

A ladder to get on to the (Google) Slides

Isaac Gravestock (isaac.gravestock@gmail.com)

ladder is small package to make life easier for **userRs** working with Google Slides.

It allows us to directly insert and update tables within slides. It currently supports **matrix**, **data.frame**, and **flextable** objects.

Getting Started

The package can be directly installed from CRAN

```
library(ladder) # lazy (ladder)
```

After loading the package we need to authenticate with a google account. The following opens a web page to do the oauth dance.

```
ladder_auth()
```

The scope of this authorisation means we need to individually allow access to each presentation manually. Again we open a web page to browser your drive and select a presentation.

```
id <- choose_slides(pres_id)
```

Now we are ready add our table objects.

Simple Tables

Very simple tables can be inserted directly using **matrix** or **data.frame** objects. Matrices are inserted without any row or column names.

Data frames are inserted with bold column names. Apart from positioning, no further formatting is supported.

```
demo_m <- matrix(1:8, ncol = 2, nrow = 4)
add_to_slides(
  demo_m, id, on = 1, object_id = "table_1",
  from_top_left = cm(47, 50), overwrite = TRUE,
  size = cm(8, 10))
```

```
demo_df <- iris[c(1,44,67,103,125, 99), ]
add_to_slides(
  demo_df, id, on = 1, object_id = "table_2",
  from_top_left = cm(57, 50), overwrite = TRUE,
  size = cm(25, 10))
```

Complex Tables

For tables that need formatting, the package has support for inserting flextable object. These are convenient to process because they have a internal structure to the the slides API. All kinds of formatting is supported, including colours, font styles, alignment, merging cells, headers, footnotes, etc.

```
library(flextable)
demo_ft <- flextable(demo_df)
add_to_slides(demo_ft, id, on = 1, object_id = "table_3",
  from_top_left = cm(47, 67), overwrite = TRUE)

demo_ft2 <-
  demo_ft |>
  theme_vanilla() |>
  separate_header() |>
  bg(j = 5, bg = scales::col_factor(domain = iris$Species,
    palette = topo.colors(3))) |>
  bold(bold = TRUE, part = "header") |>
  add_footer_lines(values = "Important footnotes") |>
  color(i = NULL, j = 2, "red", part = "body") |>
  fontsize(size = 30, part = "all") |>
  autofit()

add_to_slides(demo_ft2, id, on = 1, object_id = "table_4",
  from_top_left = cm(59, 67), overwrite = TRUE)
```



A Note on Auth and API Access

For the purpose of this package I have set up a Google oauth app. In principle any user could replace this with their own oauth app. This is the same setup that other package use, eg **googledrive**, **googlesheets4** and is based on **gargle** functionality.

The ladder package only facilitates constructing the API calls to from your R session to the google servers. **No user data is collected or transferred to the ladder project.**

1	5
2	6
3	7
4	8

Table 1: demo_m

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
5.0	3.5	1.6	0.6	setosa
5.6	3.0	4.5	1.5	versicolor
7.1	3.0	5.9	2.1	virginica
6.7	3.3	5.7	2.1	virginica
5.1	2.5	3.0	1.1	versicolor

Table 2: demo_df

Sepal.L ength	Sepal. Width	Petal.Le ngth	Petal.W idth	Species
5.1	3.5	1.4	0.2	setosa
5.0	3.5	1.6	0.6	setosa
5.6	3.0	4.5	1.5	versicol or
7.1	3.0	5.9	2.1	virginica
6.7	3.3	5.7	2.1	virginica
5.1	2.5	3.0	1.1	versicol or

Table 3: demo_ft

Sepal		Petal		Species
Length	Width	Length	Width	
5.1	3.5	1.4	0.2	setosa
5.0	3.5	1.6	0.6	setosa
5.6	3.0	4.5	1.5	versicolor
7.1	3.0	5.9	2.1	virginica
6.7	3.3	5.7	2.1	virginica
5.1	2.5	3.0	1.1	versicolor

Important footnotes

Table 4: demo_ft2

Limitations

Most formatting features from flextable are supported. Notable limitations in Slides are that images are not supported in tables and changes to cell padding are not possible by API.

Future Work

I would like to continue development support HTML and **gt** objects in future. More broadly, I would like to add support for adding plots and images but this is not possible in the Slides API except via public URL. A workaround is possible using the AppsScript API however this requires more extensive permissions.

CRAN: cran.r-project.org/package=ladder
Package docs: www.r-ladder.com
Bug reports: github.com/igrave/ladder