Package 'upstartr'

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Type Package

Title Utilities Powering the Globe and Mail's Data Journalism Template

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Description Core functions necessary for using The Globe and Mail's R data journalism template, 'startr', along with utilities for day-to-day data journalism tasks, such as reading and writing files, producing graphics and cleaning up datasets.

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Contents

begin_processing . . . 3
calc_index . . . 3
calc_mode . . . 4
clean_columns . . . 4
combine_csvs . . . 5
combine_excels . . . 5
convert_str_to_logical . . . 6
dir_data_cache . . . 7
dir_data_out . . . 7
dir_data_processed . . . 8
dir_data_raw . . . 8
dir_path . . . 9
dir_plots . . . 9
dir_reports . . . 10
dir_scrape . . . 10
dir_src . . . 11
end_processing . . . 11
initialize_startr . . . 12
not.na . . . 13
not.null . . . 14
read_all_excel_sheets . . . 14
remove_non_utf8 . . . 15
render_notebook . . . 15
run_analyze . . . 16
run_config . . . 16
run_notebook . . . 16
run_process . . . 17
run_visualize . . . 17
scale_x_percent . . . 18
scale_y_percent . . . 18
simplify_string . . . 19
unaccent . . . 20
write_excel . . . 20
write_plot . . . 21
write_shp . . . 22
%not_in% . . . 22

Index **23**

begin_processing *Runs the pre-processing step on a startr project.*

Description

The pre-processing step, run as part of `upstartr::run_process` during the `process.R` stage of a startr project, logs all variables currently in the global environment, which will then be removed during the post-processing step to keep the startr environment unpolluted.

Usage

```
begin_processing(should_clean_processing_variables = TRUE)
```

Arguments

`should_clean_processing_variables`	Either TRUE, FALSE, or pulled from the environment if set.

Value

A list of all environment variables present before the function was run

calc_index *Index values*

Description

Index numeric vector to first value. By default, the index base will be 0, turning regular values into percentage change. In some cases, you may want to index to a different base, like 100, such as if you're looking at financial data.

Usage

```
calc_index(m, base = 0)
```

Arguments

`m`	Numeric vector to index to first value.
`base`	Base to index against. (Default: 0)

Value

An vector of indexed values.

Examples

```
calc_index(c(5, 2, 8, 17, 7, 3, 1, -4))
calc_index(c(5, 2, 8, 17, 7, 3, 1, -4), base = 100)
```

`calc_mode` *Calculate mode*

Description

Calculates the mode of a given vector.

Usage

```
calc_mode(x)
```

Arguments

x	Any kind of vector — numeric, character, logical.

Value

The mode(s) of that vector.

Examples

```
calc_mode(c(1, 1, 2, 3, 4))
calc_mode(c('the', 'quick', 'brown', 'fox', 'jumped', 'over', 'the', 'lazy', 'dog'))
calc_mode(c(TRUE, TRUE, FALSE, FALSE, TRUE, FALSE, FALSE, FALSE))
```

`clean_columns` *Cleans up column names by forcing them into tidyverse style*

Description

Zero-configuration function that takes unwieldy column names and coerces them into tidyverse-styled column names.

Usage

```
clean_columns(x)
```

Arguments

x	A vector of column names.

Value

A character vector of column names.

Examples

```
clean_columns(c("Date of Purchase", "Item No.", "description", "",
  "Transaction at Jane's Counter?", "Auditing - Worth it?"))
```

---

combine_csvs *Combine CSVs in a directory*

Description

Given a directory (and, optionally, a pattern to search against), concatenate all CSV files into a single tibble.

Usage

```
combine_csvs(dir, pattern = "*.csv", ...)
```

Arguments

dir	Path to the directory to look at for files.
pattern	Pattern to use for detecting files. (Default: '*.csv')
...	Parameters to pass to readr::read_csv.

Value

A tibble of concatenated data from multiple CSV files.

---

combine_excels *Combine Excel files in a directory*

Description

Given a directory (and, optionally, a pattern to search against), concatenate all Excel files into a single tibble.

Usage

```
combine_excels(dir, pattern = "*.xls[x]?", all_sheets = FALSE, ...)
```

Arguments

dir	Path to the directory to look at for files.
pattern	Pattern to use for detecting files. (Default: '*.xls[x]?')
all_sheets	Should this function also concatenate all sheets within each Excel file into one long tibble? (Default: FALSE)
...	Parameters to pass to readxl::read_excel.

Value

A tibble of concatenated data from multiple Excel files.

---

convert_str_to_logical

Converts a character vector to logicals

Description

Takes a character vector and converts it to logicals, optionally using a vector of patterns to match against for truthy and falsy values.

Usage

```
convert_str_to_logical(
  x,
  truthy = c("T", "TRUE", "Y", "YES"),
  falsy = c("F", "FALSE", "N", "NO")
)
```

Arguments

x	A character vector.
truthy	A vector of case-insensitive truthy values to turn into TRUE.
falsy	A vector of case-insensitive falsy values to turn into FALSE.

Value

A logical vector.

Examples

```
convert_str_to_logical(c('YES', 'Y', 'No', 'N', 'YES', 'yes', 'no', 'Yes', 'NO', 'Y', 'y'))
```

dir_data_cache *Get path within cached data directory.*

Description

Constructs a path within startr's data/cache/ directory.

Usage

```
dir_data_cache(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

dir_data_out *Get path within disposable data outputs directory.*

Description

Constructs a path within startr's data/out/ directory.

Usage

```
dir_data_out(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

dir_data_processed *Get path within processed data directory.*

Description

Constructs a path within startr's data/processed/ directory.

Usage

```
dir_data_processed(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

dir_data_raw *Get path within raw data directory.*

Description

Constructs a path within startr's data/raw/ directory.

Usage

```
dir_data_raw(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

dir_path *Construct an arbitrary path.*

Description

Convenience function that constructs a path. Wraps `here::here`.

Usage

```
dir_path(...)
```

Arguments

`...`	Any number of path strings, passed in the same fashion as `here::here`.

Value

A path string.

dir_plots *Get path within plots directory.*

Description

Constructs a path within startr's plots/ directory.

Usage

```
dir_plots(...)
```

Arguments

`...`	Any number of path strings, passed in the same fashion as `here::here`.

Value

A path string.

dir_reports *Get path within reports directory.*

Description

Constructs a path within startr's reports/ directory.

Usage

```
dir_reports(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

dir_scrape *Get path within scrape directory.*

Description

Constructs a path within startr's scrape/ directory.

Usage

```
dir_scrape(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

dir_src *Get path within src directory*

Description

Constructs a path within startr's main R/ directory.

Usage

```
dir_src(...)
```

Arguments

...	Any number of path strings, passed in the same fashion as here::here.

Value

A path string.

end_processing *Runs the post-processing step on a startr project.*

Description

The post-processing step, run as part of upstartr::run_process during the process.R stage of a startr project, removes all variables saved by upstartr::begin_processing and then beeps to announce it's finished.

Usage

```
end_processing(
  should_clean_processing_variables = TRUE,
  should_beep = TRUE,
  logged_vars = NULL
)
```

Arguments

should_clean_processing_variables	Either TRUE, FALSE, or pulled from the environment if set.
should_beep	Either TRUE, FALSE, or pulled from the environment if set.
logged_vars	A list of variables that existed before the processing step began.

Value

No return value, called for side effects

`initialize_startr` *Initialize startr project*

Description

Used to initialize a startr template for analysis. Will enforce some startr-required standards for analysis (such as removing scientific notation, setting timezones, and writing some project configs to 'options').

Usage

```
initialize_startr(
  author = "Firstname Lastname <firstlast@example.com>",
  title = "startr",
  scipen = 999,
  timezone = "America/Toronto",
  should_render_notebook = FALSE,
  should_process_data = TRUE,
  should_timestamp_output_files = FALSE,
  should_clean_processing_variables = TRUE,
  should_beep = TRUE,
  set_minimal_graphics_theme = TRUE,
  packages = c(),
  repos = "https://packagemanager.posit.co/cran/latest"
)
```

Arguments

`author`	Name and email of the startr project author
`title`	Title of the startr project
`scipen`	Which level of scientific precision to use. (Default: 999)
`timezone`	The timezone for analysis. (Default: 'America/Toronto')
`should_render_notebook`	Whether the RMarkdown notebook should be rendered. (Default: FALSE)
`should_process_data`	Whether startr's process step should be run. (Default: TRUE)
`should_timestamp_output_files`	Whether write_excel's output files should be timestamped. (Default: FALSE)
`should_clean_processing_variables`	Whether processing variables should be cleaned from the environment after processing is complete. (Default: TRUE)
`should_beep`	Whether startr should beep after tasks like processing or knitting RMarkdown notebooks. (Default: TRUE)
`set_minimal_graphics_theme`	Whether the minimal graphics theme should be used. (Default: TRUE)

packages	Vector of package names, from CRAN, Github or Bioconductor to be installed. If using GitHub, package names should be in the format 'user/repo', e.g. 'globe-andmail/upstartr'.
repos	The CRAN mirror used to install 'packages'. Defaults to Posit Package Manager's rolling binary snapshot, which serves pre-built binaries for a much wider range of platforms (including Linux) and R versions than CRAN's own mirrors do - this avoids slow, sometimes multi-hour source compiles for heavy packages like 'arrow' or 'sf' when no matching binary is available on CRAN. Set to 'NULL' to leave your existing 'repos' option untouched, e.g. if your organization already runs its own mirror. (Default: 'https://packagemanager.posit.co/cran/latest')

Value

No return value, called for side effects

`not.na` *Opposite of is.na*

Description

Given a vector, returns TRUE for all entities that aren't NA.

Usage

```
not.na(x)
```

Arguments

x	A vector to check for NAs against.

Value

A vector of elements that aren't NA

Examples

```
not.na(c(1, NA, 2, NA))
```

not.null *Opposite of is.null*

Description

Given a list, returns TRUE for all entities that aren't NULL.

Usage

```
not.null(x)
```

Arguments

x	A vector to check for NULLs against.

Value

Elements that aren't NULL

Examples

```
not.null(list(1, NULL, 2, NULL))
```

read_all_excel_sheets *Combine all sheets in an Excel file*

Description

Reads all sheets in a single Excel file using `readxl::read_excel` and concatenates them into a single, long tibble.

Usage

```
read_all_excel_sheets(filepath, ...)
```

Arguments

filepath	Path to the Excel file.
...	Parameters to pass to `readxl::read_excel`.

Value

A tibble data concatenated from a all sheets in an Excel file.

remove_non_utf8 *Removes non-UTF-8 characters*

Description

Removes non-UTF-8 characters in a given character vector.

Usage

```
remove_non_utf8(x)
```

Arguments

x	A character vector.

Value

A character vector of strings without non-UTF-8 characters.

Examples

```
non_utf8 <- 'fa\xE7ile'
  Encoding(non_utf8) <- 'latin1'
  remove_non_utf8(non_utf8)
```

render_notebook *Renders out an RMarkdown notebook.*

Description

Renders an RMarkdown notebook using `upstartr::render_notebook` and then beeps.

Usage

```
render_notebook(notebook_file, output_dir = dir_reports())
```

Arguments

notebook_file	The path for the RMarkdown notebook you're rendering.
output_dir	The directory to write the outputs to.

Value

No return value, called for side effects

run_analyze *Runs the analysis step for a startr project.*

Description

Sources `analyze.R`.

Usage

```
run_analyze()
```

Value

No return value, called for side effects

run_config *Configures an existing startr project*

Description

Sources `config.R` and `functions.R` in turn.

Usage

```
run_config()
```

Value

No return value, called for side effects

run_notebook *Runs the notebook rendering step for a startr project.*

Description

Renders an RMarkdown notebook using `upstartr::render_notebook` and then beeps.

Usage

```
run_notebook(
  filename = "notebook.Rmd",
  should_beep = TRUE,
  should_render_notebook = TRUE
)
```

Arguments

filename	The filename for the RMarkdown notebook you want to render.
should_beep	Either TRUE, FALSE, or pulled from the environment if set.
should_render_notebook	Either TRUE, FALSE, or pulled from the environment if set.

Value

No return value, called for side effects

---

run_process *Runs the processing step on a startr project.*

Description

Runs the pre-processing step (see `upstartr::begin_processing` for details), then sources `process.R`, then runs the post-processing step (see `upstartr::end_processing` for details).

Usage

```
run_process(should_process_data = TRUE)
```

Arguments

should_process_data	Either TRUE, FALSE, or pulled from the environment if set.

Value

No return value, called for side effects

---

run_visualize *Runs the visualization step for a startr project.*

Description

Sources `visualize.R`.

Usage

```
run_visualize()
```

Value

No return value, called for side effects

scale_x_percent *Create a continuous x-axis scale using percentages*

Description

Convenience function to return a scale_x_continuous function using percentage labels.

Usage

```
scale_x_percent(...)
```

Arguments

...	All your usual continuous x-axis scale parameters.

Value

A scale object to be consumed by ggplot2.

scale_y_percent *Create a continuous y-axis scale using percentages*

Description

Convenience function to return a scale_y_continuous function using percentage labels.

Usage

```
scale_y_percent(...)
```

Arguments

...	All your usual continuous y-axis scale parameters.

Value

A scale object to be consumed by ggplot2.

simplify_string *Simplifies strings for analysis*

Description

Takes a character vector and "simplifies" it by uppercasing, removing most non-alphabetic (or alphanumeric) characters, removing accents, forcing UTF-8 encoding, removing excess spaces, and optionally removing stop words. Useful in cases where you have two large vector of person or business names you need to compare, but where misspellings may be common.

Usage

```
simplify_string(
  x,
  alpha = TRUE,
  digits = FALSE,
  unaccent = TRUE,
  utf8_only = TRUE,
  case = "upper",
  trim = TRUE,
  stopwords = NA
)
```

Arguments

x	A character vector.
alpha	Should alphabetic characters be included in the cleaned up string? (Default: TRUE)
digits	Should digits be included in the cleaned up string? (Default: FALSE)
unaccent	Should characters be de-accented? (Default: TRUE)
utf8_only	Should characters be UTF-8 only? (Default: TRUE)
case	What casing should characters use? Can be one of 'upper', 'lower', 'sentence', 'title', or 'keep' for the existing casing (Default: 'upper')
trim	Should strings be trimmed of excess spaces? (Default: TRUE)
stopwords	An optional vector of stop words to be removed.

Value

A character vector of simplified strings.

Examples

```
simplify_string(c('J. Jonah Jameson', 'j jonah jameson',
  'j   jonah 123   jameson', 'J Jónah Jameson...'))
simplify_string(c('123 Business Inc.', '123 business incorporated',
  '123 ... Business ... Inc.'), digits = TRUE, stopwords = c('INC', 'INCORPORATED'))
```

unaccent *De-accents strings*

Description

Replace accented characters with their non-accented versions. Useful when dealing with languages like French, Spanish or Portuguese, where accents can lead to compatibility issues during data analysis.

Usage

```
unaccent(x, remove.nonconverted = FALSE, ...)
```

Arguments

x	A character vector.
remove.nonconverted	Should the function remove unmapped encodings? (Default: FALSE)
...	Parameters passed to textclean::replace_non_ascii

Value

A character vector of strings without accents.

Examples

```
unaccent('façile')
unaccent('Montréal')
```

write_excel *Write out an Excel file with minimal configuration*

Description

Takes a tibble or dataframe variable and saves it out as an Excel file using the variable name as the filename.

Usage

```
write_excel(
  variable,
  output_dir = dir_data_out(),
  should_timestamp_output_files = FALSE
)
```

Arguments

variable	A tibble or dataframe object.
output_dir	The directory to save the file out to.
should_timestamp_output_files	Either TRUE, FALSE, or pulled from the environment if set.

Value

No return value, called for side effects

---

write_plot *Write out a ggplot2 graphic with minimal configuration*

Description

Takes a ggplot2 object and writes it to disk via ggplot2::ggsave using the variable name as the filename.

Usage

```
write_plot(variable, format = "png", output_dir = dir_plots(), ...)
```

Arguments

variable	A tibble or dataframe object.
format	The desired format for the plot, be it 'png', 'pdf', etc. Accepts formats you'd pass to ggplot2::ggsave's 'device' parameter.
output_dir	The directory to save the plot out to.
...	Other settings to pass to ggsave, such as format, width, height or dpi.

Value

No return value, called for side effects

write_shp *Write a shapefile to disk*

Description

Utility function that wraps `sf::st_write`, but first removes a previous version of the shapefile if it exists (by default, `sf::st_write` will throw an error.)

Usage

```
write_shp(shp, path, ...)
```

Arguments

shp	A spatial object.
path	The desired filepath for the shapefile.
...	Other settings to pass to st_write, such as format, width, height or dpi.

Value

No return value, called for side effects

%not_in% *Opposite of %in%*

Description

Given vectors A and B, returns only the entities from vector A that don't occur in vector B.

Usage

```
x %not_in% table
```

Arguments

x	The vector you want to check.
table	Table in which to do lookups against x.

Value

Same form of return as %in% — except it will return only elements on the lhs that aren't present on the rhs

Examples

```
c(1, 2, 3, 4, 5) %not_in% c(4, 5, 6, 7, 8)
```

Index

%not_in%, 22

begin_processing, 3, *11*, *17*

calc_index, 3
calc_mode, 4
clean_columns, 4
combine_csvs, 5
combine_excels, 5
convert_str_to_logical, 6

dir_data_cache, 7
dir_data_out, 7
dir_data_processed, 8
dir_data_raw, 8
dir_path, 9
dir_plots, 9
dir_reports, 10
dir_scrape, 10
dir_src, 11

end_processing, 11, *17*

ggsave, *21*

here, *7–11*

initialize_startr, 12

not.na, 13
not.null, 14

read_all_excel_sheets, 14
read_csv, *5*
read_excel, *6*, *14*
remove_non_utf8, 15
render_notebook, *15*, 15, *16*
replace_non_ascii, *20*
run_analyze, 16
run_config, 16
run_notebook, 16
run_process, *3*, *11*, 17
run_visualize, 17

scale_x_percent, 18
scale_y_percent, 18
simplify_string, 19
st_write, *22*

unaccent, 20

write_excel, 20
write_plot, 21
write_shp, 22