

Package ‘mmapcharr’

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Title Memory-Map Character Files

Version 0.3.1

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Description Uses memory-mapping to enable the random access of elements of a text file of characters separated by characters as if it were a simple R(cpp) matrix.

Encoding UTF-8

License GPL-3

ByteCompile TRUE

Depends R (>= 3.3.0)

Imports methods, Rcpp

LinkingTo Rcpp, rmio

Suggests testthat

RoxygenNote 7.3.3

URL <https://github.com/privefl/mmapcharr>

BugReports <https://github.com/privefl/mmapcharr/issues>

Collate 'RcppExports.R' 'extract.R' 'file-dim.R' 'mmapchar.R'
'mmapcharr-package.r' 'utils.R'

NeedsCompilation yes

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dim_file	<i>File dimensions</i>
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Description

Number of lines and columns of file (and extra 'return' characters).

Usage

```
dim_file(file)
```

Arguments

file Path to file.

Value

The number of lines and columns of file (and extra 'return' characters).

Examples

```
tmpfile <- tempfile()
write(0:9, tmpfile, ncolumns = 2)
dim_file(tmpfile)
```

Extract	<i>Create an Implementation of [For Custom Matrix-Like Types</i>
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Description

extract is a function that converts different index types such as negative integer vectors or logical vectors passed to the [function as i (e.g. X[i]) or i and j (e.g. X[i, j]) into positive integer vectors. The converted indices are provided as the i parameter of extract_vector or i and j parameters of extract_matrix to facilitate implementing the extraction mechanism for custom matrix-like types.

Usage

```
Extract(extract_vector, extract_matrix)
```

Arguments

- `extract_vector` A function in the form of `function(x, i)` that takes a subset of `x` based on a single vector of indices `i` and returns a vector.
- `extract_matrix` A function in the form of `function(x, i, j)` that takes a subset of `x` based on two vectors of indices `i` and `j` and returns a matrix.

Details

The custom type must implement methods for `dim` for this function to work. Implementing methods for `nrow` and `ncol` is not necessary as the default method of those generics calls `dim` internally.

This idea initially comes from [package crochet](#).

Value

A function in the form of `function(x, i, j, ..., drop = TRUE)` that is meant to be used as a method for `[]` for a custom type.

mmapchar-class	<i>Class mmapchar</i>
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Description

A reference class for storing and accessing matrix-like data stored on disk in files containing only characters (digits) separated by a character.

Usage

```
mmapchar(file, code)
```

Arguments

- `file` Path of the file.
- `code` Integer vector of size 256 to access integers instead of `rawToChar(as.raw(0:255), multiple = TRUE)`. See `mmapcharr:::CODE_012` and `mmapcharr:::CODE_DIGITS`.

Examples

```
test_file <- system.file("testdata/test-windows.txt", package = "mmapcharr")
test <- mmapchar(test_file, code = mmapcharr:::CODE_012)
test[, 1:3]
test[]
readLines(test_file)
```

mmapchar-methods	<i>Methods for the mmapchar class</i>
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Description

Methods for the mmapchar class

Accessor methods for class mmapchar. You can use positive and negative indices, logical indices (that are recycled) and also a matrix of indices (but only positive ones).

Dimension and type methods for class mmapchar.

Usage

```
## S4 method for signature 'mmapchar'
x[i, j, ..., drop = TRUE]

## S4 method for signature 'mmapchar'
dim(x)

## S4 method for signature 'mmapchar'
length(x)
```

Arguments

x	A mmapchar object.
i	A vector of indices (or nothing). You can use positive and negative indices, logical indices (that are recycled) and also a matrix of indices (but only positive ones).
j	A vector of indices (or nothing). You can use positive and negative indices, logical indices (that are recycled).
...	Not used. Just to make nargs works.
drop	Whether to delete the dimensions of a matrix which have one dimension equals to 1.

nelem	<i>Size of line</i>
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Description

Number of elements of each line of a file.

Usage

```
nelem(file)
```

Arguments

file Path to file.

Value

The number of elements of each line of a file.

Examples

```
tmpfile <- tempfile()
write(1:10, tmpfile, ncolumns = 2)
nline(tmpfile)
```

nline	<i>Number of lines</i>
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Description

Number of lines of a file.

Usage

```
nline(file)
```

Arguments

file Path to file.

Value

The number of lines of the file.

Examples

```
tmpfile <- tempfile()
write(1:5, tmpfile, ncolumns = 1)
nline(tmpfile)
```

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