok;
00503 const bool IsDepartureTimeReadable =
00504     retrieveTime (lDepartureHourString, lDepartureMinuteString,
00505                 lDepartureTime);
00506
00507 if (IsDepartureTimeReadable == false) {
00508     std::cerr << "The default booking request and travel solution list are
00509 kept."
00510         << std::endl;
00511     return ioBookingRequestStruct;

```

```

00511     }
00512
00513     // Read the request date.
00514     ++itTok;
00515     if (itTok->empty() == true) {
00516         return ioBookingRequestStruct;
00517     }
00518     const std::string lRequestYearString = *itTok;
00519     ++itTok;
00520     if (itTok->empty() == true) {
00521         return ioBookingRequestStruct;
00522     }
00523     const std::string lRequestMonthString = *itTok;
00524     ++itTok;
00525     if (itTok->empty() == true) {
00526         return ioBookingRequestStruct;
00527     }
00528     const std::string lRequestDayString = *itTok;
00529     const bool IsRequestDateReadable =
00530         retrieveDate (lRequestYearString, lRequestMonthString,
00531                     lRequestDayString, lRequestDate);
00532
00533     if (IsRequestDateReadable == false) {
00534         std::cerr << "The default booking request and travel solution list are
00535 kept."
00536                 << std::endl;
00537         return ioBookingRequestStruct;
00538     }
00539     // Read the request time.
00540     ++itTok;
00541     if (itTok->empty() == true) {
00542         return ioBookingRequestStruct;
00543     }
00544     const std::string lRequestHourString = *itTok;
00545     ++itTok;
00546     if (itTok->empty() == true) {
00547         return ioBookingRequestStruct;
00548     }
00549     const std::string lRequestMinuteString = *itTok;
00550     const bool IsRequestTimeReadable =
00551         retrieveTime (lRequestHourString, lRequestMinuteString,
00552                     lRequestTime);
00553
00554     if (IsRequestTimeReadable == false) {
00555         std::cerr << "The default booking request and travel solution list are
00556 kept."
00557                 << std::endl;
00558         return ioBookingRequestStruct;
00559     }
00560     // Read the POS.
00561     ++itTok;
00562     if (itTok->empty() == false) {
00563         lPOS = *itTok;
00564         boost::algorithm::to_upper (lPOS);
00565     }
00566
00567     // Read the channel.
00568     ++itTok;
00569     if (itTok->empty() == false) {
00570         lChannel = *itTok;
00571         boost::algorithm::to_upper (lChannel);
00572     }
00573
00574     // Read the trip type.
00575     ++itTok;
00576     if (itTok->empty() == false) {
00577         lTripType = *itTok;
00578         boost::algorithm::to_upper (lTripType);
00579     }
00580
00581     // Read the stay duration.
00582     ++itTok;

```

```

00583     if (itTok->empty() == false) {
00584         try {
00585             lStayDuration = boost::lexical_cast<unsigned short> (*itTok);
00586         } catch (boost::bad_lexical_cast& eCast) {
00587             std::cerr << "The stay duration ('" << *itTok
00588                 << "') cannot be understood." << std::endl;
00589             return ioBookingRequestStruct;
00590         }
00591     }
00592 }
00593
00594 // At this step we know that all the parameters designed to construct
00595 // the travel solution and the booking request are correct.
00596
00597 // Empty the travel solution list to store a new travel solution.
00598 ioInteractiveTravelSolutionList.pop_front();
00599 // Construct the new travel solution.
00600 stdair::TravelSolutionStruct lTravelSolution;
00601 std::ostringstream oStr;
00602 oStr << lAirlineCode
00603     << stdair::DEFAULT_KEY_FLD_DELIMITER
00604     << lflightNumber
00605     << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00606     << lDepartureDate
00607     << stdair::DEFAULT_KEY_FLD_DELIMITER
00608     << lOriginAirport
00609     << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00610     << lDestinationAirport
00611     << stdair::DEFAULT_KEY_FLD_DELIMITER
00612     << lDepartureTime;
00613 lTravelSolution.addSegment (oStr.str());
00614 ioInteractiveTravelSolutionList.push_front(lTravelSolution);
00615
00616 // Construct the new booking request.
00617 stdair::DateTime_T lRequestDateTime (lRequestDate, lRequestTime);
00618 const stdair::BookingRequestStruct &lBookingRequestStruct =
00619     stdair::BookingRequestStruct (lOriginAirport,
00620         lDestinationAirport,
00621         lPOS,
00622         lDepartureDate,
00623         lRequestDateTime,
00624         stdair::CABIN_ECO,
00625         stdair::DEFAULT_PARTY_SIZE,
00626         lChannel,
00627         lTripType,
00628         lStayDuration,
00629         stdair::FREQUENT_FLYER_MEMBER,
00630         lDepartureTime,
00631         stdair::DEFAULT_WTP,
00632         stdair::DEFAULT_VALUE_OF_TIME);
00633
00634 return lBookingRequestStruct;
00635 }
00636 }
00637
00638 ///////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00639 // Analyze the tokens of the 'display' command in order to retrieve
00640 // an airport pair and a departure date.
00641 void parseFlightDateKey (const TokenList_T& iTokenList,
00642     stdair::AirportCode_T& ioOrigin,
00643     stdair::AirportCode_T& ioDestination,
00644     stdair::Date_T& ioDepartureDate) {
00645     TokenList_T::const_iterator itTok = iTokenList.begin();
00646
00647     // Interpret the user input.
00648     if (itTok->empty() == true) {
00649         std::cerr << "Wrong parameters specified. Default paramaters '"
00650             << ioOrigin << "-" << ioDestination
00651             << "/" << ioDepartureDate
00652             << "' are kept."
00653             << std::endl;
00654     }

```

```

00657
00658     } else {
00659
00660         // Read the origin.
00661         ioOrigin = *itTok;
00662         boost::algorithm::to_upper (ioOrigin);
00663
00664         // Read the destination.
00665         ++itTok;
00666         if (itTok->empty() == false) {
00667             ioDestination = *itTok;
00668             boost::algorithm::to_upper (ioDestination);
00669         }
00670
00671         // Read the departure date.
00672         ++itTok;
00673         if (itTok->empty() == true) {
00674             return;
00675         }
00676         std::string lYearString = *itTok;
00677         ++itTok;
00678         if (itTok->empty() == true) {
00679             return;
00680         }
00681         std::string lMonthString = *itTok;
00682         ++itTok;
00683         if (itTok->empty() == true) {
00684             return;
00685         }
00686         std::string lDayString = *itTok;
00687         const bool IsDepartureDateReadable =
00688             retrieveDate (lYearString, lMonthString, lDayString,
00689                         ioDepartureDate);
00690         if (IsDepartureDateReadable == false) {
00691             std::cerr << "Default paramaters '"
00692                       << ioOrigin << "-" << ioDestination
00693                       << "/" << ioDepartureDate
00694                       << "' are kept."
00695                       << std::endl;
00696             return;
00697         }
00698     }
00699 }
00700
00701 ///////////////////////////////////////////////////////////////////
00702 std::string toString (const TokenList_T& iTokenList) {
00703     std::ostringstream oStr;
00704
00705     // Re-create the string with all the tokens, trimmed by read-line
00706     unsigned short idx = 0;
00707     for (TokenList_T::const_iterator itTok = iTokenList.begin();
00708          itTok != iTokenList.end(); ++itTok, ++idx) {
00709         if (idx != 0) {
00710             oStr << " ";
00711         }
00712         oStr << *itTok;
00713     }
00714
00715     return oStr.str();
00716 }
00717
00718 ///////////////////////////////////////////////////////////////////
00719 TokenList_T extractTokenList (const TokenList_T& iTokenList,
00720                               const std::string& iRegularExpression) {
00721     TokenList_T oTokenList;
00722
00723     // Re-create the string with all the tokens (which had been trimmed
00724     // by read-line)
00725     const std::string lFullLine = toString (iTokenList);
00726
00727     // See the caller for the regular expression
00728     boost::regex expression (iRegularExpression);
00729
00730     std::string::const_iterator start = lFullLine.begin();

```

```

00731     std::string::const_iterator end = lFullLine.end();
00732
00733     boost::match_results<std::string::const_iterator> what;
00734     boost::match_flag_type flags = boost::match_default | boost::format_sed;
00735     regex_search (start, end, what, expression, flags);
00736
00737     // Put the matched strings in the list of tokens to be returned back
00738     // to the caller
00739     const unsigned short lMatchSetSize = what.size();
00740     for (unsigned short matchIdx = 1; matchIdx != lMatchSetSize; ++matchIdx) {
00741         const std::string lMatchedString (std::string (what[matchIdx].first,
00742                                                         what[matchIdx].second));
00743         //if (lMatchedString.empty() == false) {
00744             oTokenList.push_back (lMatchedString);
00745         //}
00746     }
00747
00748     // DEBUG
00749     // std::cout << "After (token list): " << oTokenList << std::endl;
00750
00751     return oTokenList;
00752 }
00753
00754 // //////////////////////////////////////
00755 // Parse the token list of the 'price' command.
00756 TokenList_T extractTokenListForTSAndBR (const TokenList_T& iTokenList) {
00757     const std::string lRegex ("^([[:alpha:]]{2,3})"
00758                               "[[:space:]]+([[:digit:]]{1,4})"
00759                               "[ / ]*"
00760                               "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00761                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00762                               "[[:space:]]*([[:digit:]]{1,2})[[:space:]]*"
00763                               "[[:space:]]+([[:alpha:]]{3})"
00764                               "[[:space:]]+([[:alpha:]]{3})"
00765                               "([[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2}))"
00766                               "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00767                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00768                               "[[:space:]]*([[:digit:]]{1,2})"
00769                               "([[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2}))"
00770                               "[[:space:]]+([[:alpha:]]{3})"
00771                               "[[:space:]]+([[:alpha:]]{2})"
00772                               "[[:space:]]+([[:alpha:]]{2})"
00773                               "[[:space:]]+([[:alpha:]]{2})"
00774                               "[[:space:]]+([[:digit:]]{1})$");
00775
00776     //
00777     const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegex);
00778     return oTokenList;
00779 }
00780
00781 // //////////////////////////////////////
00782 // Parse the token list of the 'display' command.
00783 TokenList_T extractTokenListForOriDestDate (const TokenList_T& iTokenList) {
00784     const std::string lRegex ("^([[:alpha:]]{3})"
00785                               "[[:space:]]*[/-]?"
00786                               "[[:space:]]*([[:alpha:]]{3})"
00787                               "[[:space:]]*[/-]?"
00788                               "[[:space:]]*([[:digit:]]{2,4})"
00789                               "[[:space:]]*[/-]?"
00790                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})"
00791                               "[[:space:]]*[/-]?"
00792                               "[[:space:]]*([[:digit:]]{1,2})$");
00793
00794     //
00795     const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegex);
00796     return oTokenList;
00797 }
00798
00799 // ////////////////////////////////// M A I N //////////////////////////////////
00800 int main (int argc, char* argv[]) {
00801
00802     // State whether the BOM tree should be built-in or parsed from an
00803     // input file

```

```

00833 bool isBuiltin;
00834
00835 // Fare input file name
00836 stdair::Filename_T lFareInputFilename;
00837
00838 // Readline history
00839 const unsigned int lHistorySize (100);
00840 const std::string lHistoryFilename ("simfqt.hist");
00841 const std::string lHistoryBackupFilename ("simfqt.hist.bak");
00842
00843 // Default parameters for the interactive session
00844 stdair::AirportCode_T lInteractiveOrigin;
00845 stdair::AirportCode_T lInteractiveDestination;
00846 stdair::Date_T lInteractiveDepartureDate;
00847
00848 // Output log File
00849 stdair::Filename_T lLogFilename;
00850
00851 // Call the command-line option parser
00852 const int lOptionParserStatus =
00853     readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename)
00854 ;
00855 if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00856     return 0;
00857 }
00858
00859 // Set the log parameters
00860 std::ofstream logOutputFile;
00861 // Open and clean the log outputfile
00862 logOutputFile.open (lLogFilename.c_str());
00863 logOutputFile.clear();
00864
00865 // Initialise the fareQuote service
00866 const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00867 SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00868
00869 // DEBUG
00870 STDAIR_LOG_DEBUG ("Welcome to SimFQT display");
00871
00872 // Check whether or not a (CSV) input file should be read
00873 if (isBuiltin == true) {
00874     // Build the sample BOM tree (filled with fares) for Simfqt
00875     simfqtService.buildSampleBom();
00876 } else {
00877     // Build the BOM tree from parsing a fare file
00878     SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
00879     simfqtService.parseAndLoad (lFareFilePath);
00880 }
00881
00882 // DEBUG: Display the whole BOM tree
00883 const std::string& lCSVDump = simfqtService.csvDisplay();
00884 STDAIR_LOG_DEBUG (lCSVDump);
00885
00886 // DEBUG
00887 STDAIR_LOG_DEBUG ("=====");
00888 STDAIR_LOG_DEBUG ("=          Beginning of the interactive session          =");
00889 STDAIR_LOG_DEBUG ("=====");
00890
00891 // Initialise the GNU readline wrapper
00892 swift::SReadline lReader (lHistoryFilename, lHistorySize);
00893 initReadline (lReader);
00894
00895 // Now we can ask user for a line
00896 std::string lUserInput;
00897 bool EndOfInput (false);
00898 Command_T::Type_T lCommandType (Command_T::NOP);
00899
00900 while (lCommandType != Command_T::QUIT && EndOfInput == false) {
00901
00902     stdair::TravelSolutionList_T lInteractiveTravelSolutionList;
00903     stdair::TravelSolutionStruct lInteractiveTravelSolution;
00904
00905     // Update the default booking request.

```

```

00906     // If there is an input file, we want the CRS booking request (defined in
stdair).
00907     // If not, we want the default booking request.
00908     const bool isCRSBookingRequest = !isBuiltin;
00909     const stdair::BookingRequestStruct& lInteractiveBookingRequest =
00910         simfqtService.buildBookingRequest (isCRSBookingRequest);
00911
00912     // Update the default parameters for the following interactive session.
00913     if (isBuiltin == true) {
00914         lInteractiveOrigin = "LHR";
00915         lInteractiveDestination = "SYD";
00916         lInteractiveDepartureDate = stdair::Date_T(2011,06,10);
00917         simfqtService.buildSampleTravelSolutions (lInteractiveTravelSolutionList)
;
00918     } else {
00919         lInteractiveOrigin = "SIN";
00920         lInteractiveDestination = "BKK";
00921         lInteractiveDepartureDate = stdair::Date_T(2010,01,30);
00922         //
00923         const std::string lBA9_SegmentDateKey ("SQ, 970, 2010-01-30, SIN, BKK,
07:10");
00924
00925         // Add the segment date key to the travel solution.
00926         lInteractiveTravelSolution.addSegment (lBA9_SegmentDateKey);
00927
00928         // Add the travel solution to the list
00929         lInteractiveTravelSolutionList.push_back (lInteractiveTravelSolution);
00930     }
00931
00932     // Prompt.
00933     std::ostringstream oPromptStr;
00934     oPromptStr << "simfqt "
00935         << "> ";
00936     // The last parameter could be omitted.
00937     TokenList_T lTokenListByReadline;
00938     lUserInput = lReader.GetLine (oPromptStr.str(), lTokenListByReadline,
00939         EndOfInput);
00940
00941     // The history could be saved to an arbitrary file at any time.
00942     lReader.SaveHistory (lHistoryBackupFilename);
00943
00944     if (EndOfInput) {
00945         std::cout << std::endl;
00946         break;
00947     }
00948
00949     // Interpret the user input.
00950     lCommandType = extractCommand (lTokenListByReadline);
00951
00952     switch (lCommandType) {
00953
00954         // /////////////////////////////////// Help ///////////////////////////////////
00955     case Command_T::HELP: {
00956         // Search for information to display default parameters lists.
00957         // Get the first travel solution.
00958         stdair::TravelSolutionStruct& lTravelSolutionStruct =
00959             lInteractiveTravelSolutionList.front();
00960         // Get the segment-path of the first travel solution.
00961         const stdair::SegmentPath_T& lSegmentPath =
00962             lTravelSolutionStruct.getSegmentPath();
00963         // Get the first segment of the first travel solution.
00964         const std::string& lSegmentDateKey = lSegmentPath.front();
00965         // Get the parsed key of the first segment of the first travel solution.
00966         const stdair::ParsedKey& lParsedKey =
00967             stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00968         // Get the request date time
00969         const stdair::DateTime_T& lRequestDateTime =
00970             lInteractiveBookingRequest.getRequestDateTime();
00971         const stdair::Time_T lRequestTime =
00972             lRequestDateTime.time_of_day();
00973         std::cout << std::endl;
00974         // Display help.
00975         std::cout << "Commands: " << std::endl;
00976         std::cout << " help" << "\t\t" << "Display this help" << std::endl;

```

```

00977         std::cout << " quit" << "\t\t" << "Quit the application" << std::endl;
00978         std::cout << " list" << "\t\t"
00979         << "List all the fare rule O&Ds and the corresponding date
ranges" << std::endl;
00980         std::cout << " display" << "\t\t"
00981         << "Display all fare rules for an O&D and a departure date. \n"
<< "\t\t"
00982         << "If no parameters specified or wrong list of parameters,
default values are used: \n" << "\t\t"
00983         << "         display " << lInteractiveOrigin << " "
00984         << lInteractiveDestination << " "
00985         << lInteractiveDepartureDate << std::endl;
00986         std::cout << " price" << "\t\t"
00987         << "Price the travel solution corresponding to a booking
request. \n" << "\t\t"
00988         << "If no parameters specified or wrong list of parameters,
default value are used: \n" << "\t\t"
00989         << "         price "
00990         << lParsedKey._airlineCode << " "
00991         << lParsedKey._flightNumber << " "
00992         << lParsedKey._departureDate << " "
00993         << lParsedKey._boardingPoint << " "
00994         << lParsedKey._offPoint << " "
00995         << lParsedKey._boardingTime << " "
00996         << lRequestDateTime.date() << " "
00997         << lRequestTime.hours() << ":" << lRequestTime.minutes() << " "

00998         << lInteractiveBookingRequest.getPOS() << " "
00999         << lInteractiveBookingRequest.getBookingChannel() << " "
01000         << lInteractiveBookingRequest.getTripType() << " "
01001         << lInteractiveBookingRequest.getStayDuration() << std::endl;
01002         std::cout << std::endl;
01003         break;
01004     }
01005
01006     // /////////////////////////////////// Quit ///////////////////////////////////
01007     case Command_T::QUIT: {
01008         break;
01009     }
01010
01011     // /////////////////////////////////// List ///////////////////////////////////
01012     case Command_T::LIST: {
01013
01014         // Get the list of all airport pairs and date ranges for which
01015         // there are fares available.
01016         const std::string& lAirportPairDateListStr =
01017             simfqtService.list ();
01018
01019         if (lAirportPairDateListStr.empty() == false) {
01020             std::cout << lAirportPairDateListStr << std::endl;
01021             STDAIR_LOG_DEBUG (lAirportPairDateListStr);
01022
01023         } else {
01024             std::cerr << "There is no result for airport pairs and date ranges."
01025             << "Make sure your input file is not empty."
01026             << std::endl;
01027         }
01028
01029         break;
01030     }
01031
01032     // /////////////////////////////////// Display ///////////////////////////////////
01033     case Command_T::DISPLAY: {
01034
01035         // If no parameters are entered by the user, keep default ones.
01036         if (lTokenListByReadline.empty() == true) {
01037
01038             std::cout << "No parameters specified. Default paramaters '"
01039             << lInteractiveOrigin << "-" << lInteractiveDestination
01040             << "/" << lInteractiveDepartureDate
01041             << "' are kept."
01042             << std::endl;
01043
01044         } else {

```



```

01045
01046         // Find the best match corresponding to the given parameters.
01047         TokenList_T lTokenList =
01048             extractTokenListForOriDestDate (lTokenListByReadline);
01049
01050         // Parse the best match, and give default values in case the
01051         // user does not specify all the parameters or does not
01052         // specify some of them correctly.
01053         parseFlightDateKey (lTokenList, lInteractiveOrigin,
01054                             lInteractiveDestination, lInteractiveDepartureDate)
01055     ;
01056 }
01057
01058 // Check whether the selected airportpair-date is valid:
01059 // i.e. if there are corresponding fare rules.
01060 const bool isAirportPairDateValid =
01061     simfqtService.check (lInteractiveOrigin, lInteractiveDestination,
01062                         lInteractiveDepartureDate);
01063
01064 if (isAirportPairDateValid == false) {
01065     std::ostringstream oFDKStr;
01066     oFDKStr << "The airport pair/departure date: "
01067             << lInteractiveOrigin << "-" << lInteractiveDestination
01068             << "/" << lInteractiveDepartureDate
01069             << " does not correpond to any fare rule.\n"
01070             << "Make sure it exists with the 'list' command.";
01071     std::cout << oFDKStr.str() << std::endl;
01072     STDAIR_LOG_ERROR (oFDKStr.str());
01073
01074     break;
01075 }
01076
01077 // Display the list of corresponding fare rules.
01078 std::cout << "List of fare rules for "
01079             << lInteractiveOrigin << "-"
01080             << lInteractiveDestination << "/"
01081             << lInteractiveDepartureDate
01082             << std::endl;
01083
01084 const std::string& lFareRuleListStr =
01085     simfqtService.csvDisplay (lInteractiveOrigin,
01086                             lInteractiveDestination,
01087                             lInteractiveDepartureDate);
01088
01089 assert (lFareRuleListStr.empty() == false);
01090 std::cout << lFareRuleListStr << std::endl;
01091 STDAIR_LOG_DEBUG (lFareRuleListStr);
01092
01093 break;
01094 }
01095
01096 // ////////////////////////////////// Price //////////////////////////////////
01097 case Command_T::PRICE: {
01098
01099     // If no parameters are entered by the user, keep default ones.
01100     if (lTokenListByReadline.empty() == true) {
01101
01102         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01103
01104         std::cout << "No parameters specified. Default booking request and
default travel solution list are kept.\n"
01105                 << "Booking request: << "
01106                 << lInteractiveBookingRequest.display() << " >>"
01107                 << "\nTravel Solution: << "
01108                 << lInteractiveTravelSolution.display() << " >>"
01109                 << "\n***** \n"
01110                 << "Fare quote"
01111                 << "\n*****"
01112                 << std::endl;
01113
01114         // Try to fareQuote the sample list of travel solutions.
01115         try {
01116             simfqtService.quotePrices (lInteractiveBookingRequest,

```

```

01117         lInteractiveTravelSolutionList);
01118     } catch (stdair::ObjectNotFoundException& E) {
01119         std::cerr << "The given travel solution corresponding to the given
booking request can not be priced.\n"
01120             << E.what()
01121             << std::endl;
01122         break;
01123     }
01124 } else {
01125     // Find the best match corresponding to the given parameters.
01126     TokenList_T lTokenList =
01127         extractTokenListForTSAndBR (lTokenListByReadline);
01128     // Parse the best match, and give default values in case the
01129     // user does not specify all the parameters or does not
01130     // specify some of them correctly.
01131     stdair::BookingRequestStruct lFinalBookingRequest
01132         = parseTravelSolutionAndBookingRequestKey (lTokenList,
01133             lInteractiveTravelSolutionList,
01134             lInteractiveBookingRequest
01135         );
01136
01137     assert (lInteractiveTravelSolutionList.size() >= 1);
01138     lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01139
01140     // Display the booking request and the first travel solution
01141     // before pricing.
01142     std::cout << "Booking request: << "
01143         << lFinalBookingRequest.display() << " >>"
01144         << "\nTravel Solution: << "
01145         << lInteractiveTravelSolution.display() << " >>"
01146         << "\n***** \n"
01147         << "Fare quote"
01148         << "\n*****"
01149         << std::endl;
01150
01151     // Try to fareQuote the sample list of travel solutions.
01152     try {
01153         simfqtService.quotePrices (lFinalBookingRequest,
01154             lInteractiveTravelSolutionList);
01155     } catch (stdair::ObjectNotFoundException& E) {
01156         std::cerr << "The given travel solution corresponding to the given
booking request can not be priced.\n"
01157             << E.what()
01158             << std::endl;
01159         break;
01160     }
01161 }
01162
01163 // Display the first travel solution after pricing:
01164 // one or more fare option have been added.
01165 lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01166 std::cout << "Travel Solution: << "
01167     << lInteractiveTravelSolution.display() << " >>\n"
01168     << std::endl;
01169
01170 break;
01171 }
01172
01173 // ////////////////////////////////// Default / No value //////////////////////////////////
01174 case Command_T::NOP: {
01175     break;
01176 }
01177 case Command_T::LAST_VALUE:
01178 default: {
01179     // DEBUG
01180     std::ostringstream oStr;
01181     oStr << "The '" << lUserInput << "' command is not yet understood.\n"
01182         << "Type help to have more information." << std::endl;
01183     STDAIR_LOG_DEBUG (oStr.str());

```

```

01187         std::cout << oStr.str() << std::endl;
01188     }
01189 }
01190 }
01191
01192 // DEBUG
01193 STDAIR_LOG_DEBUG ("End of the session. Exiting.");
01194 std::cout << "End of the session. Exiting." << std::endl;
01195
01196 // Close the Log outputFile
01197 logOutputFile.close();
01198
01199 /*
01200  Note: as that program is not intended to be run on a server in
01201  production, it is better not to catch the exceptions. When it
01202  happens (that an exception is throwned), that way we get the
01203  call stack.
01204 */
01205
01206 return 0;
01207 }

```

25.61 test/simfqt/FQTTestSuite.cpp File Reference

25.62 FQTTestSuite.cpp

```

00001
00005 // //////////////////////////////////////
00006 // Import section
00007 // //////////////////////////////////////
00008 // STL
00009 #include <sstream>
00010 #include <fstream>
00011 #include <string>
00012 // Boost Unit Test Framework (UTF)
00013 #define BOOST_TEST_DYN_LINK
00014 #define BOOST_TEST_MAIN
00015 #define BOOST_TEST_MODULE FQTTestSuite
00016 #include <boost/test/unit_test.hpp>
00017 // StdAir
00018 #include <stdair/basic/BasLogParams.hpp>
00019 #include <stdair/basic/BasDBParams.hpp>
00020 #include <stdair/basic/BasFileMgr.hpp>
00021 #include <stdair/service/Logger.hpp>
00022 #include <stdair/bom/TravelSolutionStruct.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 // SimFQT
00025 #include <simfqt/SIMFQT_Service.hpp>
00026 #include <simfqt/config/simfqt-paths.hpp>
00027
00028 namespace boost_utf = boost::unit_test;
00029
00030 struct UnitTestConfig {
00031     UnitTestConfig() {
00032         static std::ofstream _test_log ("FQTTestSuite_utfresults.xml");
00033         boost_utf::unit_test_log.set_stream (_test_log);
00034         boost_utf::unit_test_log.set_format (boost_utf::XML);
00035         boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
00036         //boost_utf::unit_test_log.set_threshold_level
00037         (boost_utf::log_successful_tests);
00038     }
00039
00040     ~UnitTestConfig() {
00041     }
00042 };
00043
00044 // //////////////////////////////////////
00045 void testFareQuoterHelper (const unsigned short iTestFlag,
00046                          const stdair::Filename_T iFareInputFilename,
00047                          const bool isBuiltin) {

```

```

00055
00056 // Output log File
00057 std::ostringstream oStr;
00058 oStr << "FQTTTestSuite_" << iTestFlag << ".log";
00059 const stdair::Filename_T lLogFilename (oStr.str());
00060
00061 // Set the log parameters
00062 std::ofstream logOutputFile;
00063 // Open and clean the log outputfile
00064 logOutputFile.open (lLogFilename.c_str());
00065 logOutputFile.clear();
00066
00067 // Initialise the SimFQT service object
00068 const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
00069                                         logOutputFile);
00070
00071 // Initialise the Simfqt service object
00072 SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00073
00074 // Check wether or not a (CSV) input file should be read
00075 if (isBuiltin == true) {
00076
00077     // Build the default sample BOM tree (filled with fares) for Simfqt
00078     simfqtService.buildSampleBom();
00079
00080 } else {
00081
00082     // Build the BOM tree from parsing the fare input file
00083     SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
00084     simfqtService.parseAndLoad (lFareFilePath);
00085 }
00086
00087 // Build a sample list of travel solutions and a booking request.
00088 stdair::TravelSolutionList_T lTravelSolutionList;
00089 simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00090 stdair::BookingRequestStruct lBookingRequest =
00091     simfqtService.buildBookingRequest();
00092
00093 // Try to fareQuote the sample list of travel solutions
00094 simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00095
00096 // Close the log file
00097 logOutputFile.close();
00098
00099 }
00100
00101 // //////////// Main: Unit Test Suite ////////////
00102
00103 // Set the UTF configuration (re-direct the output to a specific file)
00104 BOOST_GLOBAL_FIXTURE (UnitTestFixture);
00105
00106 // Start the test suite
00107 BOOST_AUTO_TEST_SUITE (master_test_suite)
00108
00109
00110 BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {
00111
00112     // Input file name
00113     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv")
00114     ;
00115
00116     // State whether the BOM tree should be built-in or parsed from an input file
00117     const bool isBuiltin = false;
00118
00119     // Try to fareQuote the sample default list of travel solutions
00120     BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin)
00121 );
00122 }
00123
00124
00125 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {
00126
00127     // Input file name
00128     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "

```

```
    /fareError01.csv");
00133
00134 // State whether the BOM tree should be built-in or parsed from an input file
00135 const bool isBuiltin = false;
00136
00137 // Try to fareQuote the sample default list of travel solutions
00138 BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
00139                     SIMFQT::AirportPairNotFoundException);
00140 }
00141
00142 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {
00143
00144     // Input file name
00145     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
00146 /fareError02.csv");
00147
00148     // State whether the BOM tree should be built-in or parsed from an input file
00149     const bool isBuiltin = false;
00150
00151     // Try to fareQuote the sample default list of travel solutions
00152     BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
00153                         SIMFQT::PosOrChannelNotFoundException);
00154 }
00155
00156 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {
00157
00158     // Input file name
00159     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
00160 /fareError03.csv");
00161
00162     // State whether the BOM tree should be built-in or parsed from an input file
00163     const bool isBuiltin = false;
00164
00165     // Try to fareQuote the sample default list of travel solutions
00166     BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
00167                         SIMFQT::FlightDateNotFoundException);
00168 }
00169
00170 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {
00171
00172     // Input file name
00173     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
00174 /fareError04.csv");
00175
00176     // State whether the BOM tree should be built-in or parsed from an input file
00177     const bool isBuiltin = false;
00178
00179     // Try to fareQuote the sample default list of travel solutions
00180     BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
00181                         SIMFQT::FlightTimeNotFoundException);
00182 }
00183
00184 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {
00185
00186     // Input file name
00187     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
00188 /fareError05.csv");
00189
00190     // State whether the BOM tree should be built-in or parsed from an input file
00191     const bool isBuiltin = false;
00192
00193     // Try to fareQuote the sample default list of travel solutions
00194     BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
00195                         SIMFQT::FeaturesNotFoundException);
00196 }
00197
00198 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {
00199
00200     // Input file name
00201     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
00202 /fareError06.csv");
00203
00204     // State whether the BOM tree should be built-in or parsed from an input file
00205     const bool isBuiltin = false;
```

```
00221
00222 // Try to fareQuote the sample default list of travel solutions
00223 BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
00224                     SIMFQT::AirlineNotFoundException);
00225 }
00226
00231 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {
00232
00233 // Input file name
00234 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
/fareError07.csv");
00235
00236 // State whether the BOM tree should be built-in or parsed from an input file
00237 const bool isBuiltin = false;
00238
00239 // Try to fareQuote the sample default list of travel solutions
00240 BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
00241                     SIMFQT::FareFileParsingFailedException);
00242 }
00243
00248 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {
00249
00250 // Input file name
00251 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "
/missingFile.csv");
00252
00253 // State whether the BOM tree should be built-in or parsed from an input file
00254 const bool isBuiltin = false;
00255
00256 // Try to fareQuote the sample default list of travel solutions
00257 BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
00258                     SIMFQT::FareInputFileNotFoundException);
00259 }
00260
00265 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {
00266
00267 // Input file name
00268 const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/" );
00269
00270 // State whether the BOM tree should be built-in or parsed from an input file
00271 const bool isBuiltin = true;
00272
00273 // Try to fareQuote the sample default list of travel solutions
00274 BOOST_CHECK_NO_THROW (testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin)
);
00275 }
00276
00277
00278 // End the test suite
00279 BOOST_AUTO_TEST_SUITE_END()
00280
00281
```

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