

An Introduction to *IRanges*

Patrick Aboyoun, Michael Lawrence, Hervé Pagès

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1 Introduction

The *IRanges* package is designed to represent sequences, ranges representing indices along those sequences, and data related to those ranges.

2 Sequences

Sequence

2.1 Run Length Encoding

Rle

2.2 External Sequences

XSequence XRaw

3 Lists

ListLike

TypedList

3.1 Simple Lists

LogicalList IntegerList NumericList ComplexList CharacterList RawList RleList

3.2 Annotated Lists

AnnotatedList

4 Sequence Ranges

*Ranges IRanges NormalIRanges RangesList IRangesList MaskCollection
XRanges IntervalTree*

4.1 Transforming Ranges

`reduce shift restrict narrow reflect flank *
disjoin, disjointBins`

```
> toLatex(sessionInfo())
```

- R version 2.9.0 (2009-04-17), x86_64-unknown-linux-gnu
- Locale: LC_CTYPE=en_US;LC_NUMERIC=C;LC_TIME=en_US;LC_COLLATE=en_US;LC_MONETARY=C;LC_MESSAGES=en_US;LC_PAPER=en_US;LC_ADDRESS=en_US;LC_IDENTIFICATION=en_US;LC_NAME=en_US;LC_TELEPHONE=en_US;LC_MEASUREMENT=en_US;LC_IDENTIFICATION=en_US
- Base packages: base, datasets, graphics, grDevices, methods, stats, tools, utils

Table 1: The output of `sessionInfo` on the build system after running this vignette.

4.2 Set Operations

`gaps`, `pgaps` `setdiff`, `psetdiff` `union`, `punion` `intersect`, `pintersect`

4.3 Finding Overlapping Ranges

RangesMatching *RangesMatchingList*
`overlap`, `%in%`

4.4 Finding Neighboring Ranges

`nearest`, `precede`, `follow`

5 Sequence Views

Views

5.1 Views on RLE Sequences

RleViews

6 Data Sets

XDataFrame *XDataFrameList* *SplitXDataFrameList*

7 Sequence Ranges with Data Sets

RangedData *RangedDataList*

7.1 Applying Over Spaces

RDApplyParams *FilterRules*