

Package ‘shinyExprPortal’

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Title A Configurable 'shiny' Portal for Sharing Analysis of Molecular Expression Data

Version 1.2.1

Maintainer Rafael Henkin <r.henkin@qmul.ac.uk>

Description Enables deploying configuration file-based 'shiny' apps with minimal programming for interactive exploration and analysis showcase of molecular expression data. For exploration, supports visualization of correlations between rows of an expression matrix and a table of observations, such as clinical measures, and comparison of changes in expression over time. For showcase, enables visualizing the results of differential expression from package such as 'limma', co-expression modules from 'WGCNA' and lower dimensional projections.

Depends R (>= 3.5.0)

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Imports config, stats, utils, shiny, htmltools, markdown, cli, dplyr, tidyr, yaml, data.table, bslib, iheatmapr, vegawidget, DT, qvalue, parallel, Rfast, rlang, shinyhelper

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Suggests testthat (>= 3.0.0), whisker, knitr, rmarkdown, r2d3, kableExtra, RColorBrewer

VignetteBuilder knitr

URL <https://c4tb.github.io/shinyExprPortal/>,
<https://github.com/C4TB/shinyExprPortal>

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BugReports <https://github.com/C4TB/shinyExprPortal/issues>

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Author Rafael Henkin [cre, aut, cph] (ORCID:
<<https://orcid.org/0000-0002-5511-5230>>)

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create_config_template
<i>Create a bare-bones configuration file template</i>

Description

The resulting file contain placeholder text in upper case for you to edit according to your needs. It also includes the three correlation modules by default.

Usage

```
create_config_template(target_dir, filename = "config.yaml")
```

Arguments

- target_dir location to create the configuration file
- filename optional file name, default is config.yaml

Value

Creates configuration file in target_dir

Examples

```
if (interactive()) {
  dir.create("newapp")
  create_config_template("newapp")
}
```

create_config_wizard	Create configuration and app.R files
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Description

This function runs an interactive wizard that guides the user through the creation of a basic configuration file. The wizard will work with the simple case of expression data where one sample matches exactly to one subject.

Usage

```
create_config_wizard(target_dir)
```

Arguments

target_dir	location where the configuration will be saved
------------	--

Details

Before you run the wizard, you should ensure that the target folder contains at least the expression matrix and measures data files. The expression matrix should follow the format of sample IDs in columns and genes in rows, with gene names in the first column of the table. The measures file should follow the format of subjects in rows and measures in columns, and you should ensure that all subjects have one sample and vice-versa.

Value

Creates configuration file in target_dir

Examples

```
if (interactive()) {  
  dir.create("newapp")  
  create_config_wizard("newapp")  
}
```

create_example	Create example files
----------------	----------------------

Description

Create example files for measures, expression matrix and lookup table

Usage

```
create_example(target_dir)
```

Arguments

target_dir location where to create the files

Value

Create examples files in target_dir

Examples

```
if (interactive()) {  
  dir.create("newapp")  
  create_example("newapp")  
}
```

create_module_template

Creates a module code template in current working directory

Description

Creates a module code template in current working directory

Usage

```
create_module_template(module_name, target_dir = "")
```

Arguments

module_name module name in camelCase
target_dir Optional folder where to save the file. Saves in current folder otherwise.

Value

Create file for module_name in current working directory

Examples

```
if (interactive()) {  
  create_module_template("newModule")  
}
```

run_app*Run the Shiny Application*

Description

This function should be run only after you have created the configuration file and placed all required files in the app folder. See `vignette("quickstart", package = "shinyExprPortal")` for help with setup or `vignette("fullguide", package = "shinyExprPortal")` for a complete configuration guide.

Usage

```
run_app(  
  config_file,  
  data_folder = "",  
  custom_modules = NULL,  
  nthreads = 1L,  
  ...  
)
```

Arguments

<code>config_file</code>	The name of the yaml configuration file
<code>data_folder</code>	Optional directory prefix for data files. Use this argument if you want to version your files across different folders
<code>custom_modules</code>	Optional list of available custom modules. See the 'Details' section.
<code>nthreads</code>	Optional number of threads/cores to speed up loading files and computing correlations on UNIX-based systems. Default is 1
<code>...</code>	Further optional arguments.

Details

`custom_modules` should contain a list of names for user-defined modules that are loaded in the environment before calling `run_app`. Each module should be accompanied by the corresponding `mod_moduleName_ui`, `mod_moduleName_server` `moduleName_config` functions. These functions could be placed in a `custom_modules.R` file, for example, and loaded using `source`. The package will then parse the configuration file, and if it contains one of the custom module names, it will call the module configuration parsing function and add it to the interface. See `vignette("customization")` for a complete example.

Please note that if running on Windows, `nthreads` will be always set to 1 due to limitations on the current implementation.

Value

Runs the app

See Also

[create_config_wizard\(\)](#) to create a configuration using a wizard, [create_config_template\(\)](#) to create a configuration file template.

Examples

```
if (interactive()) {  
  run_app("config.yaml", nthreads = 4)  
}
```

```
show_available_modules
```

Print list of currently supported modules

Description

See `vignette("config", package = "shinyExprPortal")` for details on how to configure each module.

Usage

```
show_available_modules()
```

Value

list of available modules

Examples

```
show_available_modules()
```

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