

# Package ‘mmapcharr’

February 26, 2019

**Title** Memory-Map Character Files

**Version** 0.3.0

**Date** 2019-02-26

**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

**LazyData** TRUE

**ByteCompile** TRUE

**Depends** R (>= 3.3.0)

**Imports** methods, Rcpp

**LinkingTo** Rcpp, rmio

**Suggests** covr, testthat

**RoxygenNote** 6.1.0.9000

**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

**Author** Florian Privé [aut, cre]

**Maintainer** Florian Privé <florian.prive.21@gmail.com>

**Repository** CRAN

**Date/Publication** 2019-02-26 12:20:02 UTC

**R topics documented:**

dim_file . . . . .	2
Extract . . . . .	3
mmapchar-class . . . . .	3
mmapchar-methods . . . . .	4
mmapcharr . . . . .	5
nelem . . . . .	5
nline . . . . .	5

<b>Index</b>	<b>7</b>
--------------	----------

---

dim_file	<i>File dimensions</i>
----------	------------------------

---

**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

---

*Create an Implementation of [ For Custom Matrix-Like Types*


---

### 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

---

*Class `mmapchar`*


---

### 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 <code>rawToChar(as.raw(0:255), multiple = TRUE)</code> . See <code>mmapcharr:::CODE_012</code> and <code>mmapcharr:::CODE_DIGITS</code> .

**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

*Methods for the mmapchar class*


---

**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 <a href="#">mmapchar</a> 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 <a href="#">nargs</a> works.
drop	Whether to delete the dimensions of a matrix which have one dimension equals to 1.

---

`mmapcharr`*mmapcharr.*

---

**Description**

`mmapcharr`.

---

`nelem`*Size of line*

---

**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`*Number of lines*

---

**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)
```

# Index

[, mmapchar-method (mmapchar-methods), 4

dim, mmapchar-method (mmapchar-methods),  
4

dim\_file, 2

Extract, 3

length, mmapchar-method  
(mmapchar-methods), 4

mmapchar, 4

mmapchar (mmapchar-class), 3

mmapchar-class, 3

mmapchar-methods, 4

mmapchar\_RC (mmapchar-class), 3

mmapcharr, 5

mmapcharr-package (mmapcharr), 5

nargs, 4

nelem, 5

nline, 5