Package 'flashr'

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Type Package

Title Create Flashcards of Terms and Definitions

Version 0.3.0

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Description Provides functions for creating flashcard decks of terms and definitions. This package creates HTML slides using 'revealjs' that can be viewed in the 'RStudio' viewer or a web browser. Users can create flashcards from either existing built-in decks or create their own from CSV files or vectors of function names.

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URL https://github.com/JeffreyRStevens/flashr, https://jeffreyrstevens.github.io/flashr/

BugReports https://github.com/JeffreyRStevens/flashr/issues

Depends R (>= 2.10)

Imports cli, curl, gh, httr, memoise, revealjs, rmarkdown, testthat, utils

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Contents

`build_functions_df` *Build data frame of functions for input to flashcard()*

Description

To create a data frame of functions that can be used to create a flashcard deck, use `build_functions_df()`. This function calls `extract_functions()` to find the functions if the `file` argument is specified. Otherwise, users can pass a character vector of function names to the `fs` argument. Either way, a title must be passed to `title` to create the data frame.

Users can then either complete the *description* column of the data frame with their own descriptions or set the `desc` argument to TRUE to use descriptions from flashr_decks.

Usage

```
build_functions_df(file = NULL, fs = NULL, title, desc = TRUE, omit = TRUE)
```

Arguments

`file`	Character string of file name for text that includes code blocks. Can be local file or URL.
`fs`	If not using a file, character vector of functions [do not include `()`].
`title`	Character string of title for flashcard deck (required)
`desc`	Logical for whether to search for descriptions from flashr_decks (default is TRUE, which includes descriptions from flashr_decks).
`omit`	Logical for whether to omit terms that have no descriptions from flashr_decks (default is TRUE, which omits terms with no descriptions).

Value

Data frame suitable to include in `flashcard()`.

See Also

Other functions for extracting code and functions: `extract_code()`, `extract_functions()`

Examples

```
build_functions_df(fs = c("apple", "apply", "+"), title = "Test")
```

`choose_deck` *Choose from available flashcard decks*

Description

This function prints a list of flashcard decks to the console and let's the user choose one of the decks. By default, the function searches the flashr_decks repo. But other GitHub repos can be used.

To narrow the results, include text in the `pattern` argument (for example, `choose_deck(pattern = "r4ds")`).

Usage

```
choose_deck(
  pattern = NULL,
  choice = NULL,
  repo = "JeffreyRStevens/flashr_decks"
)
```

Arguments

`pattern`	String pattern to search in list of decks.
`choice`	Integer value of choice from list of decks if you already know which deck you would like to use without listing again.
`repo`	GitHub username and repo for deck repository in the format of "username/repository". Default value is "JeffreyRStevens/flashr_decks".

Value

Outputs a list of available built-in flashcard decks to the console, where the user can choose one of the decks to generate flashcards.

Note

This function **requires internet connectivity** as it checks GitHub repos for decks.

See Also

Other functions for finding decks: `list_decks()`

Examples

```
## Not run:
# Choose from all available decks in default repository
choose_deck()

# Choose from decks including text matching pattern
choose_deck(pattern = "r4ds")

# Choose from decks from specific repository
choose_deck(repo = "JeffreyRStevens/flashr_decks")

## End(Not run)
```

`create_deck` *Create deck from vector of functions*

Description

The `create_deck()` function generates a set of flashcards with randomly ordered pairs of terms and descriptions from a vector of functions provided by the user. The function outputs reveal.js presentation as an HTML file. If running in RStudio, the flashcards are output to the viewer. Otherwise, they are output to a web browser.

Usage

```
create_deck(
  x,
  title = NULL,
  termsfirst = TRUE,
  package = TRUE,
  theme = "moon",
  file = NULL,
  random = TRUE,
  fontsize = "default",
  fontcolor = NULL,
  linkcolor = NULL,
  use_browser = FALSE
)
```

Arguments

`x`	Name of pre-existing flashcard deck or path and name of CSV file containing terms and descriptions
`title`	Title provided for flashcard deck. Defaults to "Custom deck" if not provided.
`termsfirst`	Logical indicating whether to show terms first (TRUE) or descriptions first (FALSE)
`package`	Logical indicating whether to include package name in term

theme	Name of reveal.js theme to use for flashcards
file	Path and file name used to save flashcard deck locally (must save as HTML)
random	Logical indicating whether to randomize order of terms (TRUE) or use order from data frame
fontsize	Base font size for presentation. Acceptable values include "default" (500%), "large" (700%), and "small" (300%). Custom values can be set as percentages (e.g., "250%").
fontcolor	Font color for non-link text. Can be R color name, HTML color name, or hex code.
linkcolor	Font color for link text. Can be R color name, HTML color name, or hex code.
use_browser	Logical indicating whether to show the presentation in the RStudio viewer when available (FALSE) or the system's default browser (TRUE)

Value

An HTML file of terms and descriptions rendered in the RStudio viewer or web browser.

See Also

Other functions for creating decks: `flashcard()`

Examples

```
# Display terms then descriptions
my_functions <- c("as_tibble()", "bind_rows()", "c()")
create_deck(x = my_functions)

# Customize the title
create_deck(x = my_functions, title = "My deck")

# Save the HTML version of the flashcard deck locally
create_deck(x = my_functions, title = "My deck", file = "my_deck.html")
```

---

data_types *Data types deck*

Description

This flashcard deck includes terms associated with data types and structures.

Usage

```
data_types
```

Format

A data frame with 4 columns.

term reference term or function

description description or definition of term

url URL for function documentation

package package including function/argument

title title of deck

---

extract_code *Extract code blocks from R Markdown or Quarto file*

Description

To extract code blocks, apply `extract_code()` to R Markdown or Quarto files either locally or via a URL. This function returns a character vector where each line of content from an R code block is an element of the vector. Code block options are not returned—only the content of the block. Code blocks from other languages/engines (e.g., Python) are not returned.

Usage

```
extract_code(file, empty = TRUE, comments = TRUE)
```

Arguments

`file`	Character string of file name for text that includes code blocks. Can be local file or URL.
`empty`	Logical indicating whether to include empty lines (`""`) or whether to remove empty lines (default is TRUE, which includes empty lines).
`comments`	Logical indicating whether to include comment lines starting with # or whether to remove comment lines (default is TRUE, which includes comment lines).

Value

Returns character vector of individual lines of code.

Note

This function is adapted from one Yihui Xie posted at https://yihui.org/en/2023/01/func-call/.

See Also

Other functions for extracting code and functions: `build_functions_df()`, `extract_functions()`

Examples

```
extract_code("https://raw.githubusercontent.com/JeffreyRStevens/flashr/refs/heads/main/README.Rmd")
```

`extract_functions` *Extract function calls from character vector of R code*

Description

This function finds all of the R functions in a character vector of R code. For R scripts, first use `readLines()` or `readr::read_file()` to import the script into a character vector. For R Markdown or Quarto documents, first use `extract_code()` to find all of the R code in code blocks. The character vector can then be passed to `extract_functions()` to find all of the functions. By default, all instances of functions are returned. To omit duplicate functions, set `duplicates = FALSE`.

Usage

```
extract_functions(code, duplicates = TRUE)
```

Arguments

`code`	Object that contains R code.
`duplicates`	Logical indicating whether to include duplicates of functions or whether to remove duplicates (default is TRUE, which includes duplicates).

Value

Returns character vector of function names without parentheses (e.g., it returns "library" rather than "library()") included in R code.

Note

This function is adapted from one Yihui Xie posted at https://yihui.org/en/2023/01/func-call/.

See Also

Other functions for extracting code and functions: `build_functions_df()`, `extract_code()`

Examples

```
extract_functions(extract_code(
  "https://raw.githubusercontent.com/JeffreyRStevens/flashr/refs/heads/main/README.Rmd"
))
```

`flashcard` *Create flashcards*

Description

The `flashcard()` function generates a set of flashcards with randomly ordered pairs of terms and descriptions from built-in flashcard decks. The function outputs reveal.js presentation as an HTML file. If running in RStudio, the flashcards are output to the viewer. Otherwise, they are output to a web browser.

Usage

```
flashcard(
  x,
  termsfirst = TRUE,
  package = TRUE,
  theme = "moon",
  file = NULL,
  random = TRUE,
  fontsize = "default",
  fontcolor = NULL,
  linkcolor = NULL,
  use_browser = FALSE,
  omit_na = TRUE
)
```

Arguments

`x`	Name of pre-existing flashcard deck or path and name of CSV file containing terms and descriptions
`termsfirst`	Logical indicating whether to show terms first (TRUE) or descriptions first (FALSE)
`package`	Logical indicating whether to include package name in term
`theme`	Name of reveal.js theme to use for flashcards
`file`	Path and file name used to save flashcard deck locally (must save as HTML)
`random`	Logical indicating whether to randomize order of terms (TRUE) or use order from data frame
`fontsize`	Base font size for presentation. Acceptable values include "default" (500%), "large" (700%), and "small" (300%). Custom values can be set as percentages (e.g., "250%").
`fontcolor`	Font color for non-link text. Can be R color name, HTML color name, or hex code.
`linkcolor`	Font color for link text. Can be R color name, HTML color name, or hex code.
`use_browser`	Logical indicating whether to show the presentation in the RStudio viewer when available (FALSE) or the system's default browser (TRUE)
`omit_na`	Logical indicating whether to omit terms that have no descriptions from the deck (default is TRUE, which omits terms with no descriptions)

Value

An HTML file of terms and descriptions rendered in the RStudio viewer or web browser.

Note

This function **requires internet connectivity** to use existing decks. An internet connection is not required if you supply a CSV file. However, without an internect connection, themes other than *black*, *white*, and *serif*, may not render properly, as they require access to Google Fonts.

See Also

Other functions for creating decks: `create_deck()`

Examples

```
# Display terms then descriptions
flashcard("data_types")

# Display descriptions then terms
flashcard("data_types", termsfirst = FALSE)

# Display terms without package information
flashcard("data_types", package = FALSE)
```

---

list_decks *List available available flashcard decks*

Description

This function searches for flashcard decks stored in GitHub repositories. By default, the function searches the flashr_decks repo. But other GitHub repos can be used.

To narrow the results, include text in the `pattern` argument (for example, `list_decks(pattern = "r4ds")`).

Usage

```
list_decks(
  pattern = NULL,
  repo = "JeffreyRStevens/flashr_decks",
  quiet = FALSE
)
```

Arguments

pattern	String pattern to search in list of decks.
repo	GitHub username and repo for deck repository in the format of "username/repository". Default value is "JeffreyRStevens/flashr_decks".
quiet	Logical to prevent list information from printing to console.

Details

You are welcome to fork the flashr_decks repo and modify or add your own decks. Or you can create your own repo from scratch. Just make sure to place your decks in a directory called `decks/` in your root directory. Then set the `repo` argument to your username and repo (see Examples).

Value

Outputs a list of available built-in flashcard decks to the console.

See Also

Other functions for finding decks: `choose_deck()`

Examples

```
# View all available decks
list_decks()

# View decks with text matching pattern
list_decks(pattern = "r4ds")

# View decks from specific repository
list_decks(repo = "JeffreyRStevens/flashr_decks")
```

`vectors` *Vectors deck*

Description

This flashcard deck includes terms associated with vectors.

Usage

```
vectors
```

Format

A data frame with 4 columns.

term reference term or function

description description or definition of term

package package including function/argument

title title of deck

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