

SimFQT

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1 SimFQT Documentation

1.1 Getting Started

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- [Installation](#)
- [Linking with SimFQT](#)
- [Users Guide](#)
- [Tutorials](#)
- [Copyright and License](#)
- [Make a Difference](#)
- [Make a new release](#)
- [People](#)

1.2 SimFQT at SourceForge

- [Project page](#)
- [Download SimFQT](#)
- [Open a ticket for a bug or feature](#)
- [Mailing lists](#)
- [Forums](#)
 - [Discuss about Development issues](#)
 - [Ask for Help](#)
 - [Discuss SimFQT](#)

1.3 SimFQT Development

- [Git Repository](#) (Subversion is deprecated)
- [Coding Rules](#)
- [Documentation Rules](#)
- [Test Rules](#)

1.4 External Libraries

- [Boost](#) (C++ STL extensions)
- [Python](#)
- [MySQL client](#)
- [SOI](#) (C++ DB API)

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

2.1 Project Admins (and Developers)

- Gabrielle Sabatier gsabatier@users.sourceforge.net ([N](#))
- Denis Arnaud denis_arnaud@users.sourceforge.net ([N](#))
- Anh Quan Nguyen quannaus@users.sourceforge.net ([N](#))

2.2 Retired Developers

- Mehdi Ayouni mehdi.ayouni@gmail.com
- Son Nguyen Kim snguyenkim@users.sourceforge.net ([N](#))

2.3 Contributors

- Emmanuel Bastien ebastien@users.sourceforge.net ([N](#))

2.4 Distribution Maintainers

- [Fedora/RedHat](#): Denis Arnaud denis_arnaud@users.sourceforge.net ([N](#))
- [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

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[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.]

4.2 Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages—typically libraries—of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

4.3 TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

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- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has


```
a purpose that is entirely well-defined independent of the
application.  Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)
```

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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1. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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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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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

1. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

1. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

1. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

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1. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

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1. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
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4.3.2 END OF TERMS AND CONDITIONS

4.4 How to Apply These Terms to Your New Programs

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

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 ChangeLog 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=${INSTALL_BASEDIR}/simfqt-0.5.0 \
  -DWITH_STDAIR_PREFIX=${INSTALL_BASEDIR}/stdair-stable \
  -DWITH_AIRRAC_PREFIX=${INSTALL_BASEDIR}/airsched-stable \
  -DWITH_AIRRAC_PREFIX=${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

- [Fedora/RedHat Linux distributions](#)
- [SimFQT Requirements](#)
- [Basic Installation](#)
- [Compilers and Options](#)
- [Compiling For Multiple Architectures](#)
- [Installation Names](#)
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- [Particular systems](#)
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- [Sharing Defaults](#)
- [Defining Variables](#)
- ['cmake' Invocation](#)

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_STDAIR_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 ..... : FQTTestSuitetst
--
-- * 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 ..... : FQTTestSuitetst
--
-- 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/samples
-- 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;unit_test_f
--   - Boost required libraries ... : optimized;/usr/lib/libboost_iostreams-mt.so;debug;/usr/lib/libboost_iost
--
-- * 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/samples
--
-- 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 FQTTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
  Start 1: FQTTestSuitetst
1/1 Test #1: FQTTestSuitetst ..... 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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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 function 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?](#).

12.7.3 Error Messages for missing fare rules

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.

- If your error message is about a missing airport pair, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirportPairNotFoundException'
  what():  No available fare rule for the Origin-Destination pair: xxx, xxx
Aborted
```

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.

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

```
terminate called after throwing an instance of 'SIMFQT::FlightDateNotFoundException'
  what():  No available fare rule for the flight date x, xxxx-xxx-xx and to the Origin-Destination pair:
Aborted
```

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.

- If your error message is about a missing fare rule for a point-of sale and/or channel, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::PosOrChannelNotFoundException'
  what():  No available fare rule for the point of sale xxx, the channel xx, the flight date x, xxxx-xxx-xx
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 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".

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

```
terminate called after throwing an instance of 'SIMFQT::FlightTimeNotFoundException'
  what(): No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (parsed key) and
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 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, to a request
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' (parsed key), to
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 OpenSuse 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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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 mentionned 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 whether 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 (UnitTestFixture);

// 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::PosOrChannelNotFoundException
    );
}

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::FlightDateNotFoundException
    );
}

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::FlightTimeNotFoundException
    );
}

```



```

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::FareInputFileNotFoundException
    );
}

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 Namespace Index

17.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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18 Class Index

18.1 Class Hierarchy

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

std::basic_fstream< char >	
std::basic_fstream< wchar_t >	
std::basic_ifstream< char >	
std::basic_ifstream< wchar_t >	
std::basic_ios< char >	
std::basic_ios< wchar_t >	
std::basic_iostream< char >	
std::basic_iostream< wchar_t >	
std::basic_istream< char >	
std::basic_istream< wchar_t >	
std::basic_istreamstream< char >	
std::basic_istreamstream< wchar_t >	
std::basic_ofstream< char >	
std::basic_ofstream< wchar_t >	
std::basic_ostream< char >	
std::basic_ostream< wchar_t >	
std::basic_ostreamstream< char >	
std::basic_ostreamstream< wchar_t >	
std::basic_string< char >	
std::basic_string< wchar_t >	
std::basic_stringstream< char >	
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SIMFQT::FareParserHelper::storeMinimumStay	104
SIMFQT::FareParserHelper::storeNonRefundable	105
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21 Namespace Documentation

21.1 SIMFQT Namespace Reference

Namespaces

- namespace [FareParserHelper](#)

Classes

- struct [FareRuleStruct](#)
- class [FareParser](#)
- class [FareRuleFileParser](#)
- class [FareQuoter](#)
 - Command wrapping the pricing request process.*
- 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.*
- class [FareFileParsingFailedException](#)
- 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"

21.1.1 Typedef Documentation

21.1.1.1 typedef unsigned int SIMFQT::FareQuoteID_T

ID for the Fare Quote system.

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

21.1.1.2 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](#).

21.1.2 Variable Documentation

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

Default ID for the [SIMFQT_Service](#).

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

21.2 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](#)

21.2.1 Variable Documentation

21.2.1.1 `stdair::int1_p_t SIMFQT::FareParserHelper::int1_p`

Namespaces. 1-digit-integer parser

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

21.2.1.2 stdair::uint2_p_t SIMFQT::FareParserHelper::uint2_p

2-digit-integer parser

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

21.2.1.3 stdair::uint4_p_t SIMFQT::FareParserHelper::uint4_p

4-digit-integer parser

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

21.2.1.4 stdair::uint1_4_p_t SIMFQT::FareParserHelper::uint1_4_p

Up-to-4-digit-integer parser

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

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

21.2.1.5 stdair::hour_p_t SIMFQT::FareParserHelper::hour_p

Time element parsers.

Definition at line 459 of file [FareParserHelper.cpp](#).

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

21.2.1.6 stdair::minute_p_t SIMFQT::FareParserHelper::minute_p

Definition at line 460 of file [FareParserHelper.cpp](#).

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

21.2.1.7 stdair::second_p_t SIMFQT::FareParserHelper::second_p

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

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

21.2.1.8 stdair::year_p_t SIMFQT::FareParserHelper::year_p

Date element parsers.

Definition at line 464 of file [FareParserHelper.cpp](#).

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

21.2.1.9 stdair::month_p_t SIMFQT::FareParserHelper::month_p

Definition at line 465 of file [FareParserHelper.cpp](#).

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

21.2.1.10 stdair::day_p_t SIMFQT::FareParserHelper::day_p

Definition at line 466 of file [FareParserHelper.cpp](#).

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

21.3 stdair Namespace Reference

Forward declarations.

21.3.1 Detailed Description

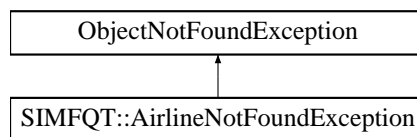
Forward declarations.

22 Class Documentation

22.1 SIMFQT::AirlineNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::AirlineNotFoundException:



Public Member Functions

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

22.1.1 Detailed Description

The airline can not be found.

Definition at line 99 of file [SIMFQT_Types.hpp](#).

22.1.2 Constructor & Destructor Documentation

22.1.2.1 `SIMFQT::AirlineNotFoundException::AirlineNotFoundException (const std::string & iWhat) [inline]`

Constructor.

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

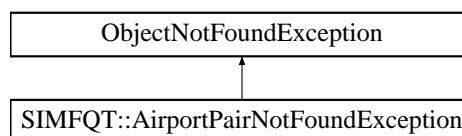
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.2 SIMFQT::AirportPairNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::AirportPairNotFoundException:



Public Member Functions

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

22.2.1 Detailed Description

The given airport pair can not be found.

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

22.2.2 Constructor & Destructor Documentation

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

Constructor.

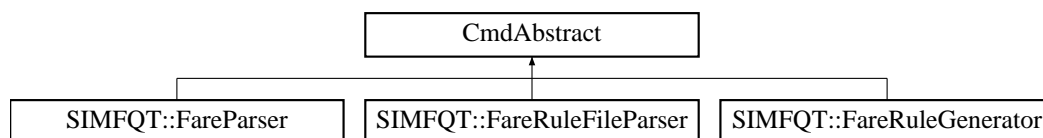
Definition at line 44 of file [SIMFQT_Types.hpp](#).

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

- [simfqt/SIMFQT_Types.hpp](#)

22.3 CmdAbstract Class Reference

Inheritance diagram for CmdAbstract:



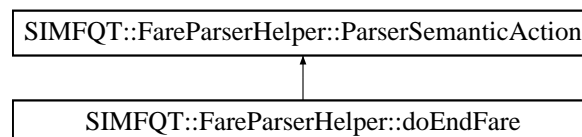
The documentation for this class was generated from the following file:

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

22.4 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](#)

22.4.1 Detailed Description

Mark the end of the fare-rule parsing.

Definition at line 230 of file [FareParserHelper.hpp](#).

22.4.2 Constructor & Destructor Documentation

22.4.2.1 SIMFQT::FareParserHelper::doEndFare::doEndFare ([stdair::BomRoot](#) & [ioBomRoot](#), [FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 420 of file [FareParserHelper.cpp](#).

22.4.3 Member Function Documentation

22.4.3.1 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 427 of file [FareParserHelper.cpp](#).

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

22.4.4 Member Data Documentation

22.4.4.1 [stdair::BomRoot](#)& SIMFQT::FareParserHelper::doEndFare::_bomRoot

Actor Specific Context.

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

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

22.4.4.2 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

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

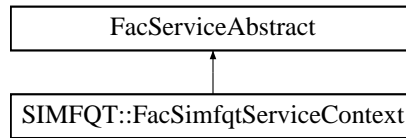
Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [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](#)

22.5 FacServiceAbstract Class Reference

Inheritance diagram for FacServiceAbstract:



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

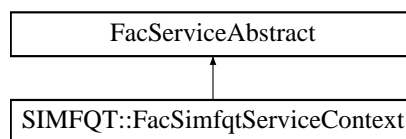
- [simfqt/factory/FacSimfqtServiceContext.hpp](#)

22.6 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\(\)](#)

22.6.1 Detailed Description

Factory for the service context.

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

22.6.2 Constructor & Destructor Documentation

22.6.2.1 SIMFQT::FacSimfqtServiceContext::~~FacSimfqtServiceContext ()

Destructor.

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

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

22.6.2.2 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\(\)](#).

22.6.3 Member Function Documentation

22.6.3.1 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\(\)](#).

22.6.3.2 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](#).

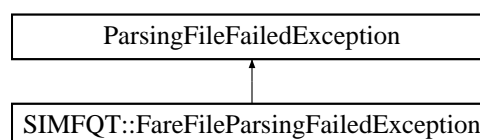
The documentation for this class was generated from the following files:

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

22.7 SIMFQT::FareFileParsingFailedException Class Reference

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

Inheritance diagram for SIMFQT::FareFileParsingFailedException:



Public Member Functions

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

22.7.1 Detailed Description

The fare input file can not be parsed.

Definition at line 26 of file [SIMFQT_Types.hpp](#).

22.7.2 Constructor & Destructor Documentation

22.7.2.1 SIMFQT::FareFileParsingFailedException::FareFileParsingFailedException (const std::string & *iWhat*) [inline]

Constructor.

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

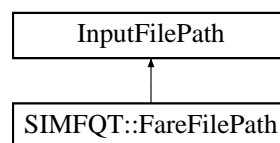
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.8 SIMFQT::FareFilePath Class Reference

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

Inheritance diagram for SIMFQT::FareFilePath:



Public Member Functions

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

22.8.1 Detailed Description

Fare input file.

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

22.8.2 Constructor & Destructor Documentation

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

Constructor.

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

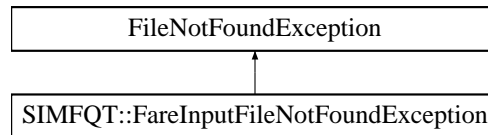
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.9 SIMFQT::FareInputFileNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::FareInputFileNotFoundException:



Public Member Functions

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

22.9.1 Detailed Description

The fare input file can not be found.

Definition at line 111 of file [SIMFQT_Types.hpp](#).

22.9.2 Constructor & Destructor Documentation

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

Constructor.

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

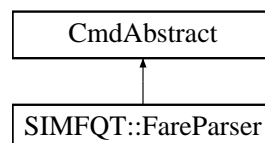
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.10 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 &)

22.10.1 Detailed Description

Class wrapping the parser entry point.

Definition at line 23 of file [FareParser.hpp](#).

22.10.2 Member Function Documentation

22.10.2.1 `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](#)

22.11 SIMFQT::FareQuoter Class Reference

Command wrapping the pricing request process.

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

Friends

- class [SIMFQT_Service](#)

22.11.1 Detailed Description

Command wrapping the pricing request process.

Definition at line 29 of file [FareQuoter.hpp](#).

22.11.2 Friends And Related Function Documentation

22.11.2.1 `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](#).

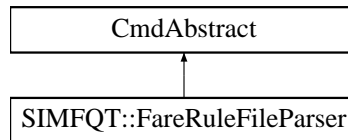
The documentation for this class was generated from the following files:

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

22.12 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 &iFilename)
- void [generateFareRules](#) ()

22.12.1 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.

Definition at line 254 of file [FareParserHelper.hpp](#).

22.12.2 Constructor & Destructor Documentation

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

Constructor.

Definition at line 645 of file [FareParserHelper.cpp](#).

22.12.3 Member Function Documentation

22.12.3.1 void SIMFQT::FareRuleFileParser::generateFareRules ()

Parse the input file and generate the fare rules.

Definition at line 667 of file [FareParserHelper.cpp](#).

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

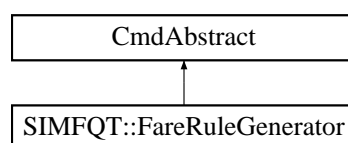
The documentation for this class was generated from the following files:

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

22.13 SIMFQT::FareRuleGenerator Class Reference

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

Inheritance diagram for SIMFQT::FareRuleGenerator:



Friends

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

22.13.1 Detailed Description

Class handling the generation / instantiation of the Fare BOM.

Definition at line 33 of file [FareRuleGenerator.hpp](#).

22.13.2 Friends And Related Function Documentation

22.13.2.1 friend class [FareFileParser](#) [friend]

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

22.13.2.2 friend struct [FareParserHelper::doEndFare](#) [friend]

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

22.13.2.3 friend class [FareParser](#) [friend]

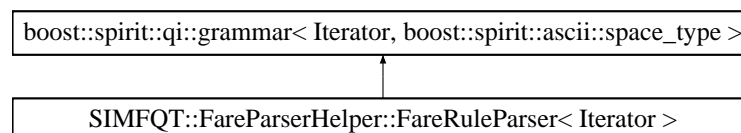
Definition at line 40 of file [FareRuleGenerator.hpp](#).

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

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

22.14 SIMFQT::FareParserHelper::FareRuleParser< Iterator > Struct Template Reference

Inheritance diagram for SIMFQT::FareParserHelper::FareRuleParser< Iterator >:



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 > [advancePurchase](#)
- 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](#)

22.14.1 Detailed Description

template<typename Iterator> struct SIMFQT::FareParserHelper::FareRuleParser< Iterator >

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

fareID OriginCity (3-char airport code) DestinationCity (3-char airport code) DateRangeStart (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.

Definition at line 503 of file [FareParserHelper.cpp](#).

22.14.2 Constructor & Destructor Documentation

22.14.2.1 template<typename Iterator> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser (stdair::BomRoot & *ioBomRoot*, FareRuleStruct & *iofareRule*) [inline]

Definition at line 507 of file [FareParserHelper.cpp](#).

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

22.14.3 Member Data Documentation

22.14.3.1 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::start`

Definition at line 623 of file [FareParserHelper.cpp](#).

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

22.14.3.2 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::comments`

Definition at line 623 of file [FareParserHelper.cpp](#).

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

22.14.3.3 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule`

Definition at line 623 of file [FareParserHelper.cpp](#).

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

22.14.3.4 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule_end`

Definition at line 623 of file [FareParserHelper.cpp](#).

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

22.14.3.5 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type>
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_key`

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

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

Definition at line 623 of file [FareParserHelper.cpp](#).

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

22.14.3.26 `template<typename Iterator> stdair::BomRoot& SIMFQT::FareParserHelper::FareRuleParser< Iterator
>::_bomRoot`

Definition at line 630 of file [FareParserHelper.cpp](#).

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

22.14.3.27 `template<typename Iterator> FareRuleStruct& SIMFQT::FareParserHelper::FareRuleParser< Iterator
>::_fareRule`

Definition at line 631 of file [FareParserHelper.cpp](#).

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

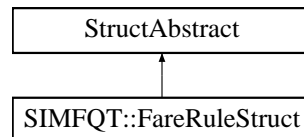
The documentation for this struct was generated from the following file:

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

22.15 SIMFQT::FareRuleStruct Struct Reference

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

Inheritance diagram for SIMFQT::FareRuleStruct:



Public Member Functions

- [FareRuleStruct](#) ()
- [SIMFQT::FareQuoteID_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::FareQuoteID_T](#) &iFareQuoteID)
- [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](#)

22.15.1 Detailed Description

Utility Structure for the parsing of fare-rule structures.

Definition at line 21 of file [FareRuleStruct.hpp](#).

22.15.2 Constructor & Destructor Documentation

22.15.2.1 SIMFQT::FareRuleStruct::FareRuleStruct ()

Default constructor.

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

22.15.3 Member Function Documentation

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

Get the fare ID.

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

22.15.3.2 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\(\)](#).

22.15.3.3 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\(\)](#).

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

Get the trip type.

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

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

Get the date range start.

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

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

Get the date range end.

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

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

Get the time range start.

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

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

Get the time range end.

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

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

Get the cabin code.

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

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

Get the point-of-sale.

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

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

Get the channel.

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

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

Get the advance purchase.

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

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

Get the saturday stay option.

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

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

Get the change fees.

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

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

Get the refundable option.

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

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

Get the minimum stay.

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

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

Get the fare.

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

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

Get the airline code.

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

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

Get the class code.

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

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

Get the size of the airline code list.

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

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

Get the size of the class code list.

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

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

Get the airline code list.

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

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

Get the class code list.

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

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

Calculate the date from the staging details.

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

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

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

22.15.3.25 `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\(\)\(\)](#).

22.15.3.26 `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\(\)\(\)](#).

22.15.3.27 `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\(\)\(\)](#).

22.15.3.28 `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\(\)\(\)](#).

22.15.3.29 `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\(\)\(\)](#).

22.15.3.30 `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\(\)\(\)](#).

22.15.3.31 `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\(\)\(\)](#).

22.15.3.32 `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\(\)\(\)](#).

22.15.3.33 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\(\)\(\)](#).

22.15.3.34 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\(\)\(\)](#).

22.15.3.35 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\(\)\(\)](#).

22.15.3.36 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\(\)\(\)](#).

22.15.3.37 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\(\)\(\)](#).

22.15.3.38 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\(\)\(\)](#).

22.15.3.39 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\(\)\(\)](#).

22.15.3.40 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\(\)\(\)](#).

22.15.3.41 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\(\)](#).

22.15.3.42 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\(\)](#).

22.15.3.43 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\(\)](#).

22.15.3.44 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\(\)](#).

22.15.3.45 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\(\)](#).

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

Empty the airline code list.

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

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

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

Empty the class code list.

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

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

22.15.3.48 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\(\)](#).

22.15.3.49 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\(\)](#).

22.15.4 Member Data Documentation

22.15.4.1 stdair::year_t SIMFQT::FareRuleStruct::_itYear

Staging Date.

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

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

22.15.4.2 stdair::month_t SIMFQT::FareRuleStruct::_itMonth

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

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

22.15.4.3 stdair::day_t SIMFQT::FareRuleStruct::_itDay

Definition at line 277 of file [FareRuleStruct.hpp](#).

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

22.15.4.4 stdair::hour_t SIMFQT::FareRuleStruct::_itHours

Staging Time.

Definition at line 280 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

22.15.4.5 stdair::minute_t SIMFQT::FareRuleStruct::_itMinutes

Definition at line 281 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

22.15.4.6 stdair::second_t SIMFQT::FareRuleStruct::_itSeconds

Definition at line 282 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#), [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#).

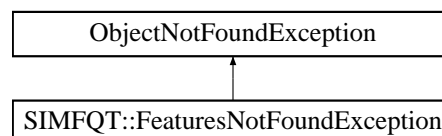
The documentation for this struct was generated from the following files:

- [simfqt/bom/FareRuleStruct.hpp](#)
- [simfqt/bom/FareRuleStruct.cpp](#)

22.16 SIMFQT::FeaturesNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::FeaturesNotFoundException:



Public Member Functions

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

22.16.1 Detailed Description

The fare features can not be found.

Definition at line 87 of file [SIMFQT_Types.hpp](#).

22.16.2 Constructor & Destructor Documentation

22.16.2.1 SIMFQT::FeaturesNotFoundException::FeaturesNotFoundException (const std::string & iWhat) [inline]

Constructor.

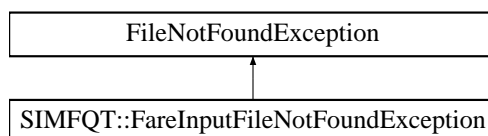
Definition at line 92 of file [SIMFQT_Types.hpp](#).

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

- [simfqt/SIMFQT_Types.hpp](#)

22.17 FileNotFoundException Class Reference

Inheritance diagram for FileNotFoundException:



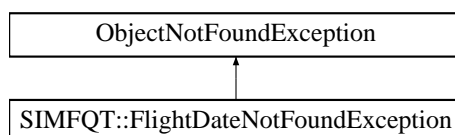
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.18 SIMFQT::FlightDateNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::FlightDateNotFoundException:



Public Member Functions

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

22.18.1 Detailed Description

The departure date of the flight can not be found.

Definition at line 63 of file [SIMFQT_Types.hpp](#).

22.18.2 Constructor & Destructor Documentation

22.18.2.1 SIMFQT::FlightDateNotFoundException::FlightDateNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

Definition at line 68 of file [SIMFQT_Types.hpp](#).

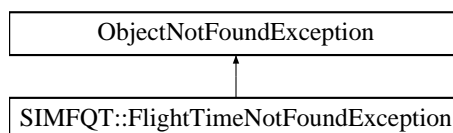
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.19 SIMFQT::FlightTimeNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::FlightTimeNotFoundException:



Public Member Functions

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

22.19.1 Detailed Description

The departure time of the flight can not be found.

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

22.19.2 Constructor & Destructor Documentation

22.19.2.1 SIMFQT::FlightTimeNotFoundException::FlightTimeNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

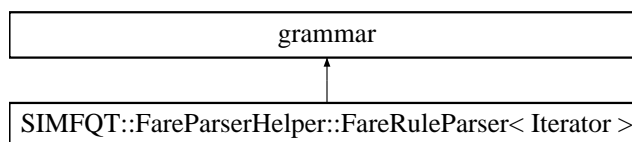
Definition at line 80 of file [SIMFQT_Types.hpp](#).

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

- [simfqt/SIMFQT_Types.hpp](#)

22.20 grammar Class Reference

Inheritance diagram for grammar:

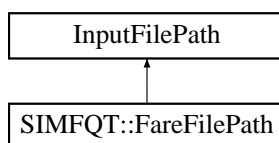


The documentation for this class was generated from the following file:

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

22.21 InputFilePath Class Reference

Inheritance diagram for InputFilePath:

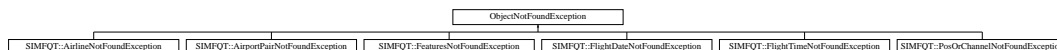


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.22 ObjectNotFoundException Class Reference

Inheritance diagram for ObjectNotFoundException:



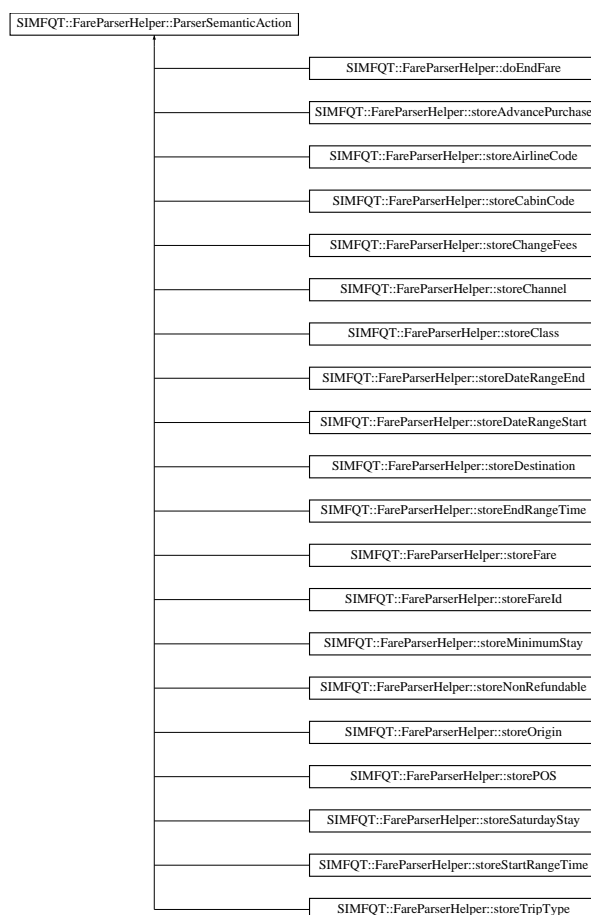
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.23 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](#)

22.23.1 Detailed Description

Generic Semantic Action (Actor / Functor) for the Fare Parser.

Definition at line 31 of file [FareParserHelper.hpp](#).

22.23.2 Constructor & Destructor Documentation

22.23.2.1 SIMFQT::FareParserHelper::ParserSemanticAction::ParserSemanticAction ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 30 of file [FareParserHelper.cpp](#).

22.23.3 Member Data Documentation

22.23.3.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule

Actor Context.

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

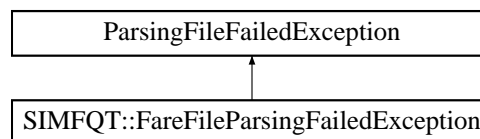
Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [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](#)

22.24 ParsingFileFailedException Class Reference

Inheritance diagram for ParsingFileFailedException:



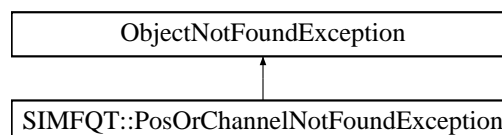
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.25 SIMFQT::PosOrChannelNotFoundException Class Reference

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

Inheritance diagram for SIMFQT::PosOrChannelNotFoundException:



Public Member Functions

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

22.25.1 Detailed Description

The given POS/channel can not be found.

Definition at line 51 of file [SIMFQT_Types.hpp](#).

22.25.2 Constructor & Destructor Documentation

22.25.2.1 SIMFQT::PosOrChannelNotFoundException::PosOrChannelNotFoundException (const std::string & *iWhat*)
[inline]

Constructor.

Definition at line 56 of file [SIMFQT_Types.hpp](#).

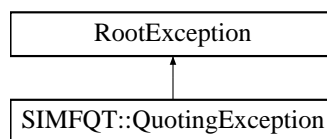
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.26 SIMFQT::QuotingException Class Reference

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

Inheritance diagram for SIMFQT::QuotingException:



22.26.1 Detailed Description

The pricing operation fails.

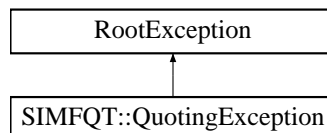
Definition at line 123 of file [SIMFQT_Types.hpp](#).

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

- [simfqt/SIMFQT_Types.hpp](#)

22.27 RootException Class Reference

Inheritance diagram for RootException:

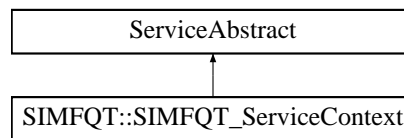


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

22.28 ServiceAbstract Class Reference

Inheritance diagram for ServiceAbstract:



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

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)

22.29 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](#) ()
- void [clonePersistentBom](#) ()
- void [buildComplementaryLinks](#) (stdair::BomRoot &)
- 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

22.29.1 Detailed Description

Interface for the [SIMFQT](#) Services.

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

22.29.2 Constructor & Destructor Documentation

22.29.2.1 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](#).

22.29.2.2 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](#).

22.29.2.3 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::STDAIR_ServicePtr_T</i>	Reference on the STDAIR service.
------------------------------------	----------------------------------

Definition at line 78 of file [SIMFQT_Service.cpp](#).

22.29.2.4 SIMFQT::SIMFQT_Service::~~SIMFQT_Service ()

Destructor.

Definition at line 94 of file [SIMFQT_Service.cpp](#).

22.29.3 Member Function Documentation

22.29.3.1 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 [buildComplementaryLinks\(\)](#), [clonePersistentBom\(\)](#), and [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

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

22.29.3.2 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 AF). 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 223 of file [SIMFQT_Service.cpp](#).

References [buildComplementaryLinks\(\)](#), and [clonePersistentBom\(\)](#).

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

22.29.3.3 void SIMFQT::SIMFQT_Service::clonePersistentBom ()

Clone the persistent BOM object.

Definition at line 279 of file [SIMFQT_Service.cpp](#).

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

Referenced by [buildSampleBom\(\)](#), and [parseAndLoad\(\)](#).

22.29.3.4 void SIMFQT::SIMFQT_Service::buildComplementaryLinks (stdair::BomRoot & ioBomRoot)

Build all the complementary links in the given bom root object.

Note

Do nothing for now.

Definition at line 315 of file [SIMFQT_Service.cpp](#).

Referenced by [buildSampleBom\(\)](#), [clonePersistentBom\(\)](#), and [parseAndLoad\(\)](#).

22.29.3.5 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 320 of file [SIMFQT_Service.cpp](#).

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

22.29.3.6 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 344 of file [SIMFQT_Service.cpp](#).

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

22.29.3.7 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 480 of file [SIMFQT_Service.cpp](#).

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

22.29.3.8 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 365 of file [SIMFQT_Service.cpp](#).

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

22.29.3.9 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 392 of file [SIMFQT_Service.cpp](#).

22.29.3.10 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 414 of file [SIMFQT_Service.cpp](#).

22.29.3.11 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 437 of file [SIMFQT_Service.cpp](#).

22.29.3.12 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 458 of file [SIMFQT_Service.cpp](#).

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

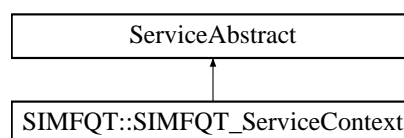
- [simfqt/SIMFQT_Service.hpp](#)
- [simfqt/service/SIMFQT_Service.cpp](#)

22.30 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](#)

22.30.1 Detailed Description

Class holding the context of the SimFQT services.

Definition at line 25 of file [SIMFQT_ServiceContext.hpp](#).

22.30.2 Friends And Related Function Documentation

22.30.2.1 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](#).

22.30.2.2 friend class FacSimfqtServiceContext [friend]

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

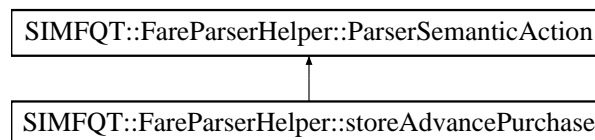
The documentation for this class was generated from the following files:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)
- [simfqt/service/SIMFQT_ServiceContext.cpp](#)

22.31 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](#)

22.31.1 Detailed Description

Store the parsed advance purchase days.

Definition at line 150 of file [FareParserHelper.hpp](#).

22.31.2 Constructor & Destructor Documentation

22.31.2.1 SIMFQT::FareParserHelper::storeAdvancePurchase::storeAdvancePurchase ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 254 of file [FareParserHelper.cpp](#).

22.31.3 Member Function Documentation

22.31.3.1 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 259 of file [FareParserHelper.cpp](#).

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

22.31.4 Member Data Documentation

22.31.4.1 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\(\)](#).

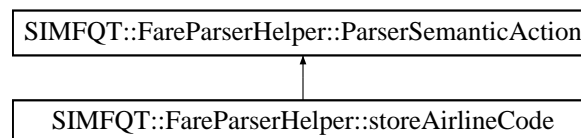
The documentation for this struct was generated from the following files:

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

22.32 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](#)

22.32.1 Detailed Description

Store the parsed airline code.

Definition at line 210 of file [FareParserHelper.hpp](#).

22.32.2 Constructor & Destructor Documentation

22.32.2.1 SIMFQT::FareParserHelper::storeAirlineCode::storeAirlineCode ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 378 of file [FareParserHelper.cpp](#).

22.32.3 Member Function Documentation

22.32.3.1 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 383 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::add-AirlineCode\(\)](#).

22.32.4 Member Data Documentation

22.32.4.1 [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\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

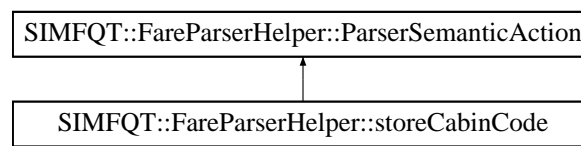
The documentation for this struct was generated from the following files:

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

22.33 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](#)

22.33.1 Detailed Description

Store the cabin code.

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

22.33.2 Constructor & Destructor Documentation

22.33.2.1 SIMFQT::FareParserHelper::storeCabinCode::storeCabinCode ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 212 of file [FareParserHelper.cpp](#).

22.33.3 Member Function Documentation

22.33.3.1 void SIMFQT::FareParserHelper::storeCabinCode::operator() (char *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 217 of file [FareParserHelper.cpp](#).

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

22.33.4 Member Data Documentation

22.33.4.1 [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::storeAdvance](#)

[Purchase::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\(\)](#)).

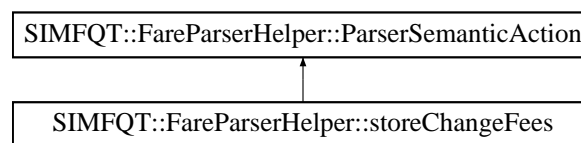
The documentation for this struct was generated from the following files:

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

22.34 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](#)

22.34.1 Detailed Description

Store the parsed change fees.

Definition at line 170 of file [FareParserHelper.hpp](#).

22.34.2 Constructor & Destructor Documentation

22.34.2.1 SIMFQT::FareParserHelper::storeChangeFees::storeChangeFees ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 295 of file [FareParserHelper.cpp](#).

22.34.3 Member Function Documentation

22.34.3.1 void SIMFQT::FareParserHelper::storeChangeFees::operator() (char *iChangefees*, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 300 of file [FareParserHelper.cpp](#).

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

22.34.4 Member Data Documentation

22.34.4.1 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\(\)](#).

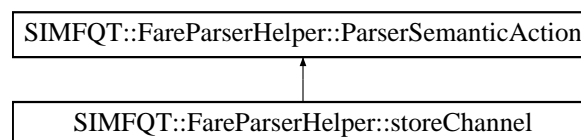
The documentation for this struct was generated from the following files:

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

22.35 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](#)

22.35.1 Detailed Description

Store the channel distribution.

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

22.35.2 Constructor & Destructor Documentation

22.35.2.1 SIMFQT::FareParserHelper::storeChannel::storeChannel ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 233 of file [FareParserHelper.cpp](#).

22.35.3 Member Function Documentation

22.35.3.1 `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 238 of file [FareParserHelper.cpp](#).

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

22.35.4 Member Data Documentation

22.35.4.1 `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\(\)](#).

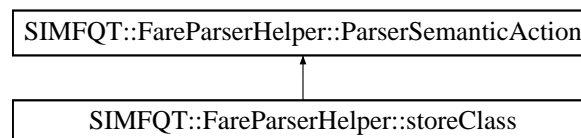
The documentation for this struct was generated from the following files:

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

22.36 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](#)

22.36.1 Detailed Description

Store the parsed class code.

Definition at line 220 of file [FareParserHelper.hpp](#).

22.36.2 Constructor & Destructor Documentation

22.36.2.1 SIMFQT::FareParserHelper::storeClass::storeClass ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 396 of file [FareParserHelper.cpp](#).

22.36.3 Member Function Documentation

22.36.3.1 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 401 of file [FareParserHelper.cpp](#).

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

22.36.4 Member Data Documentation

22.36.4.1 [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\(\)](#).

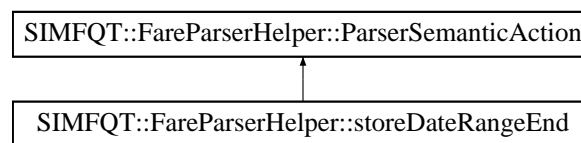
The documentation for this struct was generated from the following files:

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

22.37 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](#)

22.37.1 Detailed Description

Store the parsed end of the date range.

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

22.37.2 Constructor & Destructor Documentation

22.37.2.1 SIMFQT::FareParserHelper::storeDateRangeEnd::storeDateRangeEnd ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 129 of file [FareParserHelper.cpp](#).

22.37.3 Member Function Documentation

22.37.3.1 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 134 of file [FareParserHelper.cpp](#).

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

22.37.4 Member Data Documentation

22.37.4.1 [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\(\)](#), and [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\(\)](#).

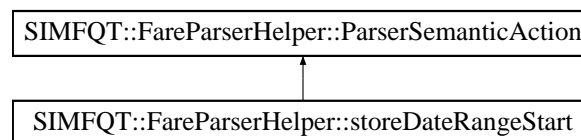
The documentation for this struct was generated from the following files:

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

22.38 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](#)

22.38.1 Detailed Description

Store the parsed start of the date range.

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

22.38.2 Constructor & Destructor Documentation

22.38.2.1 SIMFQT::FareParserHelper::storeDateRangeStart::storeDateRangeStart ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 113 of file [FareParserHelper.cpp](#).

22.38.3 Member Function Documentation

22.38.3.1 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 118 of file [FareParserHelper.cpp](#).

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

22.38.4 Member Data Documentation

22.38.4.1 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\(\)](#).

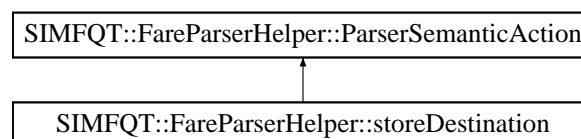
The documentation for this struct was generated from the following files:

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

22.39 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](#)

22.39.1 Detailed Description

Store the parsed destination.

Definition at line 59 of file [FareParserHelper.hpp](#).

22.39.2 Constructor & Destructor Documentation

22.39.2.1 SIMFQT::FareParserHelper::storeDestination::storeDestination (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 75 of file [FareParserHelper.cpp](#).

22.39.3 Member Function Documentation

22.39.3.1 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 80 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::set-Destination\(\)](#).

22.39.4 Member Data Documentation

22.39.4.1 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\(\)](#).

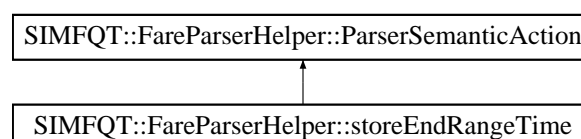
The documentation for this struct was generated from the following files:

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

22.40 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](#)

22.40.1 Detailed Description

Store the parsed end range time.

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

22.40.2 Constructor & Destructor Documentation

22.40.2.1 SIMFQT::FareParserHelper::storeEndRangeTime::storeEndRangeTime ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 168 of file [FareParserHelper.cpp](#).

22.40.3 Member Function Documentation

22.40.3.1 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 173 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), and [SIMFQT::FareRuleStruct::setTimeRangeEnd\(\)](#).

22.40.4 Member Data Documentation

22.40.4.1 [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:

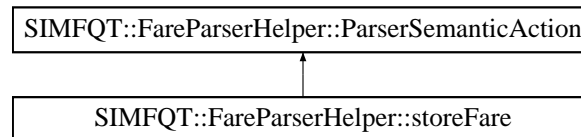
- [simfq/command/FareParserHelper.hpp](#)

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

22.41 SIMFQT::FareParserHelper::storeFare Struct Reference

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

Inheritance diagram for SIMFQT::FareParserHelper::storeFare:



Public Member Functions

- [storeFare](#) ([FareRuleStruct](#) &)
- [operator\(\)](#) (double, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

22.41.1 Detailed Description

Store the parsed fare value.

Definition at line 200 of file [FareParserHelper.hpp](#).

22.41.2 Constructor & Destructor Documentation

22.41.2.1 SIMFQT::FareParserHelper::storeFare::storeFare ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 362 of file [FareParserHelper.cpp](#).

22.41.3 Member Function Documentation

22.41.3.1 void SIMFQT::FareParserHelper::storeFare::operator() (double *iFare*, [boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 367 of file [FareParserHelper.cpp](#).

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

22.41.4 Member Data Documentation

22.41.4.1 [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\(\)](#).

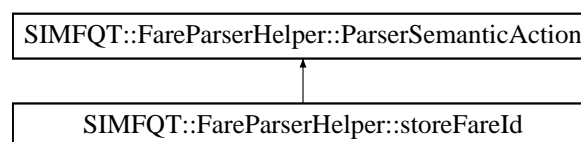
The documentation for this struct was generated from the following files:

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

22.42 SIMFQT::FareParserHelper::storeFareId Struct Reference

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

Inheritance diagram for SIMFQT::FareParserHelper::storeFareId:



Public Member Functions

- [storeFareId](#) ([FareRuleStruct](#) &)
- [operator](#)() (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

22.42.1 Detailed Description

Store the parsed fare Id.

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

22.42.2 Constructor & Destructor Documentation

22.42.2.1 SIMFQT::FareParserHelper::storeFareId::storeFareId ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 36 of file [FareParserHelper.cpp](#).

22.42.3 Member Function Documentation

22.42.3.1 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 41 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::clearAirlineCodeList\(\)](#), [SIMFQT::FareRuleStruct::clearClassCodeList\(\)](#), [SIMFQT::FareRuleStruct::setAirlineCode\(\)](#), [SIMFQT::FareRuleStruct::setClassCode\(\)](#), and [SIMFQT::FareRuleStruct::setFareId\(\)](#).

22.42.4 Member Data Documentation

22.42.4.1 **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::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\(\)](#).

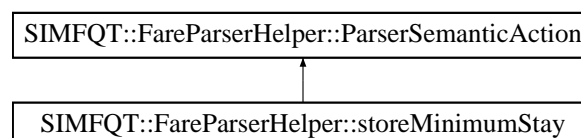
The documentation for this struct was generated from the following files:

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

22.43 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](#)

22.43.1 Detailed Description

Store the parsed minimum stay.

Definition at line 190 of file [FareParserHelper.hpp](#).

22.43.2 Constructor & Destructor Documentation

22.43.2.1 SIMFQT::FareParserHelper::storeMinimumStay::storeMinimumStay (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 346 of file [FareParserHelper.cpp](#).

22.43.3 Member Function Documentation

22.43.3.1 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 351 of file [FareParserHelper.cpp](#).

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

22.43.4 Member Data Documentation

22.43.4.1 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\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

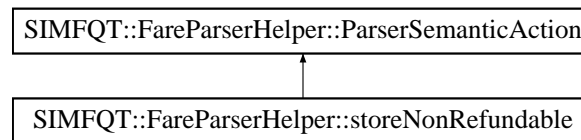
The documentation for this struct was generated from the following files:

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

22.44 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](#)

22.44.1 Detailed Description

Store the parsed refundable option

Definition at line 180 of file [FareParserHelper.hpp](#).

22.44.2 Constructor & Destructor Documentation

22.44.2.1 SIMFQT::FareParserHelper::storeNonRefundable::storeNonRefundable ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 321 of file [FareParserHelper.cpp](#).

22.44.3 Member Function Documentation

22.44.3.1 void SIMFQT::FareParserHelper::storeNonRefundable::operator() (char *iNonRefundable*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 326 of file [FareParserHelper.cpp](#).

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

22.44.4 Member Data Documentation

22.44.4.1 [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\(\)](#).

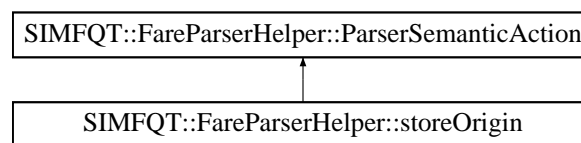
The documentation for this struct was generated from the following files:

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

22.45 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](#)

22.45.1 Detailed Description

Store the parsed origin.

Definition at line 49 of file [FareParserHelper.hpp](#).

22.45.2 Constructor & Destructor Documentation

22.45.2.1 SIMFQT::FareParserHelper::storeOrigin::storeOrigin ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 59 of file [FareParserHelper.cpp](#).

22.45.3 Member Function Documentation

22.45.3.1 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 64 of file [FareParserHelper.cpp](#).

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

22.45.4 Member Data Documentation

22.45.4.1 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\(\)](#).

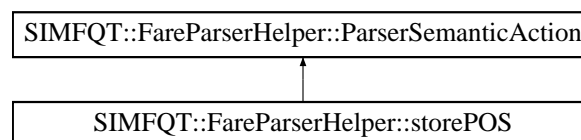
The documentation for this struct was generated from the following files:

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

22.46 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](#)

22.46.1 Detailed Description

Store the parsed customer point_of_sale.

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

22.46.2 Constructor & Destructor Documentation

22.46.2.1 SIMFQT::FareParserHelper::storePOS::storePOS ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 186 of file [FareParserHelper.cpp](#).

22.46.3 Member Function Documentation

22.46.3.1 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 191 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::getDestination\(\)](#), [SIMFQT::FareRuleStruct::getOrigin\(\)](#), and [SIMFQT::FareRuleStruct::setPOS\(\)](#).

22.46.4 Member Data Documentation

22.46.4.1 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\(\)](#).

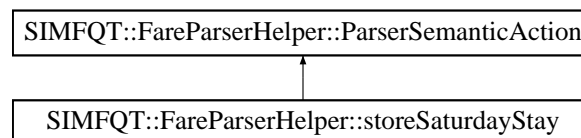
The documentation for this struct was generated from the following files:

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

22.47 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](#)

22.47.1 Detailed Description

Store the parsed saturday night.

Definition at line 160 of file [FareParserHelper.hpp](#).

22.47.2 Constructor & Destructor Documentation

22.47.2.1 SIMFQT::FareParserHelper::storeSaturdayStay::storeSaturdayStay ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 270 of file [FareParserHelper.cpp](#).

22.47.3 Member Function Documentation

22.47.3.1 void SIMFQT::FareParserHelper::storeSaturdayStay::operator() ([char](#) *iSaturdayStay*, [boost::spirit::qi::unused_type](#) , [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 275 of file [FareParserHelper.cpp](#).

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

22.47.4 Member Data Documentation

22.47.4.1 [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::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), and [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

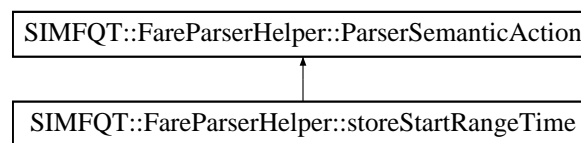
The documentation for this struct was generated from the following files:

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

22.48 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](#)

22.48.1 Detailed Description

Store the parsed start range time.

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

22.48.2 Constructor & Destructor Documentation

22.48.2.1 SIMFQT::FareParserHelper::storeStartRangeTime::storeStartRangeTime ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 150 of file [FareParserHelper.cpp](#).

22.48.3 Member Function Documentation

22.48.3.1 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 155 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), and [SIMFQT::FareRuleStruct::setTimeRangeStart\(\)](#).

22.48.4 Member Data Documentation

22.48.4.1 [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\(\)](#), and [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\(\)](#).

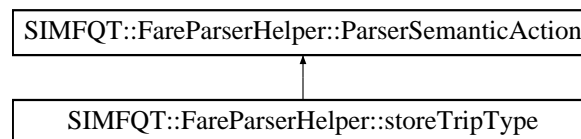
The documentation for this struct was generated from the following files:

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

22.49 SIMFQT::FareParserHelper::storeTripType Struct Reference

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

Inheritance diagram for SIMFQT::FareParserHelper::storeTripType:



Public Member Functions

- [storeTripType](#) ([FareRuleStruct](#) &)
- [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

22.49.1 Detailed Description

Store the parsed customer trip type.

Definition at line 69 of file [FareParserHelper.hpp](#).

22.49.2 Constructor & Destructor Documentation

22.49.2.1 SIMFQT::FareParserHelper::storeTripType::storeTripType ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 91 of file [FareParserHelper.cpp](#).

22.49.3 Member Function Documentation

22.49.3.1 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 96 of file [FareParserHelper.cpp](#).

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

22.49.4 Member Data Documentation

22.49.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::fareRule [inherited]

Actor Context.

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

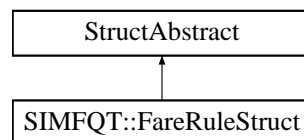
Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [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](#)

22.50 StructAbstract Class Reference

Inheritance diagram for StructAbstract:



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

- [simfqt/bom/FareRuleStruct.hpp](#)

23 File Documentation

23.1 doc/local/authors.doc File Reference

23.2 doc/local/codingrules.doc File Reference

23.3 doc/local/copyright.doc File Reference

23.4 doc/local/documentation.doc File Reference

23.5 doc/local/features.doc File Reference

23.6 doc/local/help_wanted.doc File Reference**23.7 doc/local/howto_release.doc File Reference****23.8 doc/local/index.doc File Reference****23.9 doc/local/installation.doc File Reference****23.10 doc/local/linking.doc File Reference****23.11 doc/local/test.doc File Reference****23.12 doc/local/users_guide.doc File Reference****23.13 doc/local/verification.doc File Reference****23.14 doc/tutorial/tutorial.doc File Reference****23.15 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"

23.16 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
00010     const std::string DEFAULT\_FARE\_QUOTER\_ID = "IATA";
00011
00012 }
```

23.17 simfqt/basic/BasConst_General.hpp File Reference**Namespaces**

- namespace [SIMFQT](#)

23.18 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

```

23.19 simfqt/basic/BasConst_SIMFQT_Service.hpp File Reference

```
#include <string>
```

Namespaces

- namespace [SIMFQT](#)

23.20 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

```

23.21 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

- `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")
- `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 bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT` = false
- `const int K_SIMFQT_EARLY_RETURN_STATUS` = 99

23.21.1 Typedef Documentation

23.21.1.1 `typedef std::vector<std::string> WordList_T`

Definition at line 24 of file [simfqt_parseFareRules.cpp](#).

23.21.2 Function Documentation

23.21.2.1 `const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log")`

Default name and location for the log file.

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

23.21.2.2 `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\(\)](#).

23.21.2.3 `template<class T > std::ostream& operator<< (std::ostream &os, const std::vector< T > &v)`

Definition at line 44 of file [simfqt_parseFareRules.cpp](#).

23.21.2.4 `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\(\)](#).

23.21.2.5 `int main (int argc, char * argv[])`

Definition at line 154 of file [simfqt_parseFareRules.cpp](#).

References [SIMFQT::SIMFQT_Service::buildBookingRequest\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleBom\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleTravelSolutions\(\)](#), [SIMFQT::SIMFQT_Service::csvDisplay\(\)](#), [K_SIMFQT_EARLY_RETURN_STATUS](#), [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#), [SIMFQT::SIMFQT_Service::quotePrices\(\)](#), and [readConfiguration\(\)](#).

23.21.3 Variable Documentation

23.21.3.1 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\(\)](#).

23.21.3.2 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 [main\(\)](#), and [readConfiguration\(\)](#).

23.22 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
(STDPAIR_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          ),
00076          "(CSV) input file for the fare rules")
00077         ("log,l",
00078          boost::program_options::value< std::string >(&ioLogFilename)->
00079          default_value(K_SIMFQT_DEFAULT_LOG_FILENAME),
00080          "Filename for the logs")
00081         ;
00082
00083     // Hidden options, will be allowed both on command line and
00084     // in config file, but will not be shown to the user.
00085     boost::program_options::options_description hidden ("Hidden options");
00086     hidden.add_options()
00087         ("copyright",
00088          boost::program_options::value< std::vector<std::string> >(),
00089          "Show the copyright (license)");
00090
00091     boost::program_options::options_description cmdline_options;
00092     cmdline_options.add(generic).add(config).add(hidden);
00093
00094     boost::program_options::options_description config_file_options;
00095     config_file_options.add(config).add(hidden);
00096
00097     boost::program_options::options_description visible ("Allowed options");
00098     visible.add(generic).add(config);
00099
00100     boost::program_options::positional_options_description p;
00101     p.add ("copyright", -1);
00102
00103     boost::program_options::variables_map vm;
00104     boost::program_options::
00105         store (boost::program_options::command_line_parser (argc, argv).
00106         options (cmdline_options).positional(p).run(), vm);
00107
00108     std::ifstream ifs ("simfqt.cfg");
00109     boost::program_options::store (parse_config_file (ifs, config_file_options),
00110     vm);
00111     boost::program_options::notify (vm); if (vm.count ("help")) {
00112     std::cout << visible << std::endl;
00113     return K_SIMFQT_EARLY_RETURN_STATUS;
00114     }
00115
00116     if (vm.count ("version")) {
00117     std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION
00118     << std::endl;
00119     return K_SIMFQT_EARLY_RETURN_STATUS;
00120     }
00121
00122     if (vm.count ("prefix")) {
00123     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00124     return K_SIMFQT_EARLY_RETURN_STATUS;
00125     }
00126
00127     if (vm.count ("builtin")) {
00128     ioIsBuiltin = true;
00129     }
00130
00131     const std::string isBuiltinStr = (ioIsBuiltin == true)? "yes": "no";
00132     std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00133
00134     if (ioIsBuiltin == false) {
00135
00136         // The BOM tree should be built from parsing a fare (and O&D) file
00137         if (vm.count ("fare")) {
00138             ioFareInputFilename = vm["fare"].as< std::string >();
00139             std::cout << "Input fare filename is: " << ioFareInputFilename
00140             << std::endl;
00141         } else {
00142             // The built-in option is not selected. However, no fare file
00143             // is specified
00144             std::cerr << "Either one among the -b/--builtin and -f/--fare "
00145             << "options must be specified" << std::endl;
00146         }
00147     }

```

```

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,
00168         lFareInputFilename, lLogFilename);
00169
00170     if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS
00171 ) {
00172         return 0;
00173     }
00174
00175     // Set the log parameters
00176     std::ofstream logOutputFile;
00177     // Open and clean the log outputfile
00178     logOutputFile.open (lLogFilename.c_str());
00179     logOutputFile.clear();
00180
00181     // Initialise the Simfqt service object
00182     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00183
00184     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00185
00186     // DEBUG
00187     STDAIR_LOG_DEBUG ("Welcome to Simfqt");
00188
00189     // Build a default sample list of travel solutions
00190     stdair::TravelSolutionList_T lTravelSolutionList;
00191     simfqtService.buildSampleTravelSolutions (
00192     lTravelSolutionList);
00193
00194     // Build a default booking request
00195     stdair::BookingRequestStruct lBookingRequest =
00196     simfqtService.buildBookingRequest();
00197
00198     // Check whether or not a (CSV) input file should be read
00199     if (isBuiltin == true) {
00200
00201         // Build the default sample BOM tree (filled with fares) for Simfqt
00202         simfqtService.buildSampleBom();
00203
00204     } else {
00205
00206         // Build the BOM tree from parsing a fare file
00207         SIMFQT::FareFilePath lFareFilePath (lFareInputFilename)
00208         ;
00209         simfqtService.parseAndLoad (lFareFilePath);
00210
00211     }
00212
00213     // DEBUG: Display the travel solutions
00214     const std::string& lTSCSVDump =
00215     simfqtService.csvDisplay (lTravelSolutionList);
00216     STDAIR_LOG_DEBUG (lTSCSVDump);
00217
00218     // FareQuote the sample list of travel solutions
00219     simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00220
00221     // DEBUG: Display the whole BOM tree
00222     const std::string& lBOMCSVDump = simfqtService.csvDisplay();
00223     STDAIR_LOG_DEBUG ("BOM tree: " << lBOMCSVDump);
00224
00225     // DEBUG: Display the travel solutions
00226     const std::string& lTSCSVDumpEnd
00227     = simfqtService.csvDisplay (lTravelSolutionList);
00228     STDAIR_LOG_DEBUG (lTSCSVDumpEnd);
00229
00230

```

```

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

```

23.23 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/FareRuleStruct.hpp>

```

Namespaces

- namespace [SIMFQT](#)

23.24 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()
00040 const {
00041     _itYear.check(); _itMonth.check(); _itDay.check();
00042     return stdair::Date_T (_itYear._value, _itMonth._value,
00043                             _itDay._value);
00044 }
00045

```

```

00044 // //////////////////////////////////////
00045 stdair::Duration_T FareRuleStruct::calculateTime
00046 () const {
00047     _itHours.check(); _itMinutes.check(); _itSeconds
00048     .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 pathes
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

```

23.25 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](#)

23.26 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
00020     struct FareRuleStruct : public stdair::StructAbstract {
00021     public:
00022
00023         FareRuleStruct ();
00024
00025     public:
00026         // ////////////////////////////////// Getters //////////////////////////////////
00027         SIMFQT::FareQuoteID_T getFareID () const {
00028             return _fareId;
00029         }
00030
00031         stdair::AirportCode_T getOrigin () const {
00032             return _origin;
00033         }
00034
00035         stdair::AirportCode_T getDestination () const {
00036             return _destination;
00037         }
00038
00039         stdair::TripType_T getTripType () const {
00040             return _tripType;
00041         }
00042
00043         stdair::Date_T getDateRangeStart () const {
00044             return _dateRangeStart;
00045         }
00046
00047         stdair::Date_T getDateRangeEnd () const {
00048             return _dateRangeEnd;
00049         }
00050
00051         stdair::Duration_T getTimeRangeStart () const {
00052             return _timeRangeStart;
00053         }
00054
00055         stdair::Duration_T getTimeRangeEnd () const {
00056             return _timeRangeEnd;
00057         }
00058
00059         stdair::CabinCode_T getCabinCode () const {
00060             return _cabinCode;
00061         }
00062
00063         const stdair::CityCode_T getPOS () const {
00064             return _pos;
00065         }
00066
00067         stdair::ChannelLabel_T getChannel () const {
00068             return _channel;
00069         }
00070
00071         stdair::DayDuration_T getAdvancePurchase () const {
00072             return _advancePurchase;
00073         }
00074
00075         stdair::SaturdayStay_T getSaturdayStay () const {
00076             return _saturdayStay;
00077         }
00078
00079         stdair::ChangeFees_T getChangeFees () const {
00080             return _changeFees;
00081         }
00082
00083         stdair::NonRefundable_T getNonRefundable () const {
00084             return _nonRefundable;
00085         }
00086
00087     };
00088
00089 }
00090
00091 #endif

```

```

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&
00159 iFareQuoteID) {
00160             _fareId = iFareQuoteID;
00161         }
00163         void setOrigin (const stdair::AirportCode_T& iOrigin) {
00164             _origin = iOrigin;
00165         }
00166
00168         void setDestination (const stdair::AirportCode_T&
00169 iDestination) {
00170             _destination = iDestination;
00171         }
00173         void setTripType (const stdair::TripType_T& iTripType) {
00174             _tripType = iTripType;
00175         }
00176
00178         void setDateRangeStart (const stdair::Date_T&
00179 iDateRangeStart) {
00180             _dateRangeStart = iDateRangeStart;
00181         }
00183         void setDateRangeEnd (const stdair::Date_T& iDateRangeEnd) {
00184             _dateRangeEnd = iDateRangeEnd;
00185         }
00186
00188         void setTimeRangeStart (const stdair::Duration_T&
00189 iTimeRangeStart) {
00190             _timeRangeStart = iTimeRangeStart;
00191         }
00193         void setTimeRangeEnd (const stdair::Duration_T&
00194 iTimeRangeEnd) {
00195             _timeRangeEnd = iTimeRangeEnd;
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

```

23.27 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](#)

23.28 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
00013 #include <simfqt/command/FareParser.hpp>
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 }

```

23.29 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](#)

23.30 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
00023     class FareParser : public stdair::CmdAbstract {
00024     public:
00030         static void fareRuleGeneration (const FareFilePath
&, stdair::BomRoot&);
00031     };
00032 }
00033 #endif // __SIMFQT_CMD_FAREPARSER_HPP

```

23.31 simfqt/command/FareParserHelper.cpp File Reference

```
#include <cassert>
#include <vector>
#include <fstream>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/basic/BasConst_Request.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/basic/BasParserTypes.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>
```

Classes

- struct [SIMFQT::FareParserHelper::FareRuleParser< Iterator >](#)

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](#)

23.32 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/basic/BasConst_Request.hpp>
00011 #include <stdair/bom/BomRoot.hpp>
00012 #include <stdair/service/Logger.hpp>
00013 // #define BOOST_SPIRIT_DEBUG
00014 #include <stdair/basic/BasParserTypes.hpp>
00015 // SIMFQT
00016 #include <simfqt/command/FareParserHelper.hpp>
00017 #include <simfqt/command/FareRuleGenerator.hpp>
00018 >
00019
00020
00021 namespace SIMFQT {
00022
00023     namespace FareParserHelper {
```

```

00024
00025 // ////////////////////////////////////////
00026 // Semantic actions
00027 // ////////////////////////////////////////
00028
00029 ParserSemanticAction::
00030 ParserSemanticAction (FareRuleStruct&
ioFareRule)
00031 : _fareRule (ioFareRule) {
00032 }
00033
00034 // ////////////////////////////////////////
00035 storeFareId::
00036 storeFareId (FareRuleStruct& ioFareRule)
00037 : ParserSemanticAction (ioFareRule) {
00038 }
00039
00040 // ////////////////////////////////////////
00041 void storeFareId::operator() (unsigned int iFareId,
                                boost::spirit::qi::unused_type,
                                boost::spirit::qi::unused_type) const {
00042     _fareRule.setFareID (iFareId);
00043
00044     // DEBUG
00045     //STDAIR_LOG_DEBUG ( "Fare Id: " << _fareRule.getFareID ());
00046     const stdair::AirlineCode_T lEmptyAirlineCode ("");
00047     _fareRule.setAirlineCode(lEmptyAirlineCode);
00048     _fareRule.clearAirlineCodeList();
00049     const stdair::ClassCode_T lEmptyClassCode ("");
00050     _fareRule.setClassCode(lEmptyClassCode);
00051     _fareRule.clearClassCodeList();
00052     _fareRule._itSeconds = 0;
00053 }
00054
00055 // ////////////////////////////////////////
00056 storeOrigin ::
00057 storeOrigin (FareRuleStruct& ioFareRule)
00058 : ParserSemanticAction (ioFareRule) {
00059 }
00060
00061 // ////////////////////////////////////////
00062 void storeOrigin::operator() (std::vector<char>
iChar,
                                boost::spirit::qi::unused_type,
                                boost::spirit::qi::unused_type) const {
00063     const stdair::AirportCode_T lOrigin (iChar.begin(), iChar.end());
00064     _fareRule.setOrigin (lOrigin);
00065     // DEBUG
00066     //STDAIR_LOG_DEBUG ( "Origin: " << _fareRule.getOrigin ());
00067 }
00068
00069 // ////////////////////////////////////////
00070 storeDestination ::
00071 storeDestination (FareRuleStruct&
ioFareRule)
00072 : ParserSemanticAction (ioFareRule) {
00073 }
00074
00075 // ////////////////////////////////////////
00076 void storeDestination::operator() (
std::vector<char> iChar,
                                boost::spirit::qi::unused_type,
                                boost::spirit::qi::unused_type) const {
00077     const stdair::AirportCode_T lDestination (iChar.begin(), iChar.end());
00078     _fareRule.setDestination (lDestination);
00079     // DEBUG
00080     //STDAIR_LOG_DEBUG ( "Destination: " << _fareRule.getDestination ());
00081 }
00082
00083 // ////////////////////////////////////////
00084 storeTripType ::
00085 storeTripType (FareRuleStruct& ioFareRule)
00086 : ParserSemanticAction (ioFareRule) {
00087 }
00088
00089 // ////////////////////////////////////////
00090 void storeTripType::operator() (std::vector<char>
iChar,
                                boost::spirit::qi::unused_type,
                                boost::spirit::qi::unused_type) const {
00091     const stdair::TripType_T lTripType (iChar.begin(), iChar.end());
00092     if (lTripType == "OW" || lTripType == "RT") {
00093         _fareRule.setTripType (lTripType);
00094     } else {
00095         // ERROR
00096         STDAIR_LOG_ERROR ("Invalid trip type " << lTripType);
00097     }
00098 }
00099
00100
00101
00102
00103
00104
00105

```

```

00106         // DEBUG
00107         //STDAIR_LOG_DEBUG ("TripType: " << _fareRule.getTripType ());
00108     }
00109
00110
00111         // //////////////////////////////////////
00112         storeDateRangeStart::
00113         storeDateRangeStart (FareRuleStruct&
00114 ioFareRule)
00115         : ParserSemanticAction (ioFareRule) {
00116     }
00117
00118         // //////////////////////////////////////
00119         void storeDateRangeStart::operator() (
00120 boost::spirit::qi::unused_type,
00121                                     boost::spirit::qi::unused_type,
00122                                     boost::spirit::qi::unused_type) const
00123     {
00124         const stdair::Date_T& lDateStart = _fareRule.calculateDate
00125 ();
00126         _fareRule.setDateRangeStart (lDateStart);
00127         // DEBUG
00128         //STDAIR_LOG_DEBUG ("Date Range Start: " << _fareRule.getDateRangeStart
00129 ());
00130     }
00131
00132         // //////////////////////////////////////
00133         storeDateRangeEnd::
00134         storeDateRangeEnd (FareRuleStruct&
00135 ioFareRule)
00136         : ParserSemanticAction (ioFareRule) {
00137     }
00138
00139         // //////////////////////////////////////
00140         void storeDateRangeEnd::operator() (
00141 boost::spirit::qi::unused_type,
00142                                     boost::spirit::qi::unused_type,
00143                                     boost::spirit::qi::unused_type) const {
00144         const stdair::Date_T& lDateEnd = _fareRule.calculateDate
00145 ();
00146         // As a Boost date period (DatePeriod_T) defines the last day of
00147         // the period to be end-date - one day, we have to add one day to that
00148         // end date before.
00149         const stdair::DateOffset_T oneDay (1);
00150         const stdair::Date_T lBoostDateEnd = lDateEnd + oneDay;
00151         _fareRule.setDateRangeEnd (lBoostDateEnd);
00152         // DEBUG
00153         //STDAIR_LOG_DEBUG ("Date Range End: " << _fareRule.getDateRangeEnd ());
00154     }
00155
00156         // //////////////////////////////////////
00157         storeStartRangeTime::
00158         storeStartRangeTime (FareRuleStruct&
00159 ioFareRule)
00160         : ParserSemanticAction (ioFareRule) {
00161     }
00162
00163         // //////////////////////////////////////
00164         void storeStartRangeTime::operator() (
00165 boost::spirit::qi::unused_type,
00166                                     boost::spirit::qi::unused_type,
00167                                     boost::spirit::qi::unused_type) const
00168     {
00169         const stdair::Duration_T& lTimeStart = _fareRule.calculateTime
00170 ();
00171         _fareRule.setTimeRangeStart (lTimeStart);
00172         // DEBUG
00173         //STDAIR_LOG_DEBUG ("Time Range Start: " << _fareRule.getTimeRangeStart
00174 ());
00175         // Reset the number of seconds
00176         _fareRule._itSeconds = 0;
00177     }
00178
00179         // //////////////////////////////////////
00180         storeEndRangeTime::
00181         storeEndRangeTime (FareRuleStruct&
00182 ioFareRule)
00183         : ParserSemanticAction (ioFareRule) {
00184     }
00185
00186         // //////////////////////////////////////
00187         void storeEndRangeTime::operator() (
00188 boost::spirit::qi::unused_type,
00189                                     boost::spirit::qi::unused_type,
00190                                     boost::spirit::qi::unused_type) const {
00191         const stdair::Duration_T& lTimeEnd = _fareRule.calculateTime
00192 ();

```

```

00177     _fareRule.setTimeRangeEnd (lTimeEnd);
00178     // DEBUG
00179     //STDAIR_LOG_DEBUG ("Time Range End: " << _fareRule.getTimeRangeEnd ());
00180     // Reset the number of seconds
00181     _fareRule._itSeconds = 0;
00182 }
00183
00184 // //////////////////////////////////////
00185 storePOS ::
00186 storePOS (FareRuleStruct& ioFareRule)
00187 : ParserSemanticAction (ioFareRule) {
00188 }
00189
00190 // //////////////////////////////////////
00191 void storePOS::operator() (std::vector<char> iChar,
00192                          boost::spirit::qi::unused_type,
00193                          boost::spirit::qi::unused_type) const {
00194     const stdair::CityCode_T lPOS (iChar.begin(), iChar.end());
00195     if (lPOS == _fareRule.getOrigin() || lPOS == _fareRule
00196 .getDestination()) {
00197         _fareRule.setPOS (lPOS);
00198     } else if (lPOS == "ROW") {
00199         const stdair::CityCode_T lPOSROW ("ROW");
00200         _fareRule.setPOS (lPOSROW);
00201     } else if (lPOS == stdair::DEFAULT_POS) {
00202         _fareRule.setPOS (stdair::DEFAULT_POS);
00203     } else {
00204         // ERROR
00205         STDAIR_LOG_ERROR ("Invalid point of sale " << lPOS);
00206     }
00207     // DEBUG
00208     //STDAIR_LOG_DEBUG ("POS: " << _fareRule.getPOS ());
00209 }
00210
00211 // //////////////////////////////////////
00212 storeCabinCode ::
00213 storeCabinCode (FareRuleStruct& ioFareRule)
00214 : ParserSemanticAction (ioFareRule) {
00215 }
00216
00217 // //////////////////////////////////////
00218 void storeCabinCode::operator() (char iChar,
00219                                boost::spirit::qi::unused_type,
00220                                boost::spirit::qi::unused_type) const {
00221     std::ostringstream ostr;
00222     ostr << iChar;
00223     const std::string cabinCodeStr = ostr.str();
00224     const stdair::CabinCode_T& lCabinCode (cabinCodeStr);
00225     _fareRule.setCabinCode (lCabinCode);
00226     // DEBUG
00227     //STDAIR_LOG_DEBUG ("Cabin Code: " << _fareRule.getCabinCode ());
00228 }
00229
00230 // //////////////////////////////////////
00231 storeChannel ::
00232 storeChannel (FareRuleStruct& ioFareRule)
00233 : ParserSemanticAction (ioFareRule) {
00234 }
00235
00236 // //////////////////////////////////////
00237 void storeChannel::operator() (std::vector<char>
00238 iChar,
00239                              boost::spirit::qi::unused_type,
00240                              boost::spirit::qi::unused_type) const {
00241     const stdair::ChannelLabel_T lChannel (iChar.begin(), iChar.end());
00242     if (lChannel != "IN" && lChannel != "IF" && lChannel != "DN"
00243         && lChannel != "DF" && lChannel != stdair::DEFAULT_CHANNEL) {
00244         // ERROR
00245         STDAIR_LOG_ERROR ("Invalid channel " << lChannel);
00246     }
00247     _fareRule.setChannel (lChannel);
00248     // DEBUG
00249     //STDAIR_LOG_DEBUG ("Channel: " << _fareRule.getChannel ());
00250 }
00251
00252 // //////////////////////////////////////
00253 storeAdvancePurchase ::
00254 storeAdvancePurchase (FareRuleStruct&
00255 ioFareRule)
00256 : ParserSemanticAction (ioFareRule) {
00257 }
00258
00259 // //////////////////////////////////////
00260 void storeAdvancePurchase::operator() (

```

```

        unsigned int iAdvancePurchase,
00260                                     boost::spirit::qi::unused_type,
00261                                     boost::spirit::qi::unused_type)
    const {
00262         const stdair::DayDuration_T& lAdvancePurchase = iAdvancePurchase;
00263         _fareRule.setAdvancePurchase (lAdvancePurchase)
    ;
00264         // DEBUG
00265         //STDAIR_LOG_DEBUG ( "Advance Purchase: " << _fareRule.getAdvancePurchase
00266         ());
00267     }
00268     // //////////////////////////////////////
00269     storeSaturdayStay ::
00270     storeSaturdayStay (FareRuleStruct&
ioFareRule)
00271     : ParserSemanticAction (ioFareRule) {
00272     }
00273     // //////////////////////////////////////
00274     void storeSaturdayStay::operator() (char
00275     iSaturdayStay,
00276                                     boost::spirit::qi::unused_type,
00277                                     boost::spirit::qi::unused_type) const {
00278         bool lBool = false;
00279         if (iSaturdayStay == 'T') {
00280             lBool = true;
00281         } else {
00282             if (iSaturdayStay != 'F') {
00283                 // DEBUG
00284                 STDAIR_LOG_DEBUG ("Invalid saturdayStay char " << iSaturdayStay);
00285             }
00286         }
00287         const stdair::SaturdayStay_T lSaturdayStay (lBool);
00288         _fareRule.setSaturdayStay (lSaturdayStay);
00289         // DEBUG
00290         //STDAIR_LOG_DEBUG ("Saturday Stay: " << _fareRule.getSaturdayStay ());
00291     }
00292     // //////////////////////////////////////
00293     storeChangeFees ::
00294     storeChangeFees (FareRuleStruct&
ioFareRule)
00295     : ParserSemanticAction (ioFareRule) {
00296     }
00297     // //////////////////////////////////////
00298     void storeChangeFees::operator() (char
00299     iChangefees,
00300                                     boost::spirit::qi::unused_type,
00301                                     boost::spirit::qi::unused_type) const {
00302         bool lBool = false;
00303         if (iChangefees == 'T') {
00304             lBool = true;
00305         } else {
00306             if (iChangefees != 'F') {
00307                 // DEBUG
00308                 STDAIR_LOG_DEBUG ("Invalid change fees char " << iChangefees);
00309             }
00310         }
00311         const stdair::ChangeFees_T lChangefees (lBool);
00312         _fareRule.setChangeFees (lChangefees);
00313         // DEBUG
00314         //STDAIR_LOG_DEBUG ("Change fees: " << _fareRule.getChangeFees ());
00315     }
00316     // //////////////////////////////////////
00317     storeNonRefundable ::
00318     storeNonRefundable (FareRuleStruct&
ioFareRule)
00319     : ParserSemanticAction (ioFareRule) {
00320     }
00321     // //////////////////////////////////////
00322     void storeNonRefundable::operator() (char
00323     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         }

```

```

00336     }
00337 }
00338 const stdair::NonRefundable_T lNonRefundable (lBool);
00339 _fareRule.setNonRefundable (lNonRefundable);
00340 // DEBUG
00341 //STDAIR_LOG_DEBUG ("Non refundable: " << _fareRule.getNonRefundable
    ());
00342 }
00343
00344 // //////////////////////////////////////
00345 storeMinimumStay ::
00346 storeMinimumStay (FareRuleStruct&
ioFareRule)
00347 : ParserSemanticAction (ioFareRule) {
00348 }
00349
00350 // //////////////////////////////////////
00351 void storeMinimumStay::operator() (unsigned
int iMinStay,
00352                                     boost::spirit::qi::unused_type,
00353                                     boost::spirit::qi::unused_type) const {
00354     const stdair::DayDuration_T lMinStay = iMinStay;
00355     _fareRule.setMinimumStay (lMinStay);
00356     // DEBUG
00357     //STDAIR_LOG_DEBUG ("Minimum Stay: " << _fareRule.getMinimumStay ());
00358 }
00359
00360 // //////////////////////////////////////
00361 storeFare ::
00362 storeFare (FareRuleStruct& ioFareRule)
00363 : ParserSemanticAction (ioFareRule) {
00364 }
00365
00366 // //////////////////////////////////////
00367 void storeFare::operator() (double iFare,
00368                             boost::spirit::qi::unused_type,
00369                             boost::spirit::qi::unused_type) const {
00370     const stdair::PriceValue_T lFare = iFare;
00371     _fareRule.setFare (lFare);
00372     // DEBUG
00373     //STDAIR_LOG_DEBUG ("Fare: " << _fareRule.getFare ());
00374 }
00375
00376 // //////////////////////////////////////
00377 storeAirlineCode ::
00378 storeAirlineCode (FareRuleStruct&
ioFareRule)
00379 : ParserSemanticAction (ioFareRule) {
00380 }
00381
00382 // //////////////////////////////////////
00383 void storeAirlineCode::operator() (
std::vector<char> iChar,
00384                                     boost::spirit::qi::unused_type,
00385                                     boost::spirit::qi::unused_type) const {
00386     const stdair::AirlineCode_T lAirlineCode (iChar.begin(), iChar.end());
00387     // Insertion of this airline Code list in the whole AirlineCode name
00388     _fareRule.addAirlineCode (lAirlineCode);
00389     // DEBUG
00390     //STDAIR_LOG_DEBUG ( "Airline code: " << lAirlineCode);
00391 }
00392
00393 // //////////////////////////////////////
00394 storeClass ::
00395 storeClass (FareRuleStruct& ioFareRule)
00396 : ParserSemanticAction (ioFareRule) {
00397 }
00398
00399 // //////////////////////////////////////
00400 void storeClass::operator() (std::vector<char> iChar
,
00401                             boost::spirit::qi::unused_type,
00402                             boost::spirit::qi::unused_type) const {
00403     std::ostringstream ostr;
00404     for (std::vector<char>::const_iterator lItVector = iChar.begin();
00405          lItVector != iChar.end();
00406          lItVector++) {
00407         ostr << *lItVector;
00408     }
00409     const std::string classCodeStr = ostr.str();
00410     const stdair::ClassCode_T lClassCode (classCodeStr);
00411     // Insertion of this class Code list in the whole classCode name
00412     _fareRule.addClassCode (lClassCode);
00413     // DEBUG
00414     //STDAIR_LOG_DEBUG ("Class Code: " << lClassCode);
00415 }
00416

```

```

00417
00418 ///////////////////////////////////////////////////////////////////
00419 doEndFare::
00420 doEndFare (stdair::BomRoot& ioBomRoot,
00421            FareRuleStruct& ioFareRule)
00422 : ParserSemanticAction (ioFareRule),
00423   _bomRoot (ioBomRoot) {
00424 }
00425
00426 ///////////////////////////////////////////////////////////////////
00427 void doEndFare::operator() (
    boost::spirit::qi::unused_type,
00428                                boost::spirit::qi::unused_type,
00429                                boost::spirit::qi::unused_type) const {
00430     // DEBUG
00431     //STDAIR_LOG_DEBUG ("Do End");
00432     // Generation of the fare rule object.
00433     FareRuleGenerator::createAirportPair (_bomRoot, _fareRule
);
00434     STDAIR_LOG_DEBUG(_fareRule.describe());
00435 }
00436
00437 ///////////////////////////////////////////////////////////////////
00438 //
00439 // Utility Parsers
00440 //
00441 ///////////////////////////////////////////////////////////////////
00442 namespace bsq = boost::spirit::qi;
00443 namespace bsa = boost::spirit::ascii;
00444
00445 stdair::int1_p_t int1_p;
00446
00447 stdair::uint2_p_t uint2_p;
00448
00449 stdair::uint4_p_t uint4_p;
00450
00451 stdair::uint1_4_p_t uint1_4_p;
00452
00453 stdair::hour_p_t hour_p;
00454
00455 stdair::minute_p_t minute_p;
00456
00457 stdair::second_p_t second_p;
00458
00459 stdair::year_p_t year_p;
00460
00461 stdair::month_p_t month_p;
00462
00463 stdair::day_p_t day_p;
00464
00465 //
00466 // (Boost Spirit) Grammar Definition
00467 //
00468
00469 template <typename Iterator>
00470 struct FareRuleParser :
00471     public boost::spirit::qi::grammar<Iterator,
00472                                     boost::spirit::ascii::space_type> {
00473
00474     FareRuleParser (stdair::BomRoot& ioBomRoot,
00475                     FareRuleStruct& ioFareRule) :
00476
00477         FareRuleParser::base_type(start),
00478         _bomRoot(ioBomRoot), _fareRule(ioFareRule) {
00479
00480         start = *(comments | fare_rule);
00481
00482         comments = (bsq::lexeme[bsq::repeat(2)[bsa::char_('/')]
00483                                >> +(bsa::char_ - bsq::eol)
00484                                >> bsq::eol]
00485                    | bsq::lexeme[bsa::char_('/') >> bsa::char_('*')
00486                                >> +(bsa::char_ - bsa::char_('*'))
00487                                >> bsa::char_('*') >> bsa::char_('/')]);
00488
00489         fare_rule = fare_key
00490             >> +( ';' >> segment )
00491             >> fare_rule_end[doEndFare(_bomRoot,
00492                                     _fareRule)];
00493
00494         fare_rule_end = bsa::char_(';');
00495
00496         fare_key = fare_id
00497             >> ';' >> origin >> ';' >> destination
00498             >> ';' >> tripType
00499             >> ';' >> dateRangeStart >> ';' >> dateRangeEnd
00500             >> ';' >> timeRangeStart >> ';' >> timeRangeEnd
00501             >> ';' >> point_of_sale >> ';' >> cabinCode >>
00502             ';' >> channel
00503             >> ';' >> advancePurchase >> ';' >> saturdayStay
00504             >> ';' >> changeFees >> ';' >> nonRefundable

```



```

00537         >> ';' >> minimumStay >> ';' >> fare;
00538
00539         fare_id = uint1_4_p[storeFareId(_fareRule
00540     )];
00541         origin = bsq::repeat(3)[bsa::char_("A-Z")][storeOrigin(
00542     _fareRule)];
00543         destination =
00544             bsq::repeat(3)[bsa::char_("A-Z")][storeDestination(
00545     _fareRule)];
00546         tripType =
00547             bsq::repeat(2)[bsa::char_("A-Z")][storeTripType(_fareRule
00548     )];
00549         dateRangeStart = date[storeDateRangeStart
00550     (_fareRule)];
00551         dateRangeEnd = date[storeDateRangeEnd(
00552     _fareRule)];
00553         date = bsq::lexeme
00554             [year_p[boost::phoenix::ref(_fareRule._itYear) =
00555     bsq::labels::_1]
00556             >> '-'
00557             >> month_p[boost::phoenix::ref(_fareRule._itMonth
00558     ) = bsq::labels::_1]
00559             >> '-'
00560             >> day_p[boost::phoenix::ref(_fareRule._itDay) =
00561     bsq::labels::_1] ];
00562         timeRangeStart = time[storeStartRangeTime
00563     (_fareRule)];
00564         timeRangeEnd = time[storeEndRangeTime(
00565     _fareRule)];
00566         time = bsq::lexeme
00567             [hour_p[boost::phoenix::ref(_fareRule._itHours)
00568     = bsq::labels::_1]
00569             >> ':'
00570             >> minute_p[boost::phoenix::ref(_fareRule._itMinutes
00571     ) = bsq::labels::_1]
00572             >> - (';' >> second_p[boost::phoenix::ref(_fareRule.
00573     _itSeconds) = bsq::labels::_1]) ];
00574         point_of_sale = bsq::repeat(3)[bsa::char_("A-Z")][storePOS
00575     (_fareRule)];
00576         cabinCode = bsa::char_("A-Z")[storeCabinCode(
00577     _fareRule)];
00578         channel = bsq::repeat(2)[bsa::char_("A-Z")][storeChannel
00579     (_fareRule)];
00580         advancePurchase = uint1_4_p[storeAdvancePurchase
00581     (_fareRule)];
00582         saturdayStay = bsa::char_("A-Z")[storeSaturdayStay
00583     (_fareRule)];
00584         changeFees = bsa::char_("A-Z")[storeChangeFees(
00585     _fareRule)];
00586         nonRefundable = bsa::char_("A-Z")[storeNonRefundable
00587     (_fareRule)];
00588         minimumStay = uint1_4_p[storeMinimumStay
00589     (_fareRule)];
00590         fare = bsq::double_[storeFare(_fareRule)];
00591         segment = bsq::repeat(2)[bsa::char_("A-Z")][storeAirlineCode
00592     (_fareRule)]
00593             >> ';'
00594             >> bsq::repeat(1,bsq::inf)[bsa::char_("A-Z")][storeClass(
00595     _fareRule)];
00596
00597         //BOOST_SPIRIT_DEBUG_NODE (FareRuleParser);
00598         BOOST_SPIRIT_DEBUG_NODE (start);
00599         BOOST_SPIRIT_DEBUG_NODE (comments);
00600         BOOST_SPIRIT_DEBUG_NODE (fare_rule);
00601         BOOST_SPIRIT_DEBUG_NODE (fare_rule_end);
00602         BOOST_SPIRIT_DEBUG_NODE (fare_key);
00603         BOOST_SPIRIT_DEBUG_NODE (fare_id);
00604         BOOST_SPIRIT_DEBUG_NODE (origin);

```

```

00600     BOOST_SPIRIT_DEBUG_NODE (destination);
00601     BOOST_SPIRIT_DEBUG_NODE (tripType);
00602     BOOST_SPIRIT_DEBUG_NODE (dateRangeStart);
00603     BOOST_SPIRIT_DEBUG_NODE (dateRangeEnd);
00604     BOOST_SPIRIT_DEBUG_NODE (date);
00605     BOOST_SPIRIT_DEBUG_NODE (timeRangeStart);
00606     BOOST_SPIRIT_DEBUG_NODE (time);
00607     BOOST_SPIRIT_DEBUG_NODE (point_of_sale);
00608     BOOST_SPIRIT_DEBUG_NODE (cabinCode);
00609     BOOST_SPIRIT_DEBUG_NODE (channel);
00610     BOOST_SPIRIT_DEBUG_NODE (advancePurchase);
00611     BOOST_SPIRIT_DEBUG_NODE (saturdayStay);
00612     BOOST_SPIRIT_DEBUG_NODE (changeFees);
00613     BOOST_SPIRIT_DEBUG_NODE (nonRefundable);
00614     BOOST_SPIRIT_DEBUG_NODE (minimumStay);
00615     BOOST_SPIRIT_DEBUG_NODE (fare);
00616     BOOST_SPIRIT_DEBUG_NODE (segment);
00617
00618 }
00619
00620 // Instantiation of rules
00621 boost::spirit::qi::rule<Iterator,
00622     boost::spirit::ascii::space_type>
00623 start, comments, fare_rule, fare_rule_end
00624 , fare_key, fare_id, origin,
00625     destination, tripType, dateRangeStart,
00626     dateRangeEnd, date,
00627     timeRangeStart, timeRangeEnd, time,
00628     point_of_sale, cabinCode, channel,
00629     advancePurchase, saturdayStay, changeFees
00630 , nonRefundable, minimumStay,
00631     fare, segment;
00632
00633 // Parser Context
00634 stdair::BomRoot& _bomRoot;
00635 FareRuleStruct& _fareRule;
00636 };
00637
00638 //
00639 // Entry class for the file parser
00640 //
00641
00642 // //////////////////////////////////////
00643 FareRuleFileParser::
00644 FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00645     const stdair::Filename_T& iFilename)
00646     : _filename (iFilename), _bomRoot (ioBomRoot) {
00647     init();
00648 }
00649
00650 // //////////////////////////////////////
00651 void FareRuleFileParser::init() {
00652     // Check that the file exists and is readable
00653     const bool doesExistAndIsReadable =
00654         stdair::BasFileMgr::doesExistAndIsReadable (_filename);
00655
00656     if (doesExistAndIsReadable == false) {
00657         STDAIR_LOG_ERROR ("The fare schedule file " << _filename
00658             << " does not exist or can not be read.");
00659
00660         throw FareInputFileNotFoundException ("The
00661             fare file " + _filename
00662                 + " does not exist or can not be
00663             read");
00664     }
00665
00666 // //////////////////////////////////////
00667 void FareRuleFileParser::generateFareRules
00668 () {
00669     STDAIR_LOG_DEBUG ("Parsing fare input file: " << _filename);
00670
00671     // File to be parsed
00672     const std::string* lFileName = &_filename;
00673     const char *lChar = (*lFileName).c_str();
00674     std::ifstream fileToBeParsed(lChar, std::ios_base::in);
00675
00676     // Check if the filename exist and can be open
00677     if (fileToBeParsed.is_open() == false) {
00678         STDAIR_LOG_ERROR ("The fare file " << _filename << " can not be open."
00679             << std::endl);
00680
00681         throw FareInputFileNotFoundException ("The

```

```

    file " + _filename
00682                                     + " does not exist or can not be
    read");
00683 }
00684
00685 // Create an input iterator
00686 stdair::base_iterator_t inputBegin (fileToBeParsed);
00687
00688 // Convert input iterator to an iterator usable by spirit parser
00689 stdair::iterator_t
00690     start (boost::spirit::make_default_multi_pass (inputBegin));
00691 stdair::iterator_t end;
00692
00693 // Initialise the parser (grammar) with the helper/staging structure.
00694 FareParserHelper::FareRuleParser<stdair::iterator_t>
    lFPParser(_bomRoot, _fareRule);
00695
00696 // Launch the parsing of the file and, thanks to the doEndFare
00697 // call-back structure, the building of the whole BomRoot BOM
00698 const bool hasParsingBeenSuccessful =
00699     boost::spirit::qi::phrase_parse (start, end, lFPParser,
00700                                     boost::spirit::ascii::space);
00701
00702 if (hasParsingBeenSuccessful == false) {
00703     STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00704                     << " failed");
00705     throw FareFileParsingFailedException ("
    Parsing of fare input file: "
00706                                     + _filename + " failed");
00707 }
00708
00709 if (start != end) {
00710     STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00711                     << " failed");
00712     throw FareFileParsingFailedException ("
    Parsing of fare input file: "
00713                                     + _filename + " failed");
00714 }
00715
00716 if (hasParsingBeenSuccessful == true && start == end) {
00717     STDAIR_LOG_DEBUG ("Parsing of fare input file: " << _filename
00718                     << " succeeded");
00719 }
00720 }
00721 }
00722 }
00723 }

```

23.33 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/FareRuleStruct.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`

23.34 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         {
00037             storeFareId (FareRuleStruct&);
00038             void operator() (unsigned int,
00039                             boost::spirit::qi::unused_type,
00040                             boost::spirit::qi::unused_type) const;
00041         };
00042
00043         struct storeOrigin : public ParserSemanticAction
00044         {
00045             storeOrigin (FareRuleStruct&);
00046             void operator() (std::vector<char>,
00047                             boost::spirit::qi::unused_type,
00048                             boost::spirit::qi::unused_type) const;
00049         };
00050
00051         struct storeDestination : public ParserSemanticAction
00052         {
00053             storeDestination (FareRuleStruct&);
00054             void operator() (std::vector<char>,
00055                             boost::spirit::qi::unused_type,
00056                             boost::spirit::qi::unused_type) const;
00057         };
00058     }
00059 }

```

```

00064         boost::spirit::qi::unused_type,
00065         boost::spirit::qi::unused_type) const;
00066     };
00067
00069     struct storeTripType : public ParserSemanticAction
00070     {
00071         storeTripType (FareRuleStruct&);
00073         void operator() (std::vector<char>,
00074             boost::spirit::qi::unused_type,
00075             boost::spirit::qi::unused_type) const;
00076     };
00077
00078
00080     struct storeDateRangeStart : public ParserSemanticAction
00081     {
00082         storeDateRangeStart (FareRuleStruct&);
00084         void operator() (boost::spirit::qi::unused_type,
00085             boost::spirit::qi::unused_type,
00086             boost::spirit::qi::unused_type) const;
00087     };
00088
00090     struct storeDateRangeEnd : public ParserSemanticAction
00091     {
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
00101     {
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
00111     {
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
00131     {
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
00141     {
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
00151     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
00161     {
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
00171     {
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
00181 {
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
00191 {
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
00201 {
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
00211 {
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
00221 {
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
00231 {
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

```

23.35 simfqt/command/FareQuoter.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <stdair/basic/BasConst_BomDisplay.hpp>
#include <stdair/basic/BasConst_Request.hpp>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/ParsedKey.hpp>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/bom/InventoryKey.hpp>
#include <stdair/bom/FlightDateKey.hpp>
#include <stdair/bom/SegmentDateKey.hpp>
#include <stdair/bom/AirlineClassList.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/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.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](#)

23.36 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/basic/BasConst_Request.hpp>
00010 #include <stdair/bom/BomKeyManager.hpp>
00011 #include <stdair/bom/ParsedKey.hpp>
00012 #include <stdair/bom/BomManager.hpp>
00013 #include <stdair/bom/BomRoot.hpp>
00014 #include <stdair/bom/InventoryKey.hpp>
00015 #include <stdair/bom/FlightDateKey.hpp>
00016 #include <stdair/bom/SegmentDateKey.hpp>
00017 #include <stdair/bom/AirlineClassList.hpp>
00018 #include <stdair/bom/AirportPair.hpp>
00019 #include <stdair/bom/PosChannel.hpp>
00020 #include <stdair/bom/DatePeriod.hpp>
00021 #include <stdair/bom/TimePeriod.hpp>
00022 #include <stdair/bom/FareFeatures.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 #include <stdair/bom/TravelSolutionStruct.hpp>
00025 #include <stdair/service/Logger.hpp>
00026 #include <stdair/bom/key_types.hpp>
00027 // SimFQT
00028 #include <simfqt/SIMFQT_Types.hpp>
00029 #include <simfqt/command/FareQuoter.hpp>
00030
00031 namespace SIMFQT {
00032
00033     bool FareQuoter::_atLeastOneAvailableDateRule = false;
00034     bool FareQuoter::_atLeastOneAvailablePosChannel = false;
00035     bool FareQuoter::_atLeastOneAvailableTimeRule = false;
00036     bool FareQuoter::_atLeastOneAvailableFeaturesRule = false;
```

```

00037 bool FareQuoter::_atLeastOneAvailableAirlineClassRule= false;
00038
00039 // //////////////////////////////////////
00040 FareQuoter::FareQuoter() {
00041     assert (false);
00042 }
00043
00044 // //////////////////////////////////////
00045 FareQuoter::FareQuoter(const FareQuoter&) {
00046     assert (false);
00047 }
00048
00049 // //////////////////////////////////////
00050 FareQuoter::~FareQuoter() {
00051 }
00052
00053 // //////////////////////////////////////
00054 void FareQuoter::reset() {
00055     _atLeastOneAvailableDateRule = false;
00056     _atLeastOneAvailablePosChannel = false;
00057     _atLeastOneAvailableTimeRule = false;
00058     _atLeastOneAvailableFeaturesRule = false;
00059     _atLeastOneAvailableAirlineClassRule = false;
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);

```



```

00121 // Fare rule(s) with the same origin and destination airports exist(s), now
00122 // the date range need to be checked.
00123 const stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00124 priceQuote(iBookingRequest, ioTravelSolution, lAirportPair);
00125
00126 if (_atLeastOneAvailableAirlineClassRule == false) {
00127     displayMissingFareRuleMessage(iBookingRequest, ioTravelSolution);
00128 }
00129 }
00130
00131 // //////////////////////////////////////
00132 void FareQuoter::
00133 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00134            stdair::TravelSolutionStruct& ioTravelSolution,
00135            const stdair::AirportPair& iAirportPair) {
00136
00137     // Get the first segment path parsed key.
00138     const stdair::ParsedKey lFirstSPParsedKey =
00139         getFirstSPParsedKey(ioTravelSolution);
00140
00141     // Get the date of the first segment date key.
00142     const stdair::FlightDateKey& lFlightDateKey =
00143         lFirstSPParsedKey.getFlightDateKey();
00144     const stdair::Date_T& lSPDate = lFlightDateKey.getDepartureDate();
00145
00146     // Get the list of the fare date ranges.
00147     const stdair::DatePeriodList_T& lFareDatePeriodList =
00148         stdair::BomManager::getList<stdair::DatePeriod> (iAirportPair);
00149
00150     // Browse the list of the fare rules date range.
00151     for (stdair::DatePeriodList_T::const_iterator itDateRange =
00152          lFareDatePeriodList.begin();
00153          itDateRange != lFareDatePeriodList.end(); ++itDateRange) {
00154
00155         const stdair::DatePeriod* lCurrentFareDatePeriod_ptr = *itDateRange ;
00156         assert (lCurrentFareDatePeriod_ptr != NULL);
00157
00158         // Select the fare rules having a corresponding date range.
00159         const bool isDepartureDateValid =
00160             lCurrentFareDatePeriod_ptr->isDepartureDateValid (lSPDate);
00161
00162         // If a fare rule has a corresponding date range, its channel and
00163         // position
00164         // need to be checked.
00165         if (isDepartureDateValid == true) {
00166             _atLeastOneAvailableDateRule = true;
00167             const stdair::DatePeriod& lCurrentFareDatePeriod =
00168                 *lCurrentFareDatePeriod_ptr;
00169             priceQuote (iBookingRequest, ioTravelSolution,
00170                        lCurrentFareDatePeriod, iAirportPair);
00171         }
00172     }
00173 }
00174
00175 // //////////////////////////////////////
00176 void FareQuoter::
00177 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00178            stdair::TravelSolutionStruct& ioTravelSolution,
00179            const stdair::DatePeriod& iFareDatePeriod,
00180            const stdair::AirportPair& iAirportPair) {
00181
00182     // Get the point-of-sale of the booking request.
00183     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00184
00185     // Get the booking request channel.
00186     const stdair::ChannelLabel_T& lChannel =
00187         iBookingRequest.getBookingChannel();
00188
00189     // Construct the corresponding POS-channel primary key.
00190     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00191
00192     // Search for the fare rules having the same point-of-sale and channel as
00193     // the travel solution.
00194     const stdair::PosChannelList_T lFarePosChannelList =
00195         stdair::BomManager::getList<stdair::PosChannel> (iFareDatePeriod);
00196
00197     // Browse the list of the fare rules pos channel.
00198     for (stdair::PosChannelList_T::const_iterator itPosChannel =
00199          lFarePosChannelList.begin();
00200          itPosChannel != lFarePosChannelList.end();
00201          ++itPosChannel) {
00202         const stdair::PosChannel* lCurrentFarePosChannel_ptr = *itPosChannel;
00203         assert (lCurrentFarePosChannel_ptr != NULL);
00204
00205         // Get the point-of-sale and channel of the current fare rule.
00206         const stdair::CityCode_T& lCurrentPointOfSale =

```

```

00207         lCurrentFarePosChannel_ptr->getPos();
00208         const stdair::ChannelLabel_T& lCurrentChannel =
00209             lCurrentFarePosChannel_ptr->getChannel();
00210
00211         // Select the fare rules having a corresponding pos channel.
00212         if (lCurrentPointOfSale == lPointOfSale || lCurrentPointOfSale ==
stdair::DEFAULT_POS) {
00213             if (lCurrentChannel == lChannel || lCurrentChannel ==
stdair::DEFAULT_CHANNEL) {
00214                 _atLeastOneAvailablePosChannel = true;
00215                 // Fare rule(s) with the same point-of-sale and channel exist(s), now
00216                 // the time range need to be checked.
00217                 const stdair::PosChannel& lFarePosChannel= *
lCurrentFarePosChannel_ptr;
00218                 STDAIR_LOG_DEBUG (lCurrentPointOfSale + " " + lCurrentChannel);
00219                 priceQuote (iBookingRequest, ioTravelSolution, lFarePosChannel);
00220             }
00221         }
00222     }
00223 }
00224 }
00225
00226 // //////////////////////////////////////
00227 void FareQuoter::
00228 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00229             stdair::TravelSolutionStruct& ioTravelSolution,
00230             const stdair::PosChannel& iFarePosChannel) {
00231
00232     // Get the first segment path parsed key.
00233     const stdair::ParsedKey lFirstSPParsedKey =
00234         getFirstSPParsedKey(ioTravelSolution);
00235
00236     // Get the segment boarding time of the segment path.
00237     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00238
00239     // Get the list of the fare rules time period.
00240     const stdair::TimePeriodList_T& lFareTimePeriodList =
00241         stdair::BomManager::getList<stdair::TimePeriod> (iFarePosChannel);
00242
00243     // Browse the list of the fare rules time range.
00244     for (stdair::TimePeriodList_T::const_iterator itTimeRange =
00245         lFareTimePeriodList.begin();
00246         itTimeRange != lFareTimePeriodList.end();
00247         ++itTimeRange) {
00248         const stdair::TimePeriod* lCurrentFareTimePeriod_ptr = *itTimeRange ;
00249         assert (lCurrentFareTimePeriod_ptr != NULL);
00250
00251         // Select the fare rules having a corresponding time range.
00252         const bool isDepartureTimeValid =
00253             lCurrentFareTimePeriod_ptr->isDepartureTimeValid (lSPTime);
00254
00255         // If a fare rule has a corresponding time range, its advanced purchase,
00256         // trip type and minimum stay duration need to be checked.
00257         if (isDepartureTimeValid) {
00258             _atLeastOneAvailableTimeRule = true;
00259             const stdair::TimePeriod& lCurrentFareTimePeriod =
00260                 *lCurrentFareTimePeriod_ptr;
00261             priceQuote (iBookingRequest, ioTravelSolution,
00262                 lCurrentFareTimePeriod, iFarePosChannel);
00263         }
00264     }
00265 }
00266
00267 // //////////////////////////////////////
00268 void FareQuoter::
00269 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00270             stdair::TravelSolutionStruct& ioTravelSolution,
00271             const stdair::TimePeriod& iFareTimePeriod,
00272             const stdair::PosChannel& iFarePosChannel) {
00273
00274     // Get the stay duration of the booking request.
00275     const stdair::DayDuration_T& lStayDuration=
00276         iBookingRequest.getStayDuration();
00277
00278     // Get the booking request trip type.
00279     const stdair::TripType_T& lTripType =
00280         iBookingRequest.getTripType();
00281
00282     // Get the booking request date time.
00283     const stdair::DateTime_T& lRequestDateTime =
00284         iBookingRequest.getRequestDateTime();
00285
00286     // Get the referenced departure date of the segment path.
00287     const stdair::ParsedKey lFirstSPParsedKey =
00288         getFirstSPParsedKey(ioTravelSolution);
00289     const stdair::Date_T& lSPDate =

```

```

00291     lFirstSPParsedKey.getFlightDateKey().getDepartureDate();
00292
00293     // Get the segment boarding time of the segment path.
00294     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00295
00296     // Construct the date-time type corresponding to the flight date
00297     const stdair::DateTime_T lSPDateTime (lSPDate, lSPTime);
00298
00299     bool isTripTypeValid = false;
00300     bool isStayDurationValid = false;
00301     bool isAdvancePurchaseValid = false;
00302
00303     // Get the list of the fare features (if such list exists: the POS
00304     // and channel couple can be only present in a yield rule).
00305     const bool hasFareFeaturesList =
00306         stdair::BomManager::hasList<stdair::FareFeatures> (iFareTimePeriod);
00307     if (hasFareFeaturesList == false) {
00308         return;
00309     }
00310     assert (hasFareFeaturesList == true);
00311     const stdair::FareFeaturesList_T& lFareFeaturesList =
00312         stdair::BomManager::getList<stdair::FareFeatures> (iFareTimePeriod);
00313
00314     // Browse the list of the fare rules features.
00315     for (stdair::FareFeaturesList_T::const_iterator itFareFeatures =
00316         lFareFeaturesList.begin();
00317         itFareFeatures != lFareFeaturesList.end();
00318         ++itFareFeatures) {
00319         const stdair::FareFeatures* lCurrentFareFeatures_ptr =
00320             *itFareFeatures;
00321         assert (lCurrentFareFeatures_ptr != NULL);
00322
00323         // Does the current fare features correspond to a correct trip
00324         // type?
00325         isTripTypeValid =
00326             lCurrentFareFeatures_ptr->isTripTypeValid (lTripType);
00327         // Does the current fare features correspond to a correct stay
00328         // duration?
00329         isStayDurationValid =
00330             lCurrentFareFeatures_ptr->isStayDurationValid (lStayDuration);
00331         // Does the current fare features correspond to a correct advanced
00332         // purchase?
00333         isAdvancePurchaseValid = lCurrentFareFeatures_ptr->
00334             isAdvancePurchaseValid (lRequestDateTime,
00335                                     lSPDateTime);
00336
00337         // Search for the fare rules having corresponding features.
00338         if (isStayDurationValid && isAdvancePurchaseValid && isTripTypeValid){
00339             _atLeastOneAvailableFeaturesRule = true;
00340             // Create a fare structure for the travel solution.
00341             stdair::FareOptionStruct lFareOption;
00342             const stdair::ChangeFees_T& lChangeFees =
00343                 lCurrentFareFeatures_ptr->getChangeFees();
00344             // Set the fare change fees.
00345             lFareOption.setChangeFees (lChangeFees);
00346             const stdair::NonRefundable_T& lNonRefundable =
00347                 lCurrentFareFeatures_ptr->getRefundableOption();
00348             // Set the fare refundable option.
00349             lFareOption.setNonRefundable (lNonRefundable);
00350             const stdair::SaturdayStay_T& lSaturdayStay =
00351                 lCurrentFareFeatures_ptr->getSaturdayStay();
00352             // Set the fare saturday night stay option.
00353             lFareOption.setSaturdayStay (lSaturdayStay);
00354             const stdair::FareFeatures& lCurrentFareFeatures =
00355                 *lCurrentFareFeatures_ptr;
00356             priceQuote (iBookingRequest, ioTravelSolution,
00357                         lCurrentFareFeatures, iFarePosChannel,
00358                         lFareOption);
00359         }
00360     }
00361 }
00362 }
00363
00364 // //////////////////////////////////////
00365 void FareQuoter::
00366 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00367             stdair::TravelSolutionStruct& ioTravelSolution,
00368             const stdair::FareFeatures& iFareFeatures,
00369             const stdair::PosChannel& iFarePosChannel,
00370             stdair::FareOptionStruct& iFareOption) {
00371
00372     // Get the segment-path of the travel solution.
00373     const stdair::SegmentPath_T& lSegmentPath =
00374         ioTravelSolution.getSegmentPath();
00375
00376     // Get the list of the fare rules.
00377

```

```

00378     const stdair::AirlineClassListList_T& lAirlineClassListList =
00379         stdair::BomManager::getList<stdair::AirlineClassList> (iFareFeatures);
00380
00381     bool lCorrectAirlineRule = false;
00382     bool lAtLeastOneDifferentAirline = false;
00383
00384     // Browse the list of airline code list and search for the fare rules
00385     // having a corresponding airline list.
00386     for (stdair::AirlineClassListList_T::const_iterator itAirlineClassList =
00387         lAirlineClassListList.begin();
00388         itAirlineClassList != lAirlineClassListList.end();
00389         ++itAirlineClassList) {
00390         const stdair::AirlineClassList* lCurrentAirlineClassList_ptr =
00391             *itAirlineClassList;
00392         assert (lCurrentAirlineClassList_ptr != NULL);
00393
00394         lCorrectAirlineRule = true;
00395         lAtLeastOneDifferentAirline = false;
00396
00397         const stdair::ClassList_StringList_T lClassList_StringList =
00398             lCurrentAirlineClassList_ptr->getAirlineCodeList();
00399
00400         // Compare the segment path airline list with the fare rule airline list.
00401         if (lClassList_StringList.size() == lSegmentPath.size()) {
00402             // If the two sizes are equal, we need to compare the airline codes.
00403             stdair::SegmentPath_T::const_iterator itSegmentPath =
00404                 lSegmentPath.begin();
00405
00406             stdair::ClassList_StringList_T::const_iterator itClassList_String =
00407                 lClassList_StringList.begin();
00408             // Browse the segment path airline code list (while the segment path
00409             // airline list is equal to the fare rule airline list).
00410             while (itSegmentPath != lSegmentPath.end()
00411                 && lAtLeastOneDifferentAirline == false) {
00412
00413                 // Get the segment airline code.
00414                 const std::string lSegmentDateKey = *itSegmentPath;
00415                 const stdair::ParsedKey& lParsedKey =
00416                     stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00417                 const stdair::InventoryKey& lInventoryKey =
00418                     lParsedKey.getInventoryKey();
00419                 const stdair::AirlineCode_T& lSegmentAirlineCode =
00420                     lInventoryKey.getAirlineCode();
00421
00422                 // Get the fare rule airline code.
00423                 const stdair::AirlineCode_T& lFareRuleAirlineCode =
00424                     *itClassList_String;
00425
00426                 if (lSegmentAirlineCode != lFareRuleAirlineCode) {
00427                     lAtLeastOneDifferentAirline = true;
00428                 }
00429                 itSegmentPath++;
00430                 itClassList_String++;
00431             }
00432
00433         } else {
00434             // If the two sizes are different, the fare rule does not match the
00435             // travel solution into question.
00436             lCorrectAirlineRule = false;
00437         }
00438
00439         // If one segment airline code and one fare rule airline code are
00440         // different then the fare rule does not match the travel solution.
00441         if (lAtLeastOneDifferentAirline == true) {
00442             lCorrectAirlineRule = false;
00443         }
00444
00445         // If the current fare rule is a match, add the fare option structure
00446         // to the travel solution into question.
00447         if (lCorrectAirlineRule == true) {
00448             _atLeastOneAvailableAirlineClassRule = true;
00449             // Get the booking request trip type.
00450             const stdair::TripType_T& lTripType =
00451                 iBookingRequest.getTripType();
00452
00453             // Get the travel fare.
00454             stdair::Fare_T lFare =
00455                 lCurrentAirlineClassList_ptr->getFare();
00456             // If the trip into question is the inbound or outbound part of a round
00457             trip,
00458             // the applicable fare is a half RT fare.
00459             if (lTripType == "RI" || lTripType == "RO") {
00460                 lFare /= 2;
00461             }
00462             // Set the travel fare option.
00463             iFareOption.setFare (lFare);
00464             // Copy the class path list into the fare option.

```

```

00464         const stdair::ClassList_StringList_T& lClassCodeList =
00465             lCurrentAirlineClassList_ptr->getClassCodeList();
00466         for (stdair::ClassList_StringList_T::const_iterator itClassCodeList =
00467             lClassCodeList.begin();
00468             itClassCodeList != lClassCodeList.end(); ++itClassCodeList ) {
00469             const stdair::ClassList_String_T& lClassCodeList = *itClassCodeList;
00470             iFareOption.addClassList (lClassCodeList);
00471         }
00472
00473         // Add the fare option to the travel solution into question.
00474         ioTravelSolution.addFareOption (iFareOption);
00475
00476         // DEBUG
00477         STDAIR_LOG_DEBUG (ioTravelSolution.describeSegmentPath()
00478             << ". A corresponding fare option for the '"
00479             << lCurrentAirlineClassList_ptr->describeKey()
00480             << "' class is: " << iFareOption);
00481
00482         iFareOption.emptyClassList();
00483     }
00484 }
00485
00486 }
00487
00488 // //////////////////////////////////////
00489 stdair::ParsedKey FareQuoter::
00490 getFirstSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00491
00492     // Get the segment-path of the travel solution.
00493     const stdair::SegmentPath_T& lSegmentPath =
00494         ioTravelSolution.getSegmentPath();
00495
00496     // Get the number of segments of the travel solution.
00497     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00498
00499     // Sanity check: there is at least one segment in the travel solution.
00500     assert (lNbSegments >= 1);
00501
00502     // Get the first segment of the travel solution.
00503     const std::string& lFirstSegmentDateKey = lSegmentPath.front();
00504
00505     // Get the parsed key of the first segment of the travel solution.
00506     const stdair::ParsedKey& lFirstSegmentParsedKey =
00507         stdair::BomKeyManager::extractKeys (lFirstSegmentDateKey);
00508
00509     return lFirstSegmentParsedKey;
00510 }
00511
00512 // //////////////////////////////////////
00513 stdair::ParsedKey FareQuoter::
00514 getLastSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00515
00516     // Get the segment-path of the travel solution.
00517     const stdair::SegmentPath_T& lSegmentPath =
00518         ioTravelSolution.getSegmentPath();
00519
00520     // Get the number of segments of the travel solution.
00521     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00522
00523     // Sanity check: there is at least one segment in the travel solution.
00524     assert (lNbSegments >= 1);
00525
00526     // Get the last segment of the travel solution.
00527     const std::string& lLastSegmentDateKey = lSegmentPath.back();
00528
00529     // Get the parsed key of the last segment of the travel solution.
00530     const stdair::ParsedKey& lLastSegmentParsedKey =
00531         stdair::BomKeyManager::extractKeys (lLastSegmentDateKey);
00532
00533     return lLastSegmentParsedKey;
00534 }
00535
00536 }
00537
00538 // //////////////////////////////////////
00539 void FareQuoter::
00540 displayMissingFareRuleMessage (const stdair::BookingRequestStruct&
00541     iBookingRequest,
00542     stdair::TravelSolutionStruct& ioTravelSolution
00543 ) {
00544
00545     // Get the origin of the first segment in order to get the origin of
00546     // the solution.
00547     const stdair::ParsedKey lFirstSPParsedKey =
00548         getFirstSPParsedKey(ioTravelSolution);
00549     const stdair::AirportCode_T& lOrigin = lFirstSPParsedKey._boardingPoint;
00548

```

```

00549 // Get the destination of the last segment in order to get the
00550 // destination of the solution.
00551 const stdair::ParsedKey& lLastSegmentKey =
00552     getLastSPParsedKey(iTravelSolution);
00553 const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00554
00555 // Construct the Airport pair stream of the segment path.
00556 const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00557
00558 // Get the date of the first segment date key.
00559 const stdair::FlightDateKey& lFlightDateKey =
00560     lFirstSPParsedKey.getFlightDateKey();
00561
00562 // Get the point-of-sale of the booking request.
00563 const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00564 // Get the booking request channel.
00565 const stdair::ChannelLabel_T& lChannel =
00566     iBookingRequest.getBookingChannel();
00567 // Construct the corresponding POS-channel primary key.
00568 const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00569
00570 // Get the booking request date time.
00571 const stdair::DateTime_T& lRequestDateTime =
00572     iBookingRequest.getRequestDateTime();
00573
00574 // If no fare rule has a corresponding date range, the pricing is not
00575 // possible, throw an exception.
00576 if (_atLeastOneAvailableDateRule == false) {
00577     const stdair::SegmentDateKey lSegmentDateKey =
00578         lFirstSPParsedKey.getSegmentKey();
00579     STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00580         "flight date " << lFlightDateKey.toString()
00581         << " and the Origin-Destination pair: "
00582         << lSegmentDateKey.toString());
00583     throw FlightDateNotFoundException ("No available fare rule for the "
00584         "flight date "
00585         + lFlightDateKey.toString()
00586         + " and the Origin-Destination pair: "
00587         + lSegmentDateKey.toString());
00588 }
00589 // If no fare rule has a corresponding pos channel, the pricing is not
00590 // possible,
00591 // throw an exception.
00592 else if (_atLeastOneAvailablePosChannel == false) {
00593     STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00594         "point of sale " << lPointOfSale
00595         << ", to the channel " << lChannel
00596         << ", to the flight date "
00597         << lFlightDateKey.toString()
00598         << " and to the Origin-Destination pair: "
00599         << lAirportPairKey.toString());
00600     throw PosOrChannelNotFoundException ("No available fare rule for the "
00601         "point of sale " + lPointOfSale
00602         + ", the channel " + lChannel
00603         + ", the flight date "
00604         + lFlightDateKey.toString()
00605         + " and the Origin-Destination pair: "
00606         + lAirportPairKey.toString());
00607 }
00608 // If no fare rule has a corresponding time range, the pricing is not
00609 // possible,
00610 // throw an exception.
00611 else if (_atLeastOneAvailableTimeRule == false) {
00612     STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00613         << lFirstSPParsedKey.toString() << "' (parsed key) and
00614         to '"
00615         << lFarePosChannelKey.toString() << "' (POS and
00616         channel)");
00617     throw FlightTimeNotFoundException ("No available fare rule corresponding
00618         "
00619         "to '" + lFirstSPParsedKey.toString()
00620         + "' (parsed key) and to '"
00621         + lFarePosChannelKey.toString()
00622         + "' (POS and channel)");
00623 }
00624 // If no fare rule matches the advance purchase, trip type and stay
00625 // duration criterion, the pricing is not possible, throw an exception.
00626 else if (_atLeastOneAvailableFeaturesRule == false) {
00627     // Get the stay duration of the booking request.
00628     const stdair::DayDuration_T& lStayDuration=
00629         iBookingRequest.getStayDuration();
00630     std::ostringstream lStayDurationStream;
00631     lStayDurationStream << lStayDuration;
00632     const std::string lStayDurationString (lStayDurationStream.str());
00633
00634     // Get the booking request trip type.

```

```

00630     const stdair::TripType_T& lTripType =
00631         iBookingRequest.getTripType();
00632
00633     STDAIR_LOG_ERROR ("No available fare rule corresponding to a "
00634         "trip type " << lTripType
00635         << ", to a stay duration of " << lStayDurationString
00636         << ", to a request date time of " << lRequestDateTime
00637         << ", to '" << lFirstSPParsedKey.toString()
00638         << "' (parsed key) and to '"
00639         << lFarePosChannelKey << "' (POS and channel)");
00640     throw FeaturesNotFoundException ("No available fare rule corresponding to
a "
00641         "trip type " + lTripType
00642         + ", to a stay duration of "
00643         + lStayDurationString
00644         + ", to a request date time of "
00645         + boost::posix_time::to_simple_string(
lRequestDateTime)
00646         + ", to '" + lFirstSPParsedKey.toString(
)
00647         + "' (parsed key) and to '"
00648         + lFarePosChannelKey.toString()
00649         + "' (POS and channel)");
00650 }
00651 assert (_atLeastOneAvailableAirlineClassRule == false);
00652 // If no fare rule matches the airline class path, the pricing is not
00653 // possible, throw an exception.
00654 STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00655     << lFirstSPParsedKey.toString() << "' (parsed key), to '"
00656     << iBookingRequest.describe()
00657     << "' (booking request) and to '"
00658     << lFarePosChannelKey.toString() << "' (POS and channel)");
00659 }
00660 throw AirlineNotFoundException ("No available fare rule corresponding to '"
00661     + lFirstSPParsedKey.toString()
00662     + "' (parsed key), to '"
00663     + iBookingRequest.describe()
00664     + "' (booking request) and to '"
00665     + lFarePosChannelKey.toString()
00666     + "' (POS and channel)");
00667 }
00668 }

```

23.37 simfq/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](#)

23.38 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

```

23.39 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](#)

23.40 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
00039     if (lAirportPair_ptr == NULL) {
00040         lAirportPair_ptr =

```

```

00041         &stdair::FacBom<stdair::AirportPair>::instance().
00042         create (lAirportPairKey);
00043         stdair::FacBomManager::addToListAndMap (ioBomRoot, *lAirportPair_ptr);
00044         stdair::FacBomManager::linkWithParent (ioBomRoot, *lAirportPair_ptr);
00045     }
00046     // Sanity check.
00047     assert (lAirportPair_ptr != NULL);
00048
00049     stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00050     // Generate the date-period object corresponding to the given
00051     // fareRule.
00052     createDateRange (lAirportPair, iFareRuleStruct);
00053 }
00054
00055 // //////////////////////////////////////
00056 void FareRuleGenerator::
00057 createDateRange (stdair::AirportPair& iAirportPair,
00058                 const FareRuleStruct& iFareRuleStruct) {
00059
00060     // Create the fare date-period primary key.
00061     const stdair::Date_T& lDateRangeStart =
00062         iFareRuleStruct.getDateRangeStart ();
00063     const stdair::Date_T& lDateRangeEnd =
00064         iFareRuleStruct.getDateRangeEnd ();
00065     const stdair::DatePeriod_T lDatePeriod (lDateRangeStart, lDateRangeEnd);
00066     const stdair::DatePeriodKey lFareDatePeriodKey (lDatePeriod);
00067
00068     // Check that the date-period object is not already existing.
00069     // If a date-period object with the same key has not already been
00070     // created, create it and link it to the airport-pair object.
00071     stdair::DatePeriod* lFareDatePeriod_ptr = stdair::BomManager::
00072         getObjectPtr<stdair::DatePeriod> (iAirportPair,
00073                                           lFareDatePeriodKey.toString());
00074     if (lFareDatePeriod_ptr == NULL) {
00075         lFareDatePeriod_ptr = &stdair::FacBom<stdair::DatePeriod>::instance().
00076             create (lFareDatePeriodKey);
00077         stdair::FacBomManager::addToListAndMap (iAirportPair,
00078                                                 *lFareDatePeriod_ptr);
00079         stdair::FacBomManager::linkWithParent (iAirportPair,
00080                                                 *lFareDatePeriod_ptr);
00081     }
00082     // Sanity check.
00083     assert (lFareDatePeriod_ptr != NULL);
00084
00085     stdair::DatePeriod& lDateRange = *lFareDatePeriod_ptr;
00086     // Generate the point_of_sale-channel object corresponding to
00087     // the given fareRule.
00088     createPOSChannel (lDateRange, iFareRuleStruct);
00089 }
00090
00091 // //////////////////////////////////////
00092 void FareRuleGenerator::
00093 createPOSChannel (stdair::DatePeriod& iDatePeriod,
00094                 const FareRuleStruct& iFareRuleStruct) {
00095
00096     // Create the point-of-sale-channel primary key.
00097     const stdair::CityCode_T& lPosition = iFareRuleStruct.getPOS ();
00098     const stdair::ChannelLabel_T& lChannel =
00099         iFareRuleStruct.getChannel ();
00100     const stdair::PosChannelKey lFarePosChannelKey (lPosition, lChannel);
00101
00102     // Check that the point_of_sale-channel object is not already existing.
00103     // If a point_of_sale-channel object with the same key has not already
00104     // been created, create it and link it to the date-period object.
00105     stdair::PosChannel* lFarePosChannel_ptr = stdair::BomManager::
00106         getObjectPtr<stdair::PosChannel> (iDatePeriod,
00107                                           lFarePosChannelKey.toString());
00108     if (lFarePosChannel_ptr == NULL) {
00109         lFarePosChannel_ptr = &stdair::FacBom<stdair::PosChannel>::instance().
00110             create (lFarePosChannelKey);
00111         stdair::FacBomManager::addToListAndMap (iDatePeriod,
00112                                                 *lFarePosChannel_ptr);
00113         stdair::FacBomManager::linkWithParent (iDatePeriod,
00114                                                 *lFarePosChannel_ptr);
00115     }
00116     // Sanity check.
00117     assert (lFarePosChannel_ptr != NULL);
00118
00119     stdair::PosChannel& lPosChannel = *lFarePosChannel_ptr;
00120     // Generate the time-period object corresponding to the given
00121     // fareRule.
00122     createTimeRange (lPosChannel, iFareRuleStruct);
00123 }
00124
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

```

23.41 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](#)

23.42 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         // them public.
00037         friend class FareFileParser;
00038         friend struct FareParserHelper::doEndFare;
00039         friend class FareParser;
00040
00041     private:
00042
00043         static void createAirportPair (stdair::BomRoot&,
00044                                         const FareRuleStruct&);
00045
00046         static void createDateRange (stdair::AirportPair&,
00047                                       const FareRuleStruct&);
00048
00049         static void createPOSChannel (stdair::DatePeriod&,
00050                                       const FareRuleStruct&);
00051
00052         static void createTimeRange (stdair::PosChannel&,
00053                                      const FareRuleStruct&);
00054
00055         static void createFareFeatures (stdair::TimePeriod&,
00056                                         const FareRuleStruct&);
00057
00058         static void createAirlineClassList (stdair::FareFeatures&,
00059                                              const FareRuleStruct&);
00060
00061     };
00062 }
00063
00064 #endif // __SIMFQT_CMD_FARERULEGENERATOR_HPP

```

23.43 simfqt/config/simfqt-paths.hpp File Reference

Macros

- #define [PACKAGE](#) "simfqt"
- #define [PACKAGE_NAME](#) "SIMFQT"
- #define [PACKAGE_VERSION](#) "1.00.0"
- #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-1.00.0"
- #define [MANDIR](#) "/usr/share/man"
- #define [INFODIR](#) "/usr/share/info"
- #define [HTMLDIR](#) "/usr/share/doc/simfqt-1.00.0/html"
- #define [PDFDIR](#) "/usr/share/doc/simfqt-1.00.0/html"
- #define [STDAIR_SAMPLE_DIR](#) "/usr/share/stdair/samples"

23.43.1 Macro Definition Documentation

23.43.1.1 `#define PACKAGE "simfqt"`

Definition at line 4 of file [simfqt-paths.hpp](#).

23.43.1.2 `#define PACKAGE_NAME "SIMFQT"`

Definition at line 5 of file [simfqt-paths.hpp](#).

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

23.43.1.3 `#define PACKAGE_VERSION "1.00.0"`

Definition at line 6 of file [simfqt-paths.hpp](#).

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

23.43.1.4 `#define PREFIXDIR "/usr"`

Definition at line 7 of file [simfqt-paths.hpp](#).

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

23.43.1.5 `#define EXEC_PREFIX "/usr"`

Definition at line 8 of file [simfqt-paths.hpp](#).

23.43.1.6 `#define BINDIR "/usr/bin"`

Definition at line 9 of file [simfqt-paths.hpp](#).

23.43.1.7 `#define LIBDIR "/usr/lib"`

Definition at line 10 of file [simfqt-paths.hpp](#).

23.43.1.8 `#define LIBEXECDIR "/usr/libexec"`

Definition at line 11 of file [simfqt-paths.hpp](#).

23.43.1.9 `#define SBINDIR "/usr/sbin"`

Definition at line 12 of file [simfqt-paths.hpp](#).

23.43.1.10 `#define SYSCONFDIR "/usr/etc"`

Definition at line 13 of file [simfqt-paths.hpp](#).

23.43.1.11 `#define INCLUDEDIR "/usr/include"`

Definition at line 14 of file [simfqt-paths.hpp](#).

23.43.1.12 `#define DATAROOTDIR "/usr/share"`

Definition at line 15 of file [simfqt-paths.hpp](#).

23.43.1.13 `#define DATADIR "/usr/share"`

Definition at line 16 of file [simfqt-paths.hpp](#).

23.43.1.14 `#define DOCDIR "/usr/share/doc/simfqt-1.00.0"`

Definition at line 17 of file [simfqt-paths.hpp](#).

23.43.1.15 `#define MANDIR "/usr/share/man"`

Definition at line 18 of file [simfqt-paths.hpp](#).

23.43.1.16 `#define INFODIR "/usr/share/info"`

Definition at line 19 of file [simfqt-paths.hpp](#).

23.43.1.17 `#define HTMLDIR "/usr/share/doc/simfqt-1.00.0/html"`

Definition at line 20 of file [simfqt-paths.hpp](#).

23.43.1.18 `#define PDFDIR "/usr/share/doc/simfqt-1.00.0/html"`

Definition at line 21 of file [simfqt-paths.hpp](#).

23.43.1.19 `#define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"`

Definition at line 22 of file [simfqt-paths.hpp](#).

23.44 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 "1.00.0"
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-1.00.0"
00018 #define MANDIR "/usr/share/man"
00019 #define INFODIR "/usr/share/info"
00020 #define HTMLDIR "/usr/share/doc/simfqt-1.00.0/html"
00021 #define PDFDIR "/usr/share/doc/simfqt-1.00.0/html"
00022 #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"
00023
00024 #endif // __SIMFQT_PATHS_HPP__
```

23.45 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](#)

23.46 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     () {
00019         _instance = NULL;
00020     }
00021     // //////////////////////////////////////
00022     FacSimfqtServiceContext&
00023     FacSimfqtServiceContext::instance() {
00024         if (_instance == NULL) {
00025             _instance = new FacSimfqtServiceContext();
00026             assert (_instance != NULL);
00027             stdair::FacSupervisor::instance().
00028             registerServiceFactory (_instance);
00029         }
00030         return *_instance;
00031     }
00032
00033     // //////////////////////////////////////
00034     SIMFQT_ServiceContext& FacSimfqtServiceContext::create
00035     () {
00036         SIMFQT_ServiceContext* aServiceContext_ptr = NULL;
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 }

```

23.47 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](#)

23.48 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

```

23.49 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>
#include <stdair/service/Logger.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.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](#)

23.50 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().
00111         create();
00112     _simfqtServiceContext = &lSIMFQT_ServiceContext;
00113 }
00114
00115 // //////////////////////////////////////
00116 void SIMFQT_Service::
00117     addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr,
00118                     const bool iOwnStdairService) {
00119     // Retrieve the SimFQT service context
00120     assert (_simfqtServiceContext != NULL);
00121     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00122     // Store the STDAIR service object within the (SimFQT) service context
00123     lSIMFQT_ServiceContext.setSTDAIR_Service (ioSTDAIR_Service_ptr,
00124                                             iOwnStdairService);
00125 }
00126
00127 // //////////////////////////////////////
00128 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00129     initStdAirService (const stdair::BasLogParams& iLogParams,
00130                     const stdair::BasDBParams& iDBParams) {
00131     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00132         boost::make_shared<stdair::STDAIR_Service> (iLogParams, iDBParams);
00133     assert (lSTDAIR_Service_ptr != NULL);
00134     return lSTDAIR_Service_ptr;
00135 }
00136
00137 // //////////////////////////////////////
00138 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00139     initStdAirService (const stdair::BasLogParams& iLogParams) {
00140     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00141         boost::make_shared<stdair::STDAIR_Service> (iLogParams);
00142     assert (lSTDAIR_Service_ptr != NULL);
00143     return lSTDAIR_Service_ptr;
00144 }
00145
00146 // //////////////////////////////////////
00147 void SIMFQT_Service::initSimfqtService() {
00148     // Do nothing at this stage. A sample BOM tree may be built by
00149     // calling the buildSampleBom() method
00150 }
00151
00152 // //////////////////////////////////////
00153 void SIMFQT_Service::
00154     parseAndLoad (const FareFilePath& iFareFilename) {
00155     // Retrieve the SimFQT service context
00156     if (_simfqtServiceContext == NULL) {
00157         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00158                                                     "has not been initialised");
00159     }
00160     assert (_simfqtServiceContext != NULL);
00161     // Retrieve the SimFQT service context and whether it owns the Stdair
00162     // service
00163     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
00164     _simfqtServiceContext;
00165     const bool doesOwnStdairService =
00166         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00167     // Retrieve the StdAir service object from the (SimFQT) service context
00168     stdair::STDAIR_Service& lSTDAIR_Service =
00169         lSIMFQT_ServiceContext.getSTDAIR_Service();
00170     // Retrieve the persistent BOM root object.
00171     stdair::BomRoot& lPersistentBomRoot =
00172         lSTDAIR_Service.getPersistentBomRoot();
00173     FareParser::fareRuleGeneration (iFareFilename

```

```

, lPersistentBomRoot);
00198
00210     buildComplementaryLinks (lPersistentBomRoot);
00211
00216     if (doesOwnStdairService == true) {
00217         //
00218         clonePersistentBom ();
00219     }
00220 }
00221
00222 // //////////////////////////////////////
00223 void SIMFQT_Service::buildSampleBom() {
00224
00225     // Retrieve the SimFQT service context
00226     if (_simfqtServiceContext == NULL) {
00227         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00228             "has not been initialised")
;
00229     }
00230     assert (_simfqtServiceContext != NULL);
00231
00232     // Retrieve the SimFQT service context and whether it owns the Stdair
00233     // service
00234     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00235     const bool doesOwnStdairService =
00236         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00237
00238     // Retrieve the StdAir service object from the (SimFQT) service context
00239     stdair::STDAIR_Service& lSTDAIR_Service =
00240         lSIMFQT_ServiceContext.getSTDAIR_Service();
00241
00242     // Retrieve the persistent BOM root object.
00243     stdair::BomRoot& lPersistentBomRoot =
00244         lSTDAIR_Service.getPersistentBomRoot();
00245
00250     if (doesOwnStdairService == true) {
00251         //
00252         lSTDAIR_Service.buildSampleBom();
00253     }
00254
00266     buildComplementaryLinks (lPersistentBomRoot);
00267
00272     if (doesOwnStdairService == true) {
00273         //
00274         clonePersistentBom ();
00275     }
00276 }
00277
00278 // //////////////////////////////////////
00279 void SIMFQT_Service::clonePersistentBom ()
{
00280
00281     // Retrieve the SimFQT service context
00282     if (_simfqtServiceContext == NULL) {
00283         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00284             "has not been initialised")
;
00285     }
00286     assert (_simfqtServiceContext != NULL);
00287
00288     // Retrieve the SimFQT service context and whether it owns the Stdair
00289     // service
00290     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00291     const bool doesOwnStdairService =
00292         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00293
00294     // Retrieve the StdAir service object from the (SimFQT) service context
00295     stdair::STDAIR_Service& lSTDAIR_Service =
00296         lSIMFQT_ServiceContext.getSTDAIR_Service();
00297
00302     if (doesOwnStdairService == true) {
00303         //
00304         lSTDAIR_Service.clonePersistentBom ();
00305     }
00306
00310     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00311     buildComplementaryLinks (lBomRoot);
00312 }
00313
00314 // //////////////////////////////////////
00315 void SIMFQT_Service::buildComplementaryLinks
(stdair::BomRoot& ioBomRoot) {
00316     // Currently, no more things to do by SimFQT at that stage.
00317 }
00318

```

```

00319 // //////////////////////////////////////
00320 stdair::BookingRequestStruct SIMFQT_Service::buildBookingRequest
(const bool isForCRS) {
00321
00322     // Retrieve the SIMFQT service context
00323     if (_simfqtServiceContext == NULL) {
00324         throw stdair::NonInitialisedServiceException ("The Simfqt service has not
"
00325                                                     "been initialised");
00326     }
00327     assert (_simfqtServiceContext != NULL);
00328
00329     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00330
00331     // Retrieve the STDAIR service object from the (Simfqt) service context
00332     stdair::STDAIR_Service& lSTDAIR_Service =
lSIMFQT_ServiceContext.getSTDAIR_Service();
00333
00334     // Delegate the BOM building to the dedicated service
00335     stdair::BookingRequestStruct oBookingRequest =
lSTDAIR_Service.buildSampleBookingRequest (isForCRS);
00336
00337     return oBookingRequest;
00338 }
00339
00340 // //////////////////////////////////////
00341 void SIMFQT_Service::
00342 buildSampleTravelSolutions(
stdair::TravelSolutionList_T& ioTravelSolutionList){
00343
00344     // Retrieve the SIMFQT service context
00345     if (_simfqtServiceContext == NULL) {
00346         throw stdair::NonInitialisedServiceException ("The Simfqt service has not
"
00347                                                     "been initialised");
00348     }
00349     assert (_simfqtServiceContext != NULL);
00350
00351     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00352
00353     // Retrieve the STDAIR service object from the (Simfqt) service context
00354     stdair::STDAIR_Service& lSTDAIR_Service =
lSIMFQT_ServiceContext.getSTDAIR_Service();
00355
00356     // Delegate the BOM building to the dedicated service
00357     lSTDAIR_Service.buildSampleTravelSolutionForPricing (ioTravelSolutionList);
00358 }
00359
00360 // //////////////////////////////////////
00361 std::string SIMFQT_Service::csvDisplay() const {
00362
00363     // Retrieve the SIMFQT service context
00364     if (_simfqtServiceContext == NULL) {
00365         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00366                                                     "has not been initialised")
00367     }
00368     assert (_simfqtServiceContext != NULL);
00369
00370     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00371
00372     // Retrieve the STDAIR service object from the (SimFQT) service context
00373     stdair::STDAIR_Service& lSTDAIR_Service =
lSIMFQT_ServiceContext.getSTDAIR_Service();
00374
00375     // Get the root of the BOM tree, on which all of the other BOM objects
00376     // are attached
00377     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00378
00379     // Delegate the BOM display to the dedicated service
00380     std::ostringstream oCSVStr;
00381     stdair::BomDisplay::csvSimFQTAirRACDisplay (oCSVStr, lBomRoot);
00382     return oCSVStr.str();
00383 }
00384
00385 // //////////////////////////////////////
00386 std::string SIMFQT_Service::
00387 csvDisplay (const stdair::TravelSolutionList_T&
ioTravelSolutionList) const {
00388
00389     // Retrieve the Simfqt service context
00390     if (_simfqtServiceContext == NULL) {
00391         throw stdair::NonInitialisedServiceException ("The Simfqt service has not

```

```

00397                                     "been initialised");
00398     }
00399     assert (_simfqtServiceContext != NULL);
00400
00401     // Retrieve the Simfqt service context
00402     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00403
00404     // Retrieve the STDAIR service object from the (Simfqt) service context
00405     stdair::STDAIR_Service& lSTDAIR_Service =
00406         lSIMFQT_ServiceContext.getSTDAIR_Service();
00407
00408     // Delegate the BOM building to the dedicated service
00409     return lSTDAIR_Service.csvDisplay (ioTravelSolutionList);
00410 }
00411
00412 // //////////////////////////////////////
00413 std::string SIMFQT_Service::
00414 csvDisplay (const stdair::AirportCode_T& iOrigin,
00415             const stdair::AirportCode_T& iDestination,
00416             const stdair::Date_T& iDepartureDate) const {
00417
00418     // Retrieve the SIMFQT service context
00419     if (_simfqtServiceContext == NULL) {
00420         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00421                                                         "has not been initialised")
00422     ;
00423     }
00424     assert (_simfqtServiceContext != NULL);
00425
00426     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00427
00428     // Retrieve the STDAIR service object from the (SIMFQT) service context
00429     stdair::STDAIR_Service& lSTDAIR_Service =
00430         lSIMFQT_ServiceContext.getSTDAIR_Service();
00431
00432     // Delegate the BOM display to the dedicated service
00433     return lSTDAIR_Service.csvDisplay (iOrigin, iDestination,
00434                                         iDepartureDate);
00435 }
00436 // //////////////////////////////////////
00437 std::string SIMFQT_Service::list() const {
00438
00439     // Retrieve the SIMFQT service context
00440     if (_simfqtServiceContext == NULL) {
00441         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00442                                                         "has not been initialised")
00443     ;
00444     }
00445     assert (_simfqtServiceContext != NULL);
00446
00447     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00448
00449     // Retrieve the STDAIR service object from the (SIMFQT) service context
00450     stdair::STDAIR_Service& lSTDAIR_Service =
00451         lSIMFQT_ServiceContext.getSTDAIR_Service();
00452
00453     // Delegate the BOM display to the dedicated service
00454     return lSTDAIR_Service.listAirportPairDateRange ();
00455 }
00456 // //////////////////////////////////////
00457 bool SIMFQT_Service::
00458 check (const stdair::AirportCode_T& iOrigin,
00459        const stdair::AirportCode_T& iDestination,
00460        const stdair::Date_T& iDepartureDate) const {
00461     std::ostringstream oFlightListStr;
00462
00463     if (_simfqtServiceContext == NULL) {
00464         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00465                                                         "has not been initialised")
00466     ;
00467     }
00468     assert (_simfqtServiceContext != NULL);
00469
00470     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
_simfqtServiceContext;
00471
00472     // Retrieve the STDAIR service object from the (SIMFQT) service context
00473     stdair::STDAIR_Service& lSTDAIR_Service =
00474         lSIMFQT_ServiceContext.getSTDAIR_Service();
00475
00476     // Delegate the BOM display to the dedicated service
00477     return lSTDAIR_Service.check (iOrigin, iDestination, iDepartureDate);

```

```

00476     }
00477
00478     // //////////////////////////////////////
00479     void SIMFQT_Service::
00480     quotePrices (const stdair::BookingRequestStruct& iBookingRequest
00481
00482                 stdair::TravelSolutionList_T& ioTravelSolutionList) {
00483
00484         // Retrieve the Simfqt service context
00485         if (_simfqtServiceContext == NULL) {
00486             throw stdair::NonInitialisedServiceException ("The SimFQT service "
00487                                                         "has not been initialised")
00488         ;
00489     }
00490     assert (_simfqtServiceContext != NULL);
00491
00492     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *
00493     _simfqtServiceContext;
00494
00495     // Retrieve the StdAir service context
00496     stdair::STDAIR_Service& lSTDAIR_Service =
00497     lSIMFQT_ServiceContext.getSTDAIR_Service();
00498
00499     // Get the root of the BOM tree, on which all of the other BOM objects
00500     // will be attached
00501     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00502
00503     // Delegate the action to the dedicated command
00504     stdair::BasChronometer lFareQuoteRetrievalChronometer;
00505     lFareQuoteRetrievalChronometer.start();
00506     FareQuoter::priceQuote (iBookingRequest, ioTravelSolutionList, lBomRoot);
00507
00508     // DEBUG
00509     const double lFareQuoteRetrievalMeasure =
00510     lFareQuoteRetrievalChronometer.elapsed();
00511     STDAIR_LOG_DEBUG ("Fare Quote retrieving: " << lFareQuoteRetrievalMeasure
00512                     << " - " << lSIMFQT_ServiceContext.display());
00513 }
00514
00515 }
```

23.51 simfqt/service/SIMFQT_ServiceContext.cpp File Reference

```

#include <cassert>
#include <sstream>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Namespaces

- namespace [SIMFQT](#)

23.52 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 >
00010 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00011 >
00012 namespace SIMFQT {
00013
00014     // //////////////////////////////////////
00015     SIMFQT_ServiceContext::SIMFQT_ServiceContext() : _ownStdairService (false) {
00016     }
00017
00018     // //////////////////////////////////////
00019     SIMFQT_ServiceContext::SIMFQT_ServiceContext (const SIMFQT_ServiceContext&) {
00020     assert (false);
00021 }
```

```

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
00055         // The shared_ptr<>::reset() method drops the refcount by one.
00056         // If the count result is dropping to zero, the resource pointed to
00057         // by the shared_ptr<> will be freed.
00058
00059         // Reset the stdair shared pointer
00060         _stdairService.reset();
00061     }
00062
00063 }

```

23.53 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](#)

23.54 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:
00056         // ////////// Setters //////////
00057         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     private:
00073         // ////////// Display Methods //////////
00074         const std::string shortDisplay() const;
00078         const std::string display() const;
00079
00083         const std::string describe() const;
00084
00088         private:
00091         // ////////// Construction / initialisation //////////
00092         SIMFQT_ServiceContext (const FareQuoteID_T&);
00096
00101         SIMFQT_ServiceContext ();
00102
00106         SIMFQT_ServiceContext (const SIMFQT_ServiceContext&);
00107
00111         ~SIMFQT_ServiceContext ();
00112
00113     private:
00114         // ////////// Children //////////
00115         stdair::STDAIR_ServicePtr_T _stdairService;
00119
00124         bool _ownStdairService;
00125     };
00126
00127 }
00128 #endif // __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP

```

23.55 simfqt/SIMFQT_Service.hpp File Reference

```

#include <stdair/stdair_basic_types.hpp>
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>

```

Classes

- class [SIMFQT::SIMFQT_Service](#)
Interface for the [SIMFQT](#) Services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

23.56 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     class BomRoot;
00018     struct BookingRequestStruct;
00019     struct BasLogParams;
00020     struct BasDBParams;
00021 }
00022
00023 namespace SIMFQT {
00024
00026     class SIMFQT_ServiceContext;
00027
00028
00032     class SIMFQT_Service {
00033     public:
00034
00035         // ////////////////////////////////// Constructors and Destructors //////////////////////////////////
00047         SIMFQT_Service (const stdair::BasLogParams&);
00048
00061         SIMFQT_Service (const stdair::BasLogParams&, const
stdair::BasDBParams&);
00062
00078         SIMFQT_Service (stdair::STDAIR_ServicePtr_T
ioSTDAIR_ServicePtr);
00079
00088         void parseAndLoad (const FareFilePath&
iFareFilename);
00089
00093         ~SIMFQT_Service();
00094
00095
00096     public:
00097         // ////////////////////////////////// Business Methods //////////////////////////////////
00109         void buildSampleBom();
00110
00114         void clonePersistentBom ();
00115
00120         void buildComplementaryLinks (stdair::BomRoot&);
00121
00128         stdair::BookingRequestStruct buildBookingRequest(const
bool isForCRS = false);
00129
00147         void buildSampleTravelSolutions (
stdair::TravelSolutionList_T&);
00148
00158         void quotePrices (const stdair::BookingRequestStruct&,
stdair::TravelSolutionList_T&);
00159
00160
00161
00162     public:
00163         // ////////////////////////////////// Display support methods //////////////////////////////////
00171         std::string csvDisplay() const;

```

```

00172
00180     std::string csvDisplay (const stdair::TravelSolutionList_T&
00181     const;
00181
00194     std::string csvDisplay (const stdair::AirportCode_T& ioOrigin,
00195     const stdair::AirportCode_T& ioDestination,
00196     const stdair::Date_T& ioDepartureDate) const;
00197
00206     std::string list() const;
00207
00220     bool check (const stdair::AirportCode_T& ioOrigin,
00221     const stdair::AirportCode_T& ioDestination,
00222     const stdair::Date_T& ioDepartureDate) const;
00223
00224 private:
00225     // ////////// Construction and Destruction helper methods //////////
00229     SIMFQT_Service();
00230
00234     SIMFQT_Service (const SIMFQT_Service&);
00235
00245     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&,
00246     const stdair::BasDBParams&);
00247
00256     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&)
00257 ;
00266     void addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00267     const bool iOwnStdairService);
00268
00273     void initServiceContext();
00274
00281     void initSimfqtService();
00282
00291     void initSimfqtService (const FareFilePath& iFareFilename);
00292
00296     void finalise();
00297
00298 private:
00299     // ////////// Service Context //////////
00304     SIMFQT_ServiceContext* _simfqtServiceContext;
00305 };
00306 }
00307 #endif // __SIMFQT_SVC_SIMFQT_SERVICE_HPP

```

23.57 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::FareQuotelD_T](#)
- typedef boost::shared_ptr
 < SIMFQT_Service > [SIMFQT::SIMFQT_ServicePtr_T](#)

23.58 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::ObjectNotFoundExceptio
00040     public:
00044     AirportPairNotFoundExceptio (const std::string
& iWhat)
00045     : stdair::ObjectNotFoundExceptio (iWhat) {}
00046     };
00047
00051     class PosOrChannelNotFoundExceptio : public
stdair::ObjectNotFoundExceptio {
00052     public:
00056     PosOrChannelNotFoundExceptio (const
std::string& iWhat)
00057     : stdair::ObjectNotFoundExceptio (iWhat) {}
00058     };
00059
00063     class FlightDateNotFoundExceptio : public
stdair::ObjectNotFoundExceptio {
00064     public:
00068     FlightDateNotFoundExceptio (const std::string&
iWhat)
00069     : stdair::ObjectNotFoundExceptio (iWhat) {}
00070     };
00071
00075     class FlightTimeNotFoundExceptio : public
stdair::ObjectNotFoundExceptio {
00076     public:
00080     FlightTimeNotFoundExceptio (const std::string&
iWhat)
00081     : stdair::ObjectNotFoundExceptio (iWhat) {}
00082     };
00083
00087     class FeaturesNotFoundExceptio : public
stdair::ObjectNotFoundExceptio {
00088     public:
00092     FeaturesNotFoundExceptio (const std::string&
iWhat)
00093     : stdair::ObjectNotFoundExceptio (iWhat) {}
00094     };
00095
00099     class AirlineNotFoundExceptio : public
stdair::ObjectNotFoundExceptio {
00100     public:
00104     AirlineNotFoundExceptio (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

```

23.59 simfqt/ui/cmdline/simfqt.cpp File Reference

23.60 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
(STDPAIR_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
00093 int readConfiguration (int argc, char* argv[], bool&
    ioIsBuiltin,
00094     stdair::Filename_T& ioFareInputFilename,
00095     std::string& ioLogFilename) {
00096
00097     // Default for the built-in input
00098     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00099
00100     // Declare a group of options that will be allowed only on command line
00101     boost::program_options::options_description generic ("Generic options");
00102     generic.add_options()
00103         ("prefix", "print installation prefix")
00104         ("version,v", "print version string")
00105         ("help,h", "produce help message");
00106
00107     // Declare a group of options that will be allowed both on command
00108     // line and in config file
00109     boost::program_options::options_description config ("Configuration");
00110     config.add_options()
00111         ("builtin,b",
00112         "The sample BOM tree can be either built-in or parsed from an input file.
00113         That latter must then be given with the -f/--fare option")
00114         ("fare,f",
00115         boost::program_options::value< std::string >(&ioFareInputFilename)->
00116         default_value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME
00117         ),
00118         "(CSV) input file for the fare rules")
00119         ("log,l",
00120         boost::program_options::value< std::string >(&ioLogFilename)->
00121         default_value(K_SIMFQT_DEFAULT_LOG_FILENAME),
00122         "Filename for the logs")
00123         ;
00124
00125     // Hidden options, will be allowed both on command line and
00126     // in config file, but will not be shown to the user.
00127     boost::program_options::options_description hidden ("Hidden options");
00128     hidden.add_options()
00129         ("copyright",
00130         boost::program_options::value< std::vector<std::string> >(),
00131         "Show the copyright (license)");
00132
00133     boost::program_options::options_description cmdline_options;
00134     cmdline_options.add(generic).add(config).add(hidden);
00135
00136     boost::program_options::options_description config_file_options;
00137     config_file_options.add(config).add(hidden);
00138
00139     boost::program_options::options_description visible ("Allowed options");
00140     visible.add(generic).add(config);
00141
00142     boost::program_options::positional_options_description p;
00143     p.add ("copyright", -1);
00144
00145     boost::program_options::variables_map vm;
00146     boost::program_options::store (boost::program_options::command_line_parser (argc, argv).
00147         options (cmdline_options).positional(p).run(), vm);
00148
00149     std::ifstream ifs ("simfqt.cfg");
00150     boost::program_options::store (parse_config_file (ifs, config_file_options),
00151         vm);
00152     boost::program_options::notify (vm); if (vm.count ("help")) {
00153         std::cout << visible << std::endl;
00154         return K_SIMFQT_EARLY_RETURN_STATUS;
00155     }
00156
00157     if (vm.count ("version")) {
00158         std::cout << PACKAGE_NAME << " , version " << PACKAGE_VERSION

```

```

00156     << std::endl;
00157     return K_SIMFQT_EARLY_RETURN_STATUS;
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     } else {
00178         // The built-in option is not selected. However, no fare file
00179         // is specified
00180         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00181             << "options must be specified" << std::endl;
00182     }
00183 }
00184
00185 if (vm.count ("log")) {
00186     ioLogFilename = vm["log"].as< std::string >();
00187     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00188 }
00189
00190 return 0;
00191 }
00192
00193 // //////////////////////////////////////
00194 void initReadline (swift::SReadline& ioInputReader) {
00195
00196     // Prepare the list of my own completers
00197     std::vector<std::string> Completers;
00198
00199     // The following is supported:
00200     // - "identifiers"
00201     // - special identifier %file - means to perform a file name completion
00202     Completers.push_back ("help");
00203     Completers.push_back ("list");
00204     Completers.push_back ("display %airport_code %airport_code %departure_date");
00205     Completers.push_back ("price %airline_code %flight_number %departure_date
00206         %airport_code %airport_code %departure_time %booking_date %booking_time %POS
00207         %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         } else if (lCommand == "list") {
00228             oCommandType = Command_T::LIST;
00229         } else if (lCommand == "display") {
00230             oCommandType = Command_T::DISPLAY;
00231         } else if (lCommand == "price") {
00232             oCommandType = Command_T::PRICE;
00233         } else if (lCommand == "quit") {
00234             oCommandType = Command_T::QUIT;
00235         }
00236     }
00237 }
00238
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::string 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     } catch (boost::bad_lexical_cast& eCast) {
00273         std::cerr << "The year ('" << iYearString
00274                   << "') cannot be understood." << std::endl;
00275         return false;
00276     }
00277
00278     // Check the month.
00279     std::string lDateMonthStr;
00280     try {
00281         const boost::regex lMonthRegex ("^(\\d{1,2})$");
00282         const bool isMonthANumber = regex_match (iMonthString, lMonthRegex);
00283
00284         if (isMonthANumber == true) {
00285             const unsigned short lMonth =
00286                 boost::lexical_cast<unsigned short> (iMonthString);
00287             if (lMonth > 12) {
00288                 throw boost::bad_lexical_cast();
00289             }
00290             if (lMonth != 0) {
00291                 lDateMonthStr = kMonthStr[lMonth-1];
00292             } else {
00293                 std::cerr << "The month ('" << iMonthString
00294                           << "') cannot be understood." << std::endl;
00295                 return false;
00296             }
00297         } else {
00298             if (iMonthString.size() < 3) {
00299                 throw boost::bad_lexical_cast();
00300             }
00301             std::string lMonthStr1 (iMonthString.substr (0, 1));
00302             boost::algorithm::to_upper (lMonthStr1);
00303             std::string lMonthStr23 (iMonthString.substr (1, 2));
00304             boost::algorithm::to_lower (lMonthStr23);
00305             lDateMonthStr = lMonthStr1 + lMonthStr23;
00306         }
00307     } catch (boost::bad_lexical_cast& eCast) {
00308         std::cerr << "The month ('" << iMonthString
00309                   << "') cannot be understood." << std::endl;
00310         return false;
00311     }
00312
00313     // Check the day.
00314     unsigned short lDateDay;
00315     try {
00316         lDateDay = boost::lexical_cast<unsigned short> (iDayString);
00317     } catch (boost::bad_lexical_cast& eCast) {
00318         std::cerr << "The day ('" << iDayString
00319                   << "') cannot be understood." << std::endl;
00320         return false;
00321     }

```



```

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                 stdair::Duration_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     // Re-compose the time
00389     std::ostringstream lTimeStr;
00390     lTimeStr << lTimeHour << ":" << lTimeMinute;
00391     oTime =
00392         boost::posix_time::duration_from_string (lTimeStr.str());
00393
00394     return true;
00395 }
00396
00397 // //////////////////////////////////////
00398 // Analyze the tokens of the 'price' command in order to construct
00399 // a travel solution list and a booking request.
00400 const stdair::BookingRequestStruct parseTravelSolutionAndBookingRequestKey
00401 (const TokenList_T& iTokenList,
00402  stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
00403  const stdair::BookingRequestStruct& ioBookingRequestStruct) {
00404
00405     TokenList_T::const_iterator iTok = iTokenList.begin();
00406
00407     if (iTok->empty() == true) {
00408
00409         std::cerr << "Wrong list of parameters. "
00410             << "The default booking request and travel solution list are
00411 kept."
00412             << std::endl;

```

```

00413     return ioBookingRequestStruct;
00414
00415
00416 } else {
00417     // Parameters corresponding to the tokens.
00418     // Each parameter corresponds to one token except the dates
00419     // (three tokens) and the times (two tokens).
00420     stdair::AirlineCode_T lAirlineCode;
00421     stdair::FlightNumber_T lflightNumber;
00422     stdair::Date_T lDepartureDate;
00423     stdair::Duration_T lDepartureTime;
00424     stdair::AirportCode_T lOriginAirport;
00425     stdair::AirportCode_T lDestinationAirport;
00426     stdair::Date_T lRequestDate;
00427     stdair::Duration_T lRequestTime;
00428     stdair::CityCode_T lPOS;
00429     stdair::ChannelLabel_T lChannel;
00430     stdair::TripType_T lTripType;
00431     unsigned short lStayDuration;
00432
00433     // Read the airline code.
00434     lAirlineCode = *itTok;
00435     boost::algorithm::to_upper (lAirlineCode);
00436
00437     // Read the flight-number .
00438     ++itTok;
00439     if (itTok->empty() == false) {
00440         try {
00441             lflightNumber = boost::lexical_cast<stdair::FlightNumber_T> (*itTok);
00442
00443         } catch (boost::bad_lexical_cast& eCast) {
00444             std::cerr << "The flight number ('" << *itTok
00445                 << "') cannot be understood."
00446                 << std::endl;
00447             return ioBookingRequestStruct;
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                     lDepartureTimeString);
00506
00507     if (IsDepartureTimeReadable == false) {
00508         std::cerr << "The default booking request and travel solution list are
kept."
00509             << std::endl;
00510         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
kept."
00535             << std::endl;
00536         return ioBookingRequestStruct;
00537     }
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                     lRequestTimeString);
00553
00554     if (IsRequestTimeReadable == false) {
00555         std::cerr << "The default booking request and travel solution list are
kept."
00556             << std::endl;
00557         return ioBookingRequestStruct;
00558     }
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
00586             lStayDuration = boost::lexical_cast<unsigned short> (*itTok);
00587
00588         } catch (boost::bad_lexical_cast& eCast) {
00589             std::cerr << "The stay duration ('" << *itTok
00590                 << "') cannot be understood." << std::endl;
00591             return ioBookingRequestStruct;
00592         }
00593     }
00594
00595     // At this step we know that all the parameters designed to construct
00596     // the travel solution and the booking request are correct.
00597
00598     // Empty the travel solution list to store a new travel solution.
00599     ioInteractiveTravelSolutionList.pop_front();
00600     // Construct the new travel solution.
00601     stdair::TravelSolutionStruct lTravelSolution;
00602     std::ostringstream oStr;
00603     oStr << lAirlineCode
00604         << stdair::DEFAULT_KEY_FLD_DELIMITER
00605         << lflightNumber
00606         << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00607         << lDepartureDate
00608         << stdair::DEFAULT_KEY_FLD_DELIMITER
00609         << lOriginAirport
00610         << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00611         << lDestinationAirport
00612         << stdair::DEFAULT_KEY_FLD_DELIMITER
00613         << lDepartureTime;
00614     lTravelSolution.addSegment (oStr.str());
00615     ioInteractiveTravelSolutionList.push_front(lTravelSolution);
00616
00617     // Construct the new booking request.
00618     stdair::DateTime_T lRequestDateTime (lRequestDate, lRequestTime);
00619     const stdair::BookingRequestStruct &lBookingRequestStruct =
00620         stdair::BookingRequestStruct (lOriginAirport,
00621             lDestinationAirport,
00622             lPOS,
00623             lDepartureDate,
00624             lRequestDateTime,
00625             stdair::CABIN_ECO,
00626             stdair::DEFAULT_PARTY_SIZE,
00627             lChannel,
00628             lTripType,
00629             lStayDuration,
00630             stdair::FREQUENT_FLYER_MEMBER,
00631             lDepartureTime,
00632             stdair::DEFAULT_WTP,
00633             stdair::DEFAULT_VALUE_OF_TIME,
00634             true, 50, true, 50);
00635
00636     return lBookingRequestStruct;
00637 }
00638 }
00639
00640 // //////////////////////////////////////
00641 // Analyze the tokens of the 'display' command in order to retrieve
00642 // an airport pair and a departure date.
00643 void parseFlightDateKey (const TokenList_T& iTokenList,
00644     stdair::AirportCode_T& ioOrigin,
00645     stdair::AirportCode_T& ioDestination,
00646     stdair::Date_T& ioDepartureDate) {
00647
00648     TokenList_T::const_iterator itTok = iTokenList.begin();
00649
00650     // Interpret the user input.
00651     if (itTok->empty() == true) {
00652
00653         std::cerr << "Wrong parameters specified. Default paramaters '"
00654             << ioOrigin << "-" << ioDestination
00655             << "/" << ioDepartureDate
00656             << "' are kept."
00657             << std::endl;
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);

```

```

00670     }
00671
00672     // Read the departure date.
00673     ++itTok;
00674     if (itTok->empty() == true) {
00675         return;
00676     }
00677     std::string lYearString = *itTok;
00678     ++itTok;
00679     if (itTok->empty() == true) {
00680         return;
00681     }
00682     std::string lMonthString = *itTok;
00683     ++itTok;
00684     if (itTok->empty() == true) {
00685         return;
00686     }
00687     std::string lDayString = *itTok;
00688     const bool IsDepartureDateReadable =
00689         retrieveDate (lYearString, lMonthString, lDayString,
00690                     ioDepartureDate);
00691     if (IsDepartureDateReadable == false) {
00692         std::cerr << "Default paramaters '"
00693                 << ioOrigin << "-" << ioDestination
00694                 << "/" << ioDepartureDate
00695                 << "' are kept."
00696                 << std::endl;
00697         return;
00698     }
00699 }
00700 }
00701
00702 // //////////////////////////////////////
00703 std::string toString (const TokenList_T& iTokenList) {
00704     std::ostringstream oStr;
00705
00706     // Re-create the string with all the tokens, trimmed by read-line
00707     unsigned short idx = 0;
00708     for (TokenList_T::const_iterator itTok = iTokenList.begin();
00709         itTok != iTokenList.end(); ++itTok, ++idx) {
00710         if (idx != 0) {
00711             oStr << " ";
00712         }
00713         oStr << *itTok;
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.

```

```

00757 TokenList_T extractTokenListForTSAndBR (const TokenList_T& iTokenList) {
00779     const std::string lRegex("^([[:alpha:]]{2,3})"
00780                               "[[:space:]]+([[:digit:]]{1,4})"
00781                               "[/ ]*"
00782                               "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00783                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00784                               "[[:space:]]*([[:digit:]]{1,2})[[:space:]]*"
00785                               "[[:space:]]+([[:alpha:]]{3})"
00786                               "[[:space:]]+([[:alpha:]]{3})"
00787                               "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"
00788                               "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00789                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00790                               "[[:space:]]*([[:digit:]]{1,2})"
00791                               "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"
00792                               "[[:space:]]+([[:alpha:]]{3})"
00793                               "[[:space:]]+([[:alpha:]]{2})"
00794                               "[[:space:]]+([[:alpha:]]{2})"
00795                               "[[:space:]]+([[:digit:]]{1})$");
00796
00797     //
00798     const TokenList_T oTokenList = extractTokenList (iTokenList, lRegex);
00799     return oTokenList;
00800 }
00801
00802 // //////////////////////////////////////
00803 // Parse the token list of the 'display' command.
00804 TokenList_T extractTokenListForOriDestDate (const TokenList_T& iTokenList) {
00814     const std::string lRegex("^([[:alpha:]]{3})"
00815                               "[[:space:]]*[/-]?"
00816                               "[[:space:]]*([[:alpha:]]{3})"
00817                               "[[:space:]]*[/-]?"
00818                               "[[:space:]]*([[:digit:]]{2,4})"
00819                               "[[:space:]]*[/-]?"
00820                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})"
00821                               "[[:space:]]*[/-]?"
00822                               "[[:space:]]*([[:digit:]]{1,2})$");
00823
00824     //
00825     const TokenList_T oTokenList = extractTokenList (iTokenList, lRegex);
00826     return oTokenList;
00827 }
00828
00829 // /////////// M A I N ///////////
00830 int main (int argc, char* argv[]) {
00831
00832     // State whether the BOM tree should be built-in or parsed from an
00833     // input file
00834     bool isBuiltin;
00835
00836     // Fare input file name
00837     stdair::Filename_T lFareInputFilename;
00838
00839     // Readline history
00840     const unsigned int lHistorySize (100);
00841     const std::string lHistoryFilename ("simfqt.hist");
00842     const std::string lHistoryBackupFilename ("simfqt.hist.bak");
00843
00844     // Default parameters for the interactive session
00845     stdair::AirportCode_T lInteractiveOrigin;
00846     stdair::AirportCode_T lInteractiveDestination;
00847     stdair::Date_T lInteractiveDepartureDate;
00848
00849     // Output log File
00850     stdair::Filename_T lLogFilename;
00851
00852     // Call the command-line option parser
00853     const int lOptionParserStatus =
00854         readConfiguration (argc, argv, isBuiltin,
00855                             lFareInputFilename, lLogFilename);
00856     if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS
00857     ) {
00857         return 0;
00858     }
00859
00860     // Set the log parameters
00861     std::ofstream logOutputFile;
00862     // Open and clean the log outputfile
00863     logOutputFile.open (lLogFilename.c_str());
00864     logOutputFile.clear();
00865
00866     // Initialise the fareQuote service
00867     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00868     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00869

```

```

00870 // DEBUG
00871 STDAIR_LOG_DEBUG ("Welcome to SimFQT display");
00872
00873 // Check whether or not a (CSV) input file should be read
00874 if (isBuiltin == true) {
00875     // Build the sample BOM tree (filled with fares) for Simfqt
00876     simfqtService.buildSampleBom();
00877 } else {
00878     // Build the BOM tree from parsing a fare file
00879     SIMFQT::FareFilePath lFareFilePath (lFareInputFilename)
;
00880     simfqtService.parseAndLoad (lFareFilePath);
00881 }
00882
00883 // DEBUG: Display the whole BOM tree
00884 const std::string& lCSVDump = simfqtService.csvDisplay();
00885 STDAIR_LOG_DEBUG (lCSVDump);
00886
00887 // DEBUG
00888 STDAIR_LOG_DEBUG ("=====");
00889 STDAIR_LOG_DEBUG ("=          Beginning of the interactive session          =");
00890 STDAIR_LOG_DEBUG ("=====");
00891
00892 // Initialise the GNU readline wrapper
00893 swift::SReadline lReader (lHistoryFilename, lHistorySize);
00894 initReadline (lReader);
00895
00896 // Now we can ask user for a line
00897 std::string lUserInput;
00898 bool EndOfInput (false);
00899 Command_T::Type_T lCommandType (Command_T::NOP);
00900
00901 while (lCommandType != Command_T::QUIT && EndOfInput == false) {
00902
00903     stdair::TravelSolutionList_T lInteractiveTravelSolutionList;
00904     stdair::TravelSolutionStruct lInteractiveTravelSolution;
00905
00906     // Update the default booking request.
00907     // If there is an input file, we want the CRS booking request (defined in
stdair).
00908     // If not, we want the default booking request.
00909     const bool isCRSBookingRequest = !isBuiltin;
00910     const stdair::BookingRequestStruct& lInteractiveBookingRequest =
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::ostream oPromptStr;
00934     oPromptStr << "simfqt "
00935     << "> ";
00936
00937     // The last parameter could be omitted.
00938     TokenList_T lTokenListByReadline;
00939     lUserInput = lReader.GetLine (oPromptStr.str(), lTokenListByReadline,
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

```

```

00953     switch (lCommandType) {
00954
00955         // /////////////////////////////////// Help ///////////////////////////////////
00956     case Command_T::HELP: {
00957         // Search for information to display default parameters lists.
00958         // Get the first travel solution.
00959         stdair::TravelSolutionStruct& lTravelSolutionStruct =
00960             lInteractiveTravelSolutionList.front();
00961         // Get the segment-path of the first travel solution.
00962         const stdair::SegmentPath_T& lSegmentPath =
00963             lTravelSolutionStruct.getSegmentPath();
00964         // Get the first segment of the first travel solution.
00965         const std::string& lSegmentDateKey = lSegmentPath.front();
00966         // Get the parsed key of the first segment of the first travel solution.
00967         const stdair::ParsedKey& lParsedKey =
00968             stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00969         // Get the request date time
00970         const stdair::DateTime_T& lRequestDateTime =
00971             lInteractiveBookingRequest.getRequestDateTime();
00972         const stdair::Time_T lRequestTime =
00973             lRequestDateTime.time_of_day();
00974         std::cout << std::endl;
00975         // Display help.
00976         std::cout << "Commands: " << std::endl;
00977         std::cout << " help" << "\t\t" << "Display this help" << std::endl;
00978         std::cout << " quit" << "\t\t" << "Quit the application" << std::endl;
00979         std::cout << " list" << "\t\t"
00980             << "List all the fare rule O&Ds and the corresponding date
ranges" << std::endl;
00981         std::cout << " display" << "\t"
00982             << "Display all fare rules for an O&D and a departure date. \n"
<< "\t\t"
00983             << "If no parameters specified or wrong list of parameters,
default values are used: \n" << "\t\t"
00984             << " display " << lInteractiveOrigin << " "
00985             << lInteractiveDestination << " "
00986             << lInteractiveDepartureDate << std::endl;
00987         std::cout << " price" << "\t\t"
00988             << "Price the travel solution corresponding to a booking
request. \n" << "\t\t"
00989             << "If no parameters specified or wrong list of parameters,
default value are used: \n" << "\t\t"
00990             << " price "
00991             << lParsedKey._airlineCode << " "
00992             << lParsedKey._flightNumber << " "
00993             << lParsedKey._departureDate << " "
00994             << lParsedKey._boardingPoint << " "
00995             << lParsedKey._offPoint << " "
00996             << lParsedKey._boardingTime << " "
00997             << lRequestDateTime.date() << " "
00998             << lRequestTime.hours() << ":" << lRequestTime.minutes() << " "
00999             << lInteractiveBookingRequest.getPOS() << " "
01000             << lInteractiveBookingRequest.getBookingChannel() << " "
01001             << lInteractiveBookingRequest.getTripType() << " "
01002             << lInteractiveBookingRequest.getStayDuration() << std::endl;
01003         std::cout << std::endl;
01004         break;
01005     }
01006
01007     // /////////////////////////////////// Quit ///////////////////////////////////
01008 case Command_T::QUIT: {
01009     break;
01010 }
01011
01012     // /////////////////////////////////// List ///////////////////////////////////
01013 case Command_T::LIST: {
01014
01015     // Get the list of all airport pairs and date ranges for which
01016     // there are fares available.
01017     const std::string& lAirportPairDateListStr =
01018         simfqtService.list ();
01019
01020     if (lAirportPairDateListStr.empty() == false) {
01021         std::cout << lAirportPairDateListStr << std::endl;
01022         STDAIR_LOG_DEBUG (lAirportPairDateListStr);
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
01030     break;
01031 }
01032
01033     // /////////////////////////////////// Display ///////////////////////////////////

```



```

01034     case Command_T::DISPLAY: {
01035
01036         // If no parameters are entered by the user, keep default ones.
01037         if (lTokenListByReadline.empty() == true) {
01038
01039             std::cout << "No parameters specified. Default paramaters '"
01040                 << lInteractiveOrigin << "-" << lInteractiveDestination
01041                 << "/" << lInteractiveDepartureDate
01042                 << "' are kept."
01043                 << std::endl;
01044
01045         } else {
01046
01047             // Find the best match corresponding to the given parameters.
01048             TokenList_T lTokenList =
01049                 extractTokenListForOriDestDate (lTokenListByReadline);
01050
01051             // Parse the best match, and give default values in case the
01052             // user does not specify all the parameters or does not
01053             // specify some of them correctly.
01054             parseFlightDateKey (lTokenList, lInteractiveOrigin,
01055                 lInteractiveDestination, lInteractiveDepartureDate)
01056         ;
01057     }
01058
01059     // Check whether the selected airportpair-date is valid:
01060     // i.e. if there are corresponding fare rules.
01061     const bool isAirportPairDateValid =
01062         simfqtService.check (lInteractiveOrigin, lInteractiveDestination,
01063             lInteractiveDepartureDate);
01064
01065     if (isAirportPairDateValid == false) {
01066         std::ostringstream oFDKStr;
01067         oFDKStr << "The airport pair/departure date: "
01068             << lInteractiveOrigin << "-" << lInteractiveDestination
01069             << "/" << lInteractiveDepartureDate
01070             << " does not correpond to any fare rule.\n"
01071             << "Make sure it exists with the 'list' command.";
01072         std::cout << oFDKStr.str() << std::endl;
01073         STDAIR_LOG_ERROR (oFDKStr.str());
01074
01075         break;
01076     }
01077
01078     // Display the list of corresponding fare rules.
01079     std::cout << "List of fare rules for "
01080         << lInteractiveOrigin << "-"
01081         << lInteractiveDestination << "/"
01082         << lInteractiveDepartureDate
01083         << std::endl;
01084
01085     const std::string& lFareRuleListStr =
01086         simfqtService.csvDisplay (lInteractiveOrigin,
01087             lInteractiveDestination,
01088             lInteractiveDepartureDate);
01089
01090     assert (lFareRuleListStr.empty() == false);
01091     std::cout << lFareRuleListStr << std::endl;
01092     STDAIR_LOG_DEBUG (lFareRuleListStr);
01093
01094     break;
01095 }
01096
01097 // ////////////////////////////////// Price //////////////////////////////////
01098 case Command_T::PRICE: {
01099
01100     // If no parameters are entered by the user, keep default ones.
01101     if (lTokenListByReadline.empty() == true) {
01102
01103         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01104
01105         std::cout << "No parameters specified. Default booking request and
01106             default travel solution list are kept.\n"
01107             << "Booking request: << "
01108             << lInteractiveBookingRequest.display() << " >>"
01109             << "\nTravel Solution: << "
01110             << lInteractiveTravelSolution.display() << " >>"
01111             << "\n***** \n"
01112             << "Fare quote"
01113             << "\n*****"
01114             << std::endl;
01115
01116         // Try to fareQuote the sample list of travel solutions.
01117         try {
01118             simfqtService.quotePrices (lInteractiveBookingRequest,
01119                 lInteractiveTravelSolutionList);

```

```

01119         } catch (stdair::ObjectNotFoundException& E) {
01120             std::cerr << "The given travel solution corresponding to the given
booking request can not be priced.\n"
01121                 << E.what()
01122                 << std::endl;
01123             break;
01124         }
01125     } else {
01126         // Find the best match corresponding to the given parameters.
01127         TokenList_T lTokenList =
01128             extractTokenListForTSAndBR (lTokenListByReadline);
01129
01130         // Parse the best match, and give default values in case the
01131         // user does not specify all the parameters or does not
01132         // specify some of them correctly.
01133         stdair::BookingRequestStruct lFinalBookingRequest
01134             = parseTravelSolutionAndBookingRequestKey (lTokenList,
01135
lInteractiveTravelSolutionList,
01137                                     lInteractiveBookingRequest
);
01138
01139         assert (lInteractiveTravelSolutionList.size() >= 1);
01140         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01141
01142         // Display the booking request and the first travel solution
01143         // before pricing.
01144         std::cout << "Booking request: << "
01145             << lFinalBookingRequest.display() << " >>"
01146             << "\nTravel Solution: << "
01147             << lInteractiveTravelSolution.display() << " >>"
01148             << "\n***** \n"
01149             << "Fare quote"
01150             << "\n*****"
01151             << std::endl;
01152
01153         // Try to fareQuote the sample list of travel solutions.
01154         try {
01155             simfqtService.quotePrices (lFinalBookingRequest,
lInteractiveTravelSolutionList);
01157         } catch (stdair::ObjectNotFoundException& E) {
01158             std::cerr << "The given travel solution corresponding to the given
booking request can not be priced.\n"
01159                 << E.what()
01160                 << std::endl;
01161             break;
01162         }
01163     }
01164 }
01165
01166 // Display the first travel solution after pricing:
01167 // one or more fare option have been added.
01168 lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01169 std::cout << "Travel Solution: << "
01170     << lInteractiveTravelSolution.display() << " >>\n"
01171     << std::endl;
01172
01173 break;
01174 }
01175
01176 // ////////////////////////////////// Default / No value //////////////////////////////////
01177 case Command_T::NOP: {
01178     break;
01179 }
01180 case Command_T::LAST_VALUE:
01181 default: {
01182     // DEBUG
01183     std::ostringstream oStr;
01184     oStr << "The '" << lUserInput << "' command is not yet understood.\n"
01185         << "Type help to have more information." << std::endl;
01186
01187     STDAIR_LOG_DEBUG (oStr.str());
01188     std::cout << oStr.str() << std::endl;
01189 }
01190 }
01191 }
01192
01193 // DEBUG
01194 STDAIR_LOG_DEBUG ("End of the session. Exiting.");
01195 std::cout << "End of the session. Exiting." << std::endl;
01196
01197 // Close the Log outputFile
01198 logOutputFile.close();
01199
01200 /*
01201     Note: as that program is not intended to be run on a server in

```

```

01202     production, it is better not to catch the exceptions. When it
01203     happens (that an exception is throwned), that way we get the
01204     call stack.
01205     */
01206
01207     return 0;
01208 }

```

23.61 test/simfqt/FQTTTestSuite.cpp File Reference

23.62 FQTTTestSuite.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 FQTTTestSuite
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
00033 struct UnitTestConfig {
00035     UnitTestConfig() {
00036         static std::ofstream _test_log ("FQTTTestSuite_utfresults.xml");
00037         boost_utf::unit_test_log.set_stream (_test_log);
00038         boost_utf::unit_test_log.set_format (boost_utf::XML);
00039         boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
00040         //boost_utf::unit_test_log.set_threshold_level
00041         (boost_utf::log_successful_tests);
00042     }
00043
00044     ~UnitTestConfig() {
00045     }
00046 };
00047
00048 // //////////////////////////////////////
00052 void testFareQuoterHelper (const unsigned short iTestFlag,
00053                          const stdair::Filename_T iFareInputFilename,
00054                          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 ;
00085     simfqtService.parseAndLoad (lFareFilePath);
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 (UnitTestConfig);
00105
00106 // Start the test suite
00107 BOOST_AUTO_TEST_SUITE (master_test_suite)
00108
00109 BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {
00110
00111     // Input file name
00112     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00113         "/fare01.csv");
00114
00115     // State whether the BOM tree should be built-in or parsed from an input file
00116     const bool isBuiltin = false;
00117
00118     // Try to fareQuote the sample default list of travel solutions
00119     BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin)
00120 );
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
00129         "/fareError01.csv");
00130
00131     // State whether the BOM tree should be built-in or parsed from an input file
00132     const bool isBuiltin = false;
00133
00134     // Try to fareQuote the sample default list of travel solutions
00135     BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
00136         SIMFQT::AirportPairNotFoundException
00137 );
00138 }
00139
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
00157 }
00158
00159 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {
00160
00161     // Input file name
00162     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00163         "/fareError03.csv");
00164
00165     // State whether the BOM tree should be built-in or parsed from an input file
00166     const bool isBuiltin = false;
00167
00168     // Try to fareQuote the sample default list of travel solutions
00169     BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
00170         SIMFQT::FlightDateNotFoundException
00171 );
00172 }
00173
00174 }

```

```
00174 }
00175
00180 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {
00181
00182     // Input file name
00183     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00184     "/fareError04.csv");
00185
00186     // State whether the BOM tree should be built-in or parsed from an input file
00187     const bool isBuiltin = false;
00188
00189     // Try to fareQuote the sample default list of travel solutions
00190     BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
00191         SIMFQT::FlightTimeNotFoundException
00192     );
00193 }
00194
00197 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {
00198
00199     // Input file name
00200     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00201     "/fareError05.csv");
00202
00203     // State whether the BOM tree should be built-in or parsed from an input file
00204     const bool isBuiltin = false;
00205
00206     // Try to fareQuote the sample default list of travel solutions
00207     BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
00208         SIMFQT::FeaturesNotFoundException
00209     );
00210 }
00211
00214 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {
00215
00216     // Input file name
00217     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00218     "/fareError06.csv");
00219
00220     // State whether the BOM tree should be built-in or parsed from an input file
00221     const bool isBuiltin = false;
00222
00223     // Try to fareQuote the sample default list of travel solutions
00224     BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
00225         SIMFQT::AirlineNotFoundException
00226     );
00227 }
00228
00231 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {
00232
00233     // Input file name
00234     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00235     "/fareError07.csv");
00236
00237     // State whether the BOM tree should be built-in or parsed from an input file
00238     const bool isBuiltin = false;
00239
00240     // Try to fareQuote the sample default list of travel solutions
00241     BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
00242         SIMFQT::FareFileParsingFailedException
00243     );
00244 }
00245
00248 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {
00249
00250     // Input file name
00251     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR
00252     "/missingFile.csv");
00253
00254     // State whether the BOM tree should be built-in or parsed from an input file
00255     const bool isBuiltin = false;
00256
00257     // Try to fareQuote the sample default list of travel solutions
00258     BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
00259         SIMFQT::FareInputFileNotFoundException
00260     );
00261 }
00262
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
00271     // State whether the BOM tree should be built-in or parsed from an input file
00272     const bool isBuiltin = true;
00273
00274     // 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
```