

Package ‘functionMap’

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Title Draw the Function Map for a R Package

Description Extract all function calls from an R package, or a set of R scripts. Create a network of functions that can be then visualized. Can also extract the places of the function definitions and function calls and export them in a 'JSON' file.

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LazyData yes

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codetools,
clisymbols,
crayon,
jsonlite,
pryr,
rematch,
remotes,
sankey,
withr

Depends R (>= 3.0.0)

Suggests pingr,
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default_r_file_pattern	<i>Default pattern for R files</i>
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Description

Default pattern for R files

Usage

default_r_file_pattern()

Value

Regular expression.

deps	<i>Dependencies of all functions</i>
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Description

Dependencies of all functions

Usage

deps(map, multiples = FALSE)

Arguments

- | | |
|-----------|--|
| map | Function map. |
| multiples | Whether to keep multiple function calls to the same function, i.e. duplicates in the list. |

Value

Named list of character vectors.

edge_df*Extract data about the edges (function calls) in a function map*

Description

Extract data about the edges (function calls) in a function map

Usage

```
edge_df(map)
```

Arguments

map The function map.

Value

A data frame with columns:

from	Calling function.
to	Called function.
type	Call type.
line	Line number.
col1	Starting column number.
col2	Ending column number.

export_map*Export a map to a JSON file*

Description

Export a map to a JSON file

Usage

```
export_map(map, file, pretty = TRUE)
```

Arguments

map	The function map.
file	The file or connection to write to.
pretty	Whether to pretty print the JSON file.

functions	<i>All functions of a function map of a package or script</i>
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Description

All functions of a function map of a package or script

Usage

```
functions(map)
```

Arguments

map	Function map.
-----	---------------

functions_called	<i>All functions that called in a package or R script</i>
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Description

All functions that called in a package or R script

Usage

```
functions_called(map)
```

Arguments

map	Function map.
-----	---------------

Value

Character vector of functions called.

map_cran_package	<i>Create the map of a CRAN package</i>
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Description

The latest version of the package is used.

Usage

```
map_cran_package(package, quiet = FALSE)
```

Arguments

package	CRAN package name.
quiet	Whether to be quiet or show download progress.

Examples

```
## Not run:
map <- map_cran_package("dotenv")
map
sankey_plot(map)

## End(Not run)
```

map_r_folder	<i>Map the function calls for a folder of R scripts</i>
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Description

Map the function calls for a folder of R scripts

Usage

```
map_r_folder(rpath, rfilepattern = default_r_file_pattern(),
  include_base = FALSE)
```

Arguments

rpath	Character vector of folders and files. Files are taken as given, folders are listed for files matching 'rfilepattern'.
rfilepattern	Pattern of file names to analyse. By default files with '.R', '.r', '.S' and '.s' extensions are used.
include_base	Whether to include functions from the 'base' package.

Value

A function_map object.

map_r_package	<i>Map an R package</i>
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Description

Map an R package

Usage

```
map_r_package(path, include_base = FALSE)
```

Arguments

path	Name of a source R package tar archive file, or path to the folder of an R package.
include_base	Whether to include functions from the 'base' package.

map_r_script	<i>Map the function calls for an R script</i>
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Description

Map the function calls for an R script

Usage

```
map_r_script(rfile, include_base = FALSE)
```

Arguments

rfile	The .R input file, or a connection to read from.
include_base	Whether to include calls to base functions in the output.

Value

A function_map object.

node_df	<i>Extract data about the functions in a function map</i>
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Description

Returns a data frame, where each row is a function in the function map. The data frame includes functions that are in (other) R packages, and are called from the mapped script, folder or package.

Usage

```
node_df(map)
```

Arguments

map	The function map object.
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Value

A data frame with one row for each function in the map. Current columns:

ID	The name of the function.
own	Whether it is a function in the mapped script, folder or package.
exported	Whether it is an exported function of the package. For scripts and folders it is always FALSE.

print.function_map	<i>Print method for a function map object.</i>
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Description

The object can be the map of an R file, a folder containing R files, or an R package. It prints an adjacency list, nicely formatted.

Usage

```
## S3 method for class 'function_map'
print(x, ...)

## S3 method for class 'function_map_rfile'
print(x, ...)

## S3 method for class 'function_map_rfolder'
print(x, ...)

## S3 method for class 'function_map_rpackage'
print(x, ...)
```

Arguments

x	Function map to print
...	Additional arguments, ignored currently.

Value

Printed object, invisibly.
 Printed object, invisibly.
 Printed object, invisibly.
 Printed object, invisibly.

rev_deps	<i>Reverse dependencies of all functions</i>
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Description

Reverse dependencies of all functions

Usage

```
rev_deps(map, multiples = FALSE)
```

Arguments

map	Function map.
multiples	Whether to keep multiple calls from the same function.

Value

Named list of character vectors.

sankey_plot	<i>Sankey plot of a function map</i>
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Description

Sankey plots usually show the flow of some quantity, but they can also be used to visualize functions calls between functions.

Usage

```
sankey_plot(map, ...)
```

Arguments

map	Function map.
...	Additional arguments are passed to <code>sankey::sankey</code> .

Details

By default exported functions in a package are colored dark blue, and packages called from another package are colored green.

Recursive calls are omitted from the plot.

Value

Nothing.

unused_functions	<i>Functions that are never used in a package</i>
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Description

These are the functions that are never called by an exported function, neither directly, nor indirectly.

Usage

```
unused_functions(map)
```

Arguments

map	Function map.
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