

Package: a1lytables (via r-universe)

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Title Create Spreadsheet Publications Following Best Practice

Version 0.3.2

Description Generate spreadsheet publications that follow best practice guidance from the UK government's Analysis Function, with a focus on accessibility. Based on 'openxlsx'. See also the Python package 'gptables'.

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URL <https://co-analysis.github.io/a1lytables/>,
<https://github.com/co-analysis/a1lytables>

BugReports <https://github.com/co-analysis/a1lytables/issues>

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as_a11ytable	<i>Coerce To An 'a11ytable' Object</i>
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Description

Functions to check if an object is an a11ytable, or coerce it if possible.

Usage

```
as_a11ytable(x)
```

```
is_a11ytable(x)
```

Arguments

x A data.frame object to coerce.

Value

as_a11ytable returns an object of class a11ytable if possible. is_a11ytable returns TRUE if the object has class a11ytable, otherwise FALSE.

Examples

```
is_a11ytable(demo_a11ytable)
```

at_template_a11ytable *Insert Demo 'create_a11ytable' Template*

Description

Insert at the cursor a template for `create_a11ytable` from the 'a11ytable' package, pre-filled with demo data.

Usage

```
at_template_a11ytable()
```

at_template_workflow *Insert Full Demo 'a11ytables' Template Workflow*

Description

Insert at the cursor (a) demo templates for cover, contents and notes tables, and (b) a call to `create_a11ytable` pre-filled with demo data.

Usage

```
at_template_workflow()
```

create_a11ytable *Create An 'a11ytable' Object*

Description

Create a new a11ytable-class object, which is a special data.frame that contains all the information needed in your output spreadsheet. In turn, the object created by this function can be used to populate an 'openxlsx' Workbook-class object with the function `generate_workbook`.

Usage

```
create_a11ytable(  
  tab_titles,  
  sheet_types = c("cover", "contents", "notes", "tables"),  
  sheet_titles,  
  blank_cells = NA_character_,  
  sources = NA_character_,  
  custom_rows = list(NA_character_),  
  tables  
)
```

Arguments

tab_titles	Required character vector, one value per sheet. Each title will appear literally on each tab of the final spreadsheet output. Keep brief. Letters and numbers only; do not start with a number; use underscores for spaces. For example: 'Cover', 'Contents', 'Notes', 'Table_1'. Will be corrected automatically unless there's an error.
sheet_types	Required character vector, one value per sheet. Sheets that don't contain publication tables ('meta' sheets) should be of type 'contents', 'cover' or 'notes'. Sheets that contain statistical tables of data are type 'tables'.
sheet_titles	Required character vector, one value per sheet. The main title for each sheet, which will appear in cell A1 (top-left corner).
blank_cells	Optional character vector, one value per sheet. A short sentence to explain the reason for any blank cells in the sheet. Supply as NA_character_ if empty. Most likely to be used with sheet type 'tables'.
sources	Optional character vector, one value per sheet. The origin of the data for a given sheet. Supply as NA_character_ if empty. To be used with sheet type 'tables'.
custom_rows	Optional list of character vectors. One list element per sheet, one character vector element per row of pre-table metadata. Supply a list element as NA_character_ if empty. To be used with sheet type 'tables', but can also be used for sheet types 'contents' and 'notes'.
tables	Required list of data.frames (though the cover sheet may be supplied as a list), one per sheet. See details.

Details

How to supply data to the 'tables' argument:

Formats for the elements collected as a list and passed to the 'tables' argument, depending on the sheet type.

- Sheet type 'cover': either (a) a list where each element name is a section header and each element's content is a character vector whose elements will make up separate rows of that section (recommended), or (b) a data.frame with one row per subsection, with one column for section titles and one column for corresponding for that section's body text. For example, you may have a section with the title 'Contact details' that contains an email address and telephone number. You can use linebreaks (i.e. '\n') to separate text into paragraphs.
- Sheet type 'contents': one row per sheet, two columns suggested at least (named 'Tab title' and 'Worksheet title').
- Sheet type 'notes': one row per note, two columns suggested (named 'Note number', 'Note text'), where notes are in the form '[note 1]'.
- Sheet type 'tables': a tidy, rectangular data.frame containing the data to be published. It's the user's responsibility to add notes in the form '[note 1]' to column headers, or in a special 'Notes' row.

How to supply hyperlinks:

You can provide text in Markdown link syntax (e.g. '[GOV.UK](https://www.gov.uk)', adding 'mailto:' before an email address) and the containing cell will be rendered as a hyperlink in the

output spreadsheet. Note that whole cells will become hyperlinks; there is no support for selected words in a sentence to be rendered as a hyperlink.

Hyperlinks can be supplied in the character strings to three arguments:

- To the 'tables' argument for sheet type 'cover' only. It's recommended to supply the cover information as a list rather than a data.frame, which will allow you to make specific rows within a section (e.g. 'contact us') into hyperlinks.
- To the 'custom_rows' argument for sheets of type 'contents', 'notes' and 'tables'.
- To the 'source' argument for sheets of type 'table' only.

Value

An object with classes 'a1lytable', 'tbl' and 'data.frame'.

Examples

```
# Prepare some demo tables of information

set.seed(1066)

cover_list <- list(
  "Section 1" = c("First row of Section 1.", "Second row of Section 1."),
  "Section 2" = "The only row of Section 2.",
  "Section 3" = c(
    "[Website](https://co-analysis.github.io/a1lytables/)",
    "[Email address](mailto:fake.address@a1lytables.com)"
  )
)

contents_df <- data.frame(
  "Sheet name" = c("Notes", "Table_1", "Table_2"),
  "Sheet title" = c(
    "Notes used in this workbook",
    "First Example Sheet",
    "Second Example Sheet"
  ),
  check.names = FALSE
)

notes_df <- data.frame(
  "Note number" = paste0("[note ", 1:3, "]"),
  "Note text" = c("First note.", "Second note.", "Third note."),
  check.names = FALSE
)

table_1_df <- data.frame(
  Category = LETTERS[1:10],
  "Numeric [note 1]" = 1:10,
  "Numeric suppressed" = c(1:4, "[c]", 6:9, "[x]"),
  "Numeric thousands" = abs(round(rnorm(10), 4) * 1e5),
  "Numeric decimal" = abs(round(rnorm(10), 5)),
  "This column has a very long name that means that the column width needs to be widened" = 1:10,
```

```

Notes = c("[note 1]", rep(NA_character_, 4), "[note 2]", rep(NA_character_, 4)),
check.names = FALSE
)

table_2_df <- data.frame(Category = LETTERS[1:10], Numeric = 1:10)

# Create 'a11ytables' object

x <-
a11ytables::create_a11ytable(
  tab_titles = c("Cover", "Contents", "Notes", "Table_1", "Table_2"),
  sheet_types = c("cover", "contents", "notes", "tables", "tables"),
  sheet_titles = c(
    "The 'a11ytables' Demo Workbook",
    "Table of contents",
    "Notes",
    "Table 1: First Example Sheet",
    "Table 2: Second Example Sheet"
  ),
  blank_cells = c(
    rep(NA_character_, 3),
    "Blank cells indicate that there's no note in that row.",
    NA_character_
  ),
  custom_rows = list(
    NA_character_,
    NA_character_,
    "A custom row.",
    c(
      "First custom row [with a hyperlink.](https://co-analysis.github.io/a11ytables/)",
      "Second custom row."
    ),
    "A custom row."
  ),
  sources = c(
    rep(NA_character_, 3),
    "[The Source Material, 2024.](https://co-analysis.github.io/a11ytables/)",
    "The Source Material, 2024."
  ),
  tables = list(cover_list, contents_df, notes_df, table_1_df, table_2_df)
)

# Test that 'a11ytable' is one of the object's classes
is_a11ytable(x)

# Look at the structure of the object
str(x, max.level = 2)

```

Description

A pre-created 'al1ytables' object ready to be converted to an 'openxlsx' Workbook-class object with [generate_workbook](#).

Usage

```
demo_a11ytable
```

Format

A data.frame with 6 rows and 7 columns:

tab_title Character. Text to appear on each sheet's tab.

sheet_type Character. The content type for each sheet: 'cover', 'contents', 'notes', or 'tables'.

sheet_title Character. The title that will appear in cell A1 (top-left) of each sheet.

blank_cells Character. An explanation for any blank cells in the table.

custom_rows List-column of character vectors. Additional arbitrary pre-table information provided by the user.

source Character. The origin of the data, if relevant.

table List-column of data.frames (apart from the cover, which is a list) containing the statistical tables.

demo_df

A Demo 'data.frame' Object

Description

A pre-created data.frame ready to be converted to an al1ytables-class object with [as_a11ytable](#) and then an 'openxlsx' Workbook-class object with [generate_workbook](#).

Usage

```
demo_df
```

Format

A data.frame with 6 rows and 7 columns:

tab_title Character. Text to appear on each sheet's tab.

sheet_type Character. The content type for each sheet: 'cover', 'contents', 'notes', or 'tables'.

sheet_title Character. The title that will appear in cell A1 (top-left) of each sheet.

blank_cells Character. An explanation for any blank cells in the table.

custom_rows List-column of character vectors. Additional arbitrary pre-table information provided by the user.

source Character. The origin of the data, if relevant.

table List-column of data.frames (apart from the cover, which is a list) containing the statistical tables.

demo_workbook	<i>A Demo 'Workbook' Object</i>
---------------	---------------------------------

Description

A pre-created 'openxlsx' Workbook'-class object generated from an a11ytables-class object with [generate_workbook](#).

Usage

```
demo_workbook
```

Format

An 'openxlsx' Workbook-class object with 5 sheets.

generate_workbook	<i>Generate A Workbook Object From An 'a11ytable'</i>
-------------------	---

Description

Populate an 'openxlsx' Workbook-class object with content from an a11ytable-class object. In turn, the output can be passed to [saveWorkbook](#) from 'openxlsx'

Usage

```
generate_workbook(a11ytable)
```

Arguments

a11ytable	An a11ytable-class object created using create_a11ytable (or as_a11ytable), which contains the data and information needed to create a workbook.
-----------	---

Value

A Workbook-class object.

Examples

```
# Convert an a11ytable to a Workbook-class object
x <- generate_workbook(demo_a11ytable)
class(x)

# As above, using a compliant data.frame and the base pipe
y <- demo_df |>
  as_a11ytable() |>
  generate_workbook()
```

`mtcars_df`*Test Data: A Modified 'mtcars' Dataframe (Version 1)*

Description

Superseded. `mtcars_df` and `mtcars_df2` have been superseded in favour of `demo_df`.

A modified version of the `mtcars` dataset prepared into a `data.frame` structure ready for coercion to an `alltables`-class object with `as_allytable`. Uses a `dataframe` as input to the cover table; `mtcars_df` uses a list as input to the cover table.

Usage

```
mtcars_df
```

Format

A data frame with 5 rows and 6 columns:

tab_title Character. Text to appear on each sheet's tab.

sheet_type Character. The content type for each sheet: 'cover', 'contents', 'notes', or 'tables'.

sheet_title Character. The title that will appear in cell A1 (top-left) of each sheet.

blank_cells Character. An explanation for any blank cells in the table.

source Character. The origin of the data, if relevant.

table List-column of `data.frames` containing the statistical tables.

Details

Uses a `data.frame` as input to the cover table, whereas `mtcars_df2` uses a list as input to the cover table (implemented in version 0.2).

Note that this dataset is superseded by `demo_df` but is retained for backwards-compatibility with package versions prior to 0.3.

Source

`mtcars`

`mtcars_df2`*Test Data: A Modified 'mtcars' Dataframe (Version 2)*

Description

Superseded. `mtcars_df` and `mtcars_df2` have been superseded in favour of `demo_df`.

A modified version of the `mtcars` dataset prepared into a `data.frame` structure ready for coercion to an `alltables-class` object with `as_alltable`.

Usage

```
mtcars_df2
```

Format

A data frame with 5 rows and 6 columns:

tab_title Character. Text to appear on each sheet's tab.

sheet_type Character. The content type for each sheet: 'cover', 'contents', 'notes', or 'tables'.

sheet_title Character. The title that will appear in cell A1 (top-left) of each sheet.

blank_cells Character. An explanation for any blank cells in the table.

source Character. The origin of the data, if relevant.

table List-column of `data.frames` (apart from the cover, which is a list) containing the statistical tables.

Details

Uses a list as input to the cover table (implemented in version 0.2), whereas `mtcars_df` uses a `data.frame` as input to the cover table.

Note that this dataset is superseded by `demo_df` but is retained for backwards-compatibility with package versions starting 0.2.

Source

`mtcars`

summary.a11ytable	<i>Summarise An 'a11ytable' Object</i>
-------------------	--

Description

A concise result summary of an a11ytable-class object to see information about the sheet content. Shows a numbered list of sheets with each tab title, sheet type and table dimensions.

Usage

```
## S3 method for class 'a11ytable'
summary(object, ...)
```

Arguments

object	An a11ytable-class object for which to get a summary.
...	Other arguments to pass.

Examples

```
# Print a concise summary of the a11ytable-class object
summary(demo_a11ytable)

# Alternatively, look at the structure
str(demo_a11ytable, max.level = 2)
```

tbl_sum.a11ytable	<i>Provide A Succinct Summary Of An 'a11ytable' Object</i>
-------------------	--

Description

A brief text description of an a11ytable-class object.

Usage

```
## S3 method for class 'a11ytable'
tbl_sum(x, ...)
```

Arguments

x	An a11ytable-class object to summarise.
...	Other arguments to pass.

Value

Named character vector.

Examples

```
# Print with description  
print(demo_a11ytable)
```

```
# Print description only (package 'tibble' must be installed)  
tibble::tbl_sum(demo_a11ytable)
```

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