

Package ‘pkgnet’

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Type Package

Title Get Network Representation of an R Package

Version 0.1.0

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Description Tools from the domain of graph theory can be used to quantify the complexity and vulnerability to failure of a software package. That is the guiding philosophy of this package. 'pkgnet' provides tools to analyze the dependencies between functions in an R package and between its imported packages.

Imports assertthat, covr, data.table, DT, futile.logger, igraph, knitr, magrittr, methods, mvbutils, R6, rmarkdown, visNetwork

Suggests devtools, testthat

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URL <https://github.com/UptakeOpenSource/pkgnet>

BugReports <https://github.com/UptakeOpenSource/pkgnet/issues>

LazyData TRUE

RoxygenNote 6.0.1

VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

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AbstractGraphReporter *Abstract Graph Reporter Class*

Description

Defines the Abstract Class for all PackageGraphReporters defined in pkgnet. The class is not meant to be instantiated, but inherited from and its methods overloaded such that each Metric implements certain functionality.

Usage

AbstractGraphReporter

Format

An object of class R6ClassGenerator of length 24.

Public Members

edges A data.table from SOURCE to TARGET nodes describing the connections
 nodes A data.table with node as an identifier, and augmenting information about each node
 pkg_graph An igraph object describing the package graph
 network_measures A list of network measures calculated by calculate_network_features
 layout_type Character string indicating currently active graph layout
 graph_viz visNetwork object of package graph

Active Bindings

pkg_graph Returns the graph object
 network_measures Returns a table of network measures, one row per node
 graph_viz Returns the graph visualization object
 orphan_nodes Returns the list of orphan nodes
 layout_type If no value given, the current layout type for the graph visualization is returned. If a valid layout type is given, this function will update the layout_type field.
 orphan_node_clustering_threshold If no value given, the current orphan node clustering threshold is returned. If a valid orphan node clustering threshold is given, this function will update the orphan node clustering threshold.

See Also

Other AbstractReporters: [AbstractPackageReporter](#)

AbstractPackageReporter

Abstract Package Reporter Class

Description

Defines the Abstract Class for all PackageReporters defined in pkgnet. The class is not meant to be instantiated, but inherited from and its methods overloaded such that each Metric implements certain functionality.

Usage

AbstractPackageReporter

Format

An object of class R6ClassGenerator of length 24.

Public Methods

set_package(pkg_name, pkg_path = NULL) • Set the package that all operations in the object are done for.

• **Args:**

- pkg_name: a string with the name of the package you are analyzing.
- pkg_path: directory path to source code of package

get_summary_view() • Returns a particular reporters summary report on the package for use in a high level view

See Also

Other AbstractReporters: [AbstractGraphReporter](#)

CreatePackageReport *Surface the internal and external dependencies of an R package.*

Description

Surface the internal and external dependencies of an R package.

Usage

```
CreatePackageReport(pkg_name, pkg_reporters = DefaultReporters(),  
  pkg_path = NULL, report_path = file.path(getwd(), paste0(pkg_name,  
  "_report.html")))
```

Arguments

pkg_name	(string) name of a package
pkg_reporters	(list) a list of package reporters
pkg_path	(string) The path to the package repository. If given, coverage will be calculated for each function.
report_path	(string) The path and filename of the output report. Default report will be produced in working directory.

Value

A list of instantiated pkg_reporters fitted to pkg_name

Author(s)

B. Burns

See Also

GetPackageGraphs

DefaultReporters *Default Reporters*

Description

Instantiates a list of default reporters to feed into [CreatePackageReport](#)

Usage

DefaultReporters()

DependencyReporter *Package Dependency Reporter Class*

Description

This Reporter takes a package and uncovers the structure from its other package dependencies, determining which package it relies on is most central, allowing for a developer to determine how to vet its dependency tree

Usage

DependencyReporter

Format

An object of class R6ClassGenerator of length 24.

See Also

Other PackageReporters: [FunctionReporter](#), [SummaryReporter](#)

Examples

```
# Instantiate an object
reporter <- DependencyReporter$new()

# Seed it with a package
reporter$set_package("ggplot2")

# plot it up
reporter$plot_network()
```

FunctionReporter *Package Function Reporter Class*

Description

This Reporter takes a package and uncovers the structure from its other functions, determining useful information such as which function is most central to the package. Combined with testing information it can be used as a powerful tool to plan testing efforts.

Usage

```
FunctionReporter
```

Format

An object of class R6ClassGenerator of length 24.

Public Methods

`set_package(pkg_name, pkg_path)` • Set properties of this reporter. If `pkg_name` overrides a previously-set package name, any cached data will be removed.

- **Args:**

- `pkg_name`: String with the name of the package
- `pkg_path`: Optional path to the source code. To be used for test coverage, if provided.

See Also

Other PackageReporters: [DependencyReporter](#), [SummaryReporter](#)

SummaryReporter *Package Summary Reporter Class*

Description

Defines a concrete implementation of [AbstractPackageReporter](#) for a high level overview of a particular package. It will summarize things like lines of code, whether it's on CRAN, etc.

Usage

SummaryReporter

Format

An object of class R6ClassGenerator of length 24.

Public Methods

`set_package(pkg_name, pkg_path = NULL)` • Set the package that all operations in the object are done for.

- **Args:**

- `pkg_name`: a string with the name of the package you are analyzing.
- `pkg_path`: directory path to source code of package

`get_summary_view()` • Returns a particular reporters summary report on the package for use in a high level view

See Also

Other PackageReporters: [DependencyReporter](#), [FunctionReporter](#)

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