Tables and Fonts

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Week 8, Class 1

Data viz in the wild

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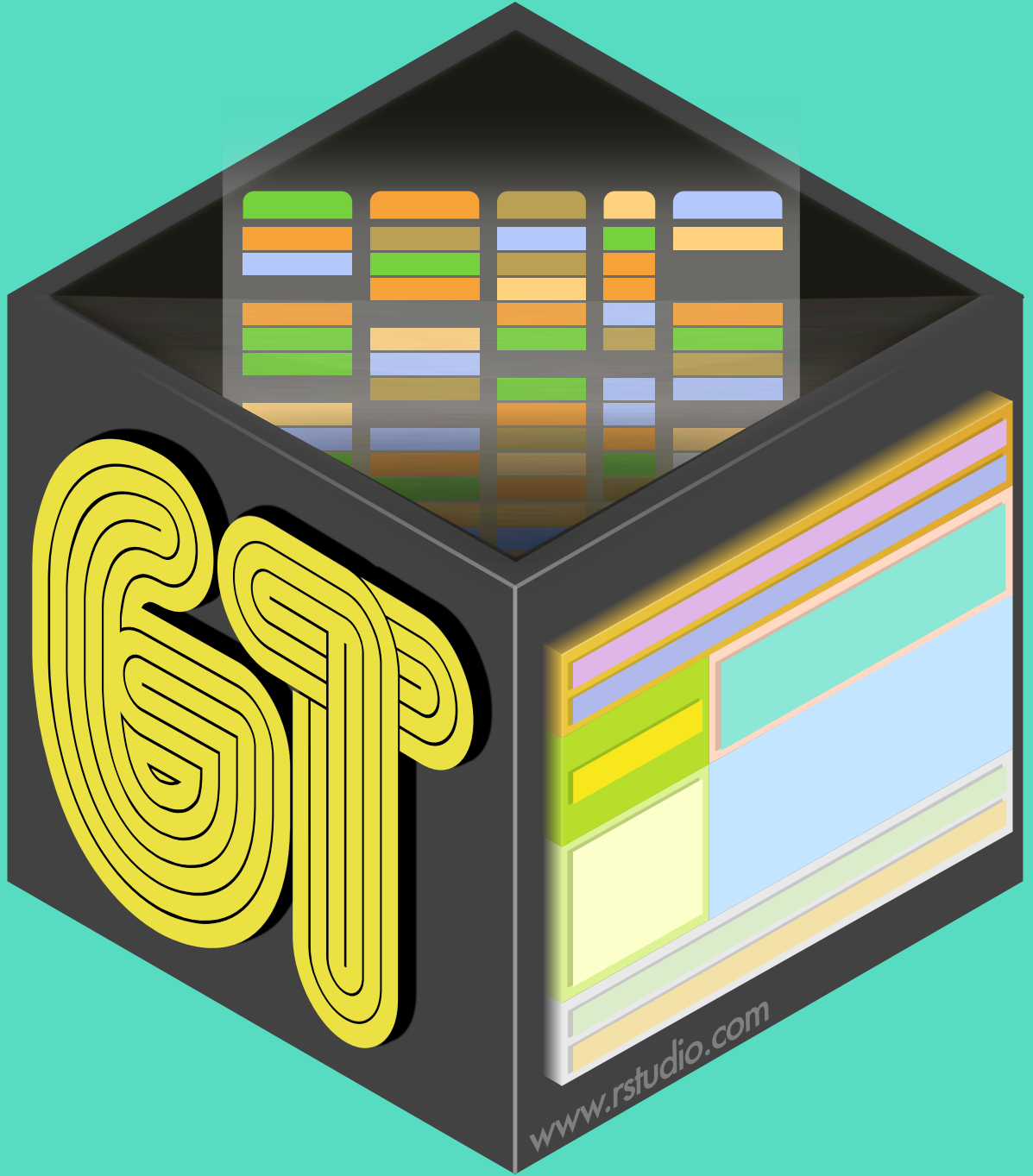
Anwesha & Ping on deck

Agenda

- Tables with `gt`
- Fonts with `showtext` and/or `extrafont`

Learning objectives

- Be comfortable with the basics of `gt`
  - create a table
  - format columns
  - create spanner heads
  - etc.
- Understand how to use additional fonts (if you so choose)


www.rstudio.com

Overview

- Pipe–oriented
- Beautiful tables easy
- Spanner heads/grouping used to be a total pain – not so anymore
- Renders to HTML/PDF without even thinking about it

Probably my favorite package for creating static tables, although **kableExtra** is great too.

My experience is that fewer people are generally familiar with **gt**, which is why I cover it here.

Install

```r
install.packages("gt")

# or

remotes::install_github("rstudio/gt")
```

The hard part

- Getting your data in the format you want a table in
- Utilize your `pivot_*` skills regularly

```
library(fivethirtyeight)
flying
```

```
## # A tibble: 1,040 x 27
##    respondent_id gender age   height   children_under_18 household_incom
##            <dbl> <chr>  <ord> <ord>    <lgl>             <ord>
##  1    3436139758 <NA>   <NA>   <NA>    NA                <NA>
##  2    3434278696 Male   30-44 "6'3\""  TRUE              <NA>
##  3    3434275578 Male   30-44 "5'8\""  FALSE             $100,000 - $149
##  4    3434268208 Male   30-44 "5'11\"" FALSE             $0 - $24,999
##  5    3434250245 Male   30-44 "5'7\""  FALSE             $50,000 - $99,9
##  6    3434245875 Male   30-44 "5'9\""  TRUE              $25,000 - $49,9
##  7    3434235351 Male   30-44 "6'2\""  TRUE              <NA>
##  8    3434218031 Male   30-44 "6'0\""  TRUE              $0 - $24,999
##  9    3434213681 <NA>   <NA>  "6'0\""  TRUE              <NA>
## 10    3434172894 Male   30-44 "5'6\""  FALSE             $0 - $24,999
## # … with 1,030 more rows, and 21 more variables: education <ord>, locati
## #   recline_frequency <ord>, recline_obligation <lgl>, recline_rude <ord
```

```r
flying %>%
  count(gender, age, recline_frequency)
```

```
## # A tibble: 53 x 4
##    gender age   recline_frequency       n
##    <chr>  <ord> <ord>               <int>
##  1 Female 18-29 Never                  24
##  2 Female 18-29 Once in a while        36
##  3 Female 18-29 About half the time    10
##  4 Female 18-29 Usually                13
##  5 Female 18-29 Always                 10
##  6 Female 18-29 <NA>                   19
##  7 Female 30-44 Never                  21
##  8 Female 30-44 Once in a while        25
##  9 Female 30-44 About half the time    22
## 10 Female 30-44 Usually                22
## # … with 43 more rows
```

```r
smry <- flying %>%
  count(gender, age, recline_frequency) %>%
  drop_na(age,recline_frequency) %>%
  pivot_wider(names_from = "age",
              values_from = "n")
smry
```

```
## # A tibble: 10 x 6
##    gender recline_frequency   `18-29` `30-44` `45-60` `> 60`
##    <chr>  <ord>                 <int>   <int>   <int>  <int>
##  1 Female Never                    24      21      19     23
##  2 Female Once in a while          36      25      30     36
##  3 Female About half the time      10      22      18     17
##  4 Female Usually                  13      22      26     28
##  5 Female Always                   10      21      29     12
##  6 Male   Never                    24      17      20     18
##  7 Male   Once in a while          19      39      40     29
##  8 Male   About half the time      11      11      16     11
##  9 Male   Usually                  14      30      15     27
## 10 Male   Always                   11      14      21     14
```

Turn into table

```r
library(gt)
smry %>%
  gt()
```

Disclaimer: these all look slightly different on the slides

gender	recline_frequency	18–29	30–44	45–60	> 60
Female	Never	24	21	19	23
Female	Once in a while	36	25	30	36
Female	About half the time	10	22	18	17
Female	Usually	13	22	26	28
Female	Always	10	21	29	12
Male	Never	24	17	20	18
Male	Once in a while	19	39	40	29
Male	About half the time	11	11	16	11
Male	Usually	14	30	15	27
Male	Always	11	14	21	14

Add gender as a grouping variable

```
smry %>%
  group_by(gender) %>%
  gt()
```

recline_frequency	18–29	30–44	45–60	> 60
Female				
Never	24	21	19	23
Once in a while	36	25	30	36
About half the time	10	22	18	17
Usually	13	22	26	28
Always	10	21	29	12
Male				
Never	24	17	20	18
Once in a while	19	39	40	29
About half the time	11	11	16	11
Usually	14	30	15	27
Always	11	14	21	14

This is an example of a table that looks better with the default CSS

Add a spanner head

```
smry %>%
  group_by(gender) %>%
  gt() %>%
  tab_spanner(
    label = "Age Range",
    columns = vars(`18-29`, `30-44`, `45-60`, `> 60`)
  )
```

recline_frequency	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24	21	19	23
Once in a while	36	25	30	36
About half the time	10	22	18	17
Usually	13	22	26	28
Always	10	21	29	12
Male				
Never	24	17	20	18
Once in a while	19	39	40	29
About half the time	11	11	16	11
Usually	14	30	15	27
Always	11	14	21	14

Change column names

```
smry %>%
  group_by(gender) %>%
  gt() %>%
  tab_spanner(
    label = "Age Range",
    columns = vars(`18-29`, `30-44`, `45-60`, `> 60`)
  ) %>%
  cols_label(recline_frequency = "Recline")
```

Recline	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24	21	19	23
Once in a while	36	25	30	36
About half the time	10	22	18	17
Usually	13	22	26	28
Always	10	21	29	12
Male				
Never	24	17	20	18
Once in a while	19	39	40	29
About half the time	11	11	16	11
Usually	14	30	15	27
Always	11	14	21	14

Align columns

```
smry %>%
  group_by(gender) %>%
  gt() %>%
  tab_spanner(
    label = "Age Range",
    columns = vars(`18-29`, `30-44`, `45-60`, `> 60`)
  ) %>%
  cols_label(recline_frequency = "Recline") %>%
  cols_align(align = "left",
             columns = vars(recline_frequency))
```

They are already left-aligned because of the CSS, but that's not typical

Recline	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24	21	19	23
Once in a while	36	25	30	36
About half the time	10	22	18	17
Usually	13	22	26	28
Always	10	21	29	12
Male				
Never	24	17	20	18
Once in a while	19	39	40	29
About half the time	11	11	16	11
Usually	14	30	15	27
Always	11	14	21	14

Add a title

```
smry %>%
  group_by(gender) %>%
  gt() %>%
  tab_spanner(
    label = "Age Range",
    columns = vars(`18-29`, `30-44`, `45-60`, `> 60`)
  ) %>%
  cols_label(recline_frequency = "Recline") %>%
  cols_align(align = "left",
             columns = vars(recline_frequency))
  tab_header(
    title = "Airline Passengers",
    subtitle = "Leg space is limited, what do you do?"
  )
```

Airline Passengers				
Leg space is limited, what do you do?				
Recline	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24	21	19	23
Once in a while	36	25	30	36
About half the time	10	22	18	17
Usually	13	22	26	28
Always	10	21	29	12
Male				
Never	24	17	20	18
Once in a while	19	39	40	29
About half the time	11	11	16	11
Usually	14	30	15	27
Always	11	14	21	14

Format columns

```
smry %>%
  mutate(across(c(`18-29`, `30-44`, `45-60`, `> 60`),
                ~.x/100)) %>%
  group_by(gender) %>%
  gt() %>%
  tab_spanner(
    label = "Age Range",
    columns = vars(`18-29`, `30-44`, `45-60`, `> 60`)
  ) %>%
  fmt_percent(
    vars(`18-29`, `30-44`, `45-60`, `> 60`),
    decimals = 0
  ) %>%
  cols_label(recline_frequency = "Recline") %>%
  cols_align(align = "left",
             columns = vars(recline_frequency)) %>%
  tab_header(
    title = "Airline Passengers",
    subtitle = "Leg space is limited, what do you do?"
  )
```

Airline Passengers				
Leg space is limited, what do you do?				
Recline	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24%	21%	19%	23%
Once in a while	36%	25%	30%	36%
About half the time	10%	22%	18%	17%
Usually	13%	22%	26%	28%
Always	10%	21%	29%	12%
Male				
Never	24%	17%	20%	18%
Once in a while	19%	39%	40%	29%
About half the time	11%	11%	16%	11%
Usually	14%	30%	15%	27%
Always	11%	14%	21%	14%

Add a source note

```
smry %>%
  mutate(across(c(`18-29`, `30-44`, `45-60`, `> 60`),
                ~.x/100)) %>%
  group_by(gender) %>%
  gt() %>%
  tab_spanner(
    label = "Age Range",
    columns = vars(`18-29`, `30-44`, `45-60`, `> 60`)
  ) %>%
  fmt_percent(
    vars(`18-29`, `30-44`, `45-60`, `> 60`),
    decimals = 0
  ) %>%
  cols_label(recline_frequency = "Recline") %>%
  cols_align(align = "left",
             columns = vars(recline_frequency)) %>%
  tab_header(
    title = "Airline Passengers",
    subtitle = "Leg space is limited, what do you do?"
  ) %>%
  tab_source_note(
    source_note = md("Data from [fivethirtyeight](https://fiveth
```

Airline Passengers				
Leg space is limited, what do you do?				
Recline	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24%	21%	19%	23%
Once in a while	36%	25%	30%	36%
About half the time	10%	22%	18%	17%
Usually	13%	22%	26%	28%
Always	10%	21%	29%	12%
Male				
Never	24%	17%	20%	18%
Once in a while	19%	39%	40%	29%
About half the time	11%	11%	16%	11%
Usually	14%	30%	15%	27%
Always	11%	14%	21%	14%
Data from fivethirtyeight				

Color cells

```
... %>%
  data_color(
    vars(`18-29`, `30-44`, `45-60`, `> 60`),
    colors = scales::col_numeric(
      palette = c("#FFFFFF", "#FF0000"),
      domain = NULL
    )
  ) %>%
  ...
```

Airline Passengers				
Leg space is limited, what do you do?				
Recline	Age Range			
	18–29	30–44	45–60	> 60
Female				
Never	24%	21%	19%	23%
Once in a while	36%	25%	30%	36%
About half the time	10%	22%	18%	17%
Usually	13%	22%	26%	28%
Always	10%	21%	29%	12%
Male				
Never	24%	17%	20%	18%
Once in a while	19%	39%	40%	29%
About half the time	11%	11%	16%	11%
Usually	14%	30%	15%	27%
Always	11%	14%	21%	14%
Data from fivethirtyeight				

What else?

- Lots more it can do, and lots more in development
- See the website

Thomas Mock does a lot of great work with tables and often has tutorials showing your how to go further (e.g., see here and here and here).

A few other table options

kableExtra

A few quick examples

Make sure to specify `results = "asis"` in your chunk options.

```
library(knitr)
library(kableExtra)
dt <- mtcars[1:5, 1:6]
kable(dt) %>%
  kable_styling("striped") %>%
  column_spec(5:7, bold = TRUE
```

	mpg	cyl	disp	hp	drat	wt
Mazda RX4	21.0	6	160	**110**	**3.90**	**2.620**
Mazda RX4 Wag	21.0	6	160	**110**	**3.90**	**2.875**
Datsun 710	22.8	4	108	**93**	**3.85**	**2.320**
Hornet 4 Drive	21.4	6	258	**110**	**3.08**	**3.215**
Hornet Sportabout	18.7	8	360	**175**	**3.15**	**3.440**

```r
kable(dt) %>%
  kable_styling("striped") %>%
  column_spec(5:7, bold = TRUE) %>%
  row_spec(c(2, 4),
           bold = TRUE,
           color = "#EFF3F7",
           background = "#71B0DE")
```

	mpg	cyl	disp	hp	drat	wt
Mazda RX4	21.0	6	160	**110**	**3.90**	**2.620**
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875
Datsun 710	22.8	4	108	**93**	**3.85**	**2.320**
Hornet 4 Drive	21.4	6	258	110	3.08	3.215
Hornet Sportabout	18.7	8	360	**175**	**3.15**	**3.440**

```r
kable(dt) %>%
  kable_styling("striped", full_width = FALSE) %>%
  pack_rows(
    "Group 1", 1, 3,
    label_row_css = "background-color: #666; color: #fff;"
    ) %>%
  pack_rows(
    "Group 2", 4, 5,
    label_row_css = "background-color: #666; color: #fff;")
```

	mpg	cyl	disp	hp	drat	wt
Group 1						
Mazda RX4	21.0	6	160	110	3.90	2.620
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875
Datsun 710	22.8	4	108	93	3.85	2.320
Group 2						
Hornet 4 Drive	21.4	6	258	110	3.08	3.215
Hornet Sportabout	18.7	8	360	175	3.15	3.440

KableExtra wrapup

Many other options, please see the documentation. Works well for PDF and HTML.

What about Microsoft Word?

flextable

flextable 0.5.8 | Overview | Selectors | Layout | Format visual properties | Format Content | Render as image | Examples | Function reference

flextable R package

build passing | BUILD PASSING | CRAN 0.5.8 | downloads 16K/month | repo status Active

The flextable package provides a framework for easily create tables for reporting and publications. Tables can be embedded within:

- R Markdown documents with support for HTML, Word and PowerPoint documents.
- Microsoft Word or PowerPoint documents.
- PDF documents with package `pagedown` (it's only HTML)

Tables can also be rendered as R plots or graphic files (png, pdf and jpeg).

Getting Started

An API is available to let R users create tables for reporting and control their formatting properties and their layout. A `flextable` object is a data.frame representation, it can be manipulated with functions that give control over:

Links

Download from CRAN at
https://cloud.r-project.org/package=flextable

Report a bug at
https://github.com/davidgohel/flextable/issues

Visit ARDATA website at
https://www.ardata.fr

License

GPL-3

Developers

David Gohel
Author, maintainer

All authors...

Many others

- huxtable
- formattable
- DT (my former favorite for shiny)
- rhandsontable

Particularly helpful for modeling

- stargazer
- pixiedust
- modelsummary

For descriptives

- gtsummary

reactable

My favorite for interactive tables

reactable 0.1.0.9000 Reference Examples Demos Articles

2019 Women's World Cup Predictions

Soccer Power Index (SPI) ratings and chances of advancing for every team

		Team Rating			Chance of Finishing Group Stage In ...			Knockout Stage Chances				
TEAM	GROUP	SPI	OFF.	DEF.	1ST PLACE	2ND PLACE	3RD PLACE	MAKE ROUND OF 16	MAKE QTR-FINALS	MAKE SEMIFINALS	MAKE FINAL	WIN WORLD CUP
USA 6 pts.	F	98.3	5.5	0.6	83%	17%	–	✓	78%	47%	35%	24%
France 6 pts.	A	96.3	4.3	0.5	>99%	<1%	<1%	✓	78%	42%	30%	19%
Germany 6 pts.	B	93.8	4.0	0.7	98%	2%	–	✓	89%	48%	28%	12%
Canada 6 pts.	E	93.5	3.7	0.6	39%	61%	–	✓	59%	36%	20%	9%
England 6 pts.	D	91.9	3.5	0.6	71%	29%	–	✓	69%	43%	16%	8%
Netherlands 6 pts.	E	92.7	3.9	0.7	61%	39%	–	✓	59%	37%	19%	8%
Australia 3 pts.	C	92.8	4.2	0.9	13%	54%	34%	>99%	54%	26%	10%	5%

Works great with **shiny** too

Penguins data

```r
library(palmerpenguins)
library(reactable)
reactable(penguins)
```

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female
Adelie	Torgersen					
Adelie	Torgersen	36.7	19.3	193	3450	female
Adelie	Torgersen	39.3	20.6	190	3650	male
Adelie	Torgersen	38.9	17.8	181	3625	female
Adelie	Torgersen	39.2	19.6	195	4675	male
Adelie	Torgersen	34.1	18.1	193	3475	
Adelie	Torgersen	42	20.2	190	4250	

1–10 of 344 rows

Previous 1 2 3 4 5 ... 35 Next

Rename columns

```
penguins %>%
  reactable(
    columns = list(
      bill_length_mm = colDef(name = "Bill Length (mm)"),
      bill_depth_mm = colDef(name = "Bill Depth (mm)")
    )
  )
```

species	island	Bill Length (mm)	Bill Depth (mm)	flipper_length_mm	body_mass_g	sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female
Adelie	Torgersen					
Adelie	Torgersen	36.7	19.3	193	3450	female
Adelie	Torgersen	39.3	20.6	190	3650	male
Adelie	Torgersen	38.9	17.8	181	3625	female
Adelie	Torgersen	39.2	19.6	195	4675	male
Adelie	Torgersen	34.1	18.1	193	3475	
Adelie	Torgersen	42	20.2	190	4250	

1—10 of 344 rows

Previous 1 2 3 4 5 ... 35 Next

Or use a function

```r
library(stringr)

penguins %>%
  reactable(
    defaultColDef = colDef(
      header = function(x) str_to_title(gsub("_", " ", x))
    )
  )
```

Species	Island	Bill Length Mm	Bill Depth Mm	Flipper Length Mm	Body Mass G	Sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female
Adelie	Torgersen					
Adelie	Torgersen	36.7	19.3	193	3450	female
Adelie	Torgersen	39.3	20.6	190	3650	male
Adelie	Torgersen	38.9	17.8	181	3625	female
Adelie	Torgersen	39.2	19.6	195	4675	male
Adelie	Torgersen	34.1	18.1	193	3475	
Adelie	Torgersen	42	20.2	190	4250	

1—10 of 344 rows

Previous 1 2 3 4 5 ... 35 Next

Add filter

```
reactable(penguins, filterable = TRUE)
```

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female
Adelie	Torgersen					
Adelie	Torgersen	36.7	19.3	193	3450	female
Adelie	Torgersen	39.3	20.6	190	3650	male
Adelie	Torgersen	38.9	17.8	181	3625	female
Adelie	Torgersen	39.2	19.6	195	4675	male
Adelie	Torgersen	34.1	18.1	193	3475	
Adelie	Torgersen	42	20.2	190	4250	

1–10 of 344 rows

Previous 1 2 3 4 5 ... 35 Next

Searchable

```
reactable(penguins, searchable = TRUE)
```

Search

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female
Adelie	Torgersen					
Adelie	Torgersen	36.7	19.3	193	3450	female
Adelie	Torgersen	39.3	20.6	190	3650	male
Adelie	Torgersen	38.9	17.8	181	3625	female
Adelie	Torgersen	39.2	19.6	195	4675	male
Adelie	Torgersen	34.1	18.1	193	3475	
Adelie	Torgersen	42	20.2	190	4250	

1–10 of 344 rows

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Pagination

```
reactable(penguins, defaultPageSize = 3)
```

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female

1–3 of 344 rows

Previous 1 2 3 4 5 ... 115 Next

Page jump

```
reactable(penguins,
          defaultPageSize = 3,
          paginationType = "jump")
```

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
Adelie	Torgersen	39.1	18.7	181	3750	male
Adelie	Torgersen	39.5	17.4	186	3800	female
Adelie	Torgersen	40.3	18	195	3250	female

1–3 of 344 rows Previous 1 of 115 Next

Grouping

```
reactable(penguins, groupBy = c("species", "island"))
```

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
▶ Adelie (3)						
▶ Gentoo (1)						
▶ Chinstrap (1)						

Aggregate

```
penguins %>%
  reactable(
    groupBy = c("species", "island"),
    columns = list(
      bill_length_mm = colDef(aggregate = "mean",
                              format = colFormat(digits = 2))
    )
  )
```

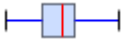
species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
▶ Adelie (3)		38.81				
▶ Gentoo (1)		47.50				
▶ Chinstrap (1)		48.83				

Sparklines

```r
library(sparkline)
table_data <- penguins %>%
  group_by(species) %>%
  summarize(bill_length = list(bill_length_mm)) %>%
  mutate(boxplot = NA,
         sparkline = NA)
table_data
```

```
## # A tibble: 3 x 4
##   species   bill_length boxplot sparkline
## * <fct>     <list>      <lgl>   <lgl>
## 1 Adelie    <dbl [152]> NA      NA
## 2 Chinstrap <dbl [68]>  NA      NA
## 3 Gentoo    <dbl [124]> NA      NA
```

```r
table_data %>%
  reactable(
    columns = list(
      bill_length = colDef(cell = function(value) {
        sparkline(value, type = "bar")
      }),
      boxplot = colDef(cell = function(value, index) {
        sparkline(table_data$bill_length[[index]], type = "box")
      }),
      sparkline = colDef(cell = function(value, index) {
        sparkline(table_data$bill_length[[index]])
      })
    )
  )
```

species	bill_length	boxplot	sparkline
Adelie			
Chinstrap			
Gentoo			

Lots more!

Idea of today is not to teach you everything, but to give you an idea of what's possible. Check out the documentation for more information.

Fonts

General advice

- Use different fonts to distinguish things
  - Specifically code
  - Consider different fonts for different heading levels, and/or to distinguish headers from the body
- Always choose a sans–serif font for code
- Explore and try – it makes a big impact on the overall look/feel (bigger than you may expect if you haven't played with fonts much before)
- Try not to get sucked into too deep of a rabbit hole

{ragg}

Brand new pacakge – just learning about it myself.

Alternative device to Cairo, png, etc.

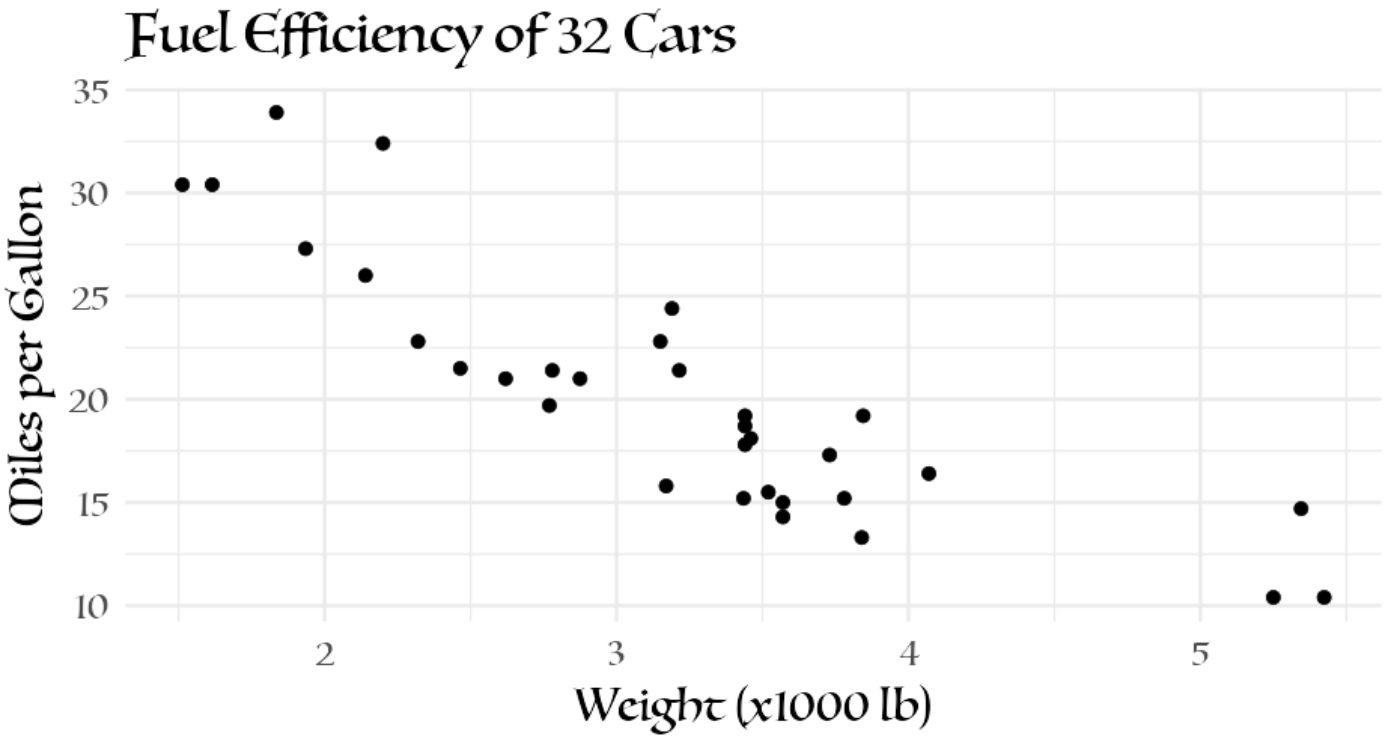
See the announcement here

After install, be sure to set *Global Options* > *General* > *Graphics* to *AGG*

Use with RMarkdown with `knitr::opts_chunk$set(dev = "ragg_png")`

Will automatically detect fonts you have installed on your computer

```r
ggplot(mtcars, aes(wt, mpg)) +
  geom_point() +
  labs(title = "Fuel Efficiency of 32 Cars",
       x = "Weight (x1000 lb)",
       y = "Miles per Gallon") +
  theme(text = element_text(family = "Luminari", size = 30))
```

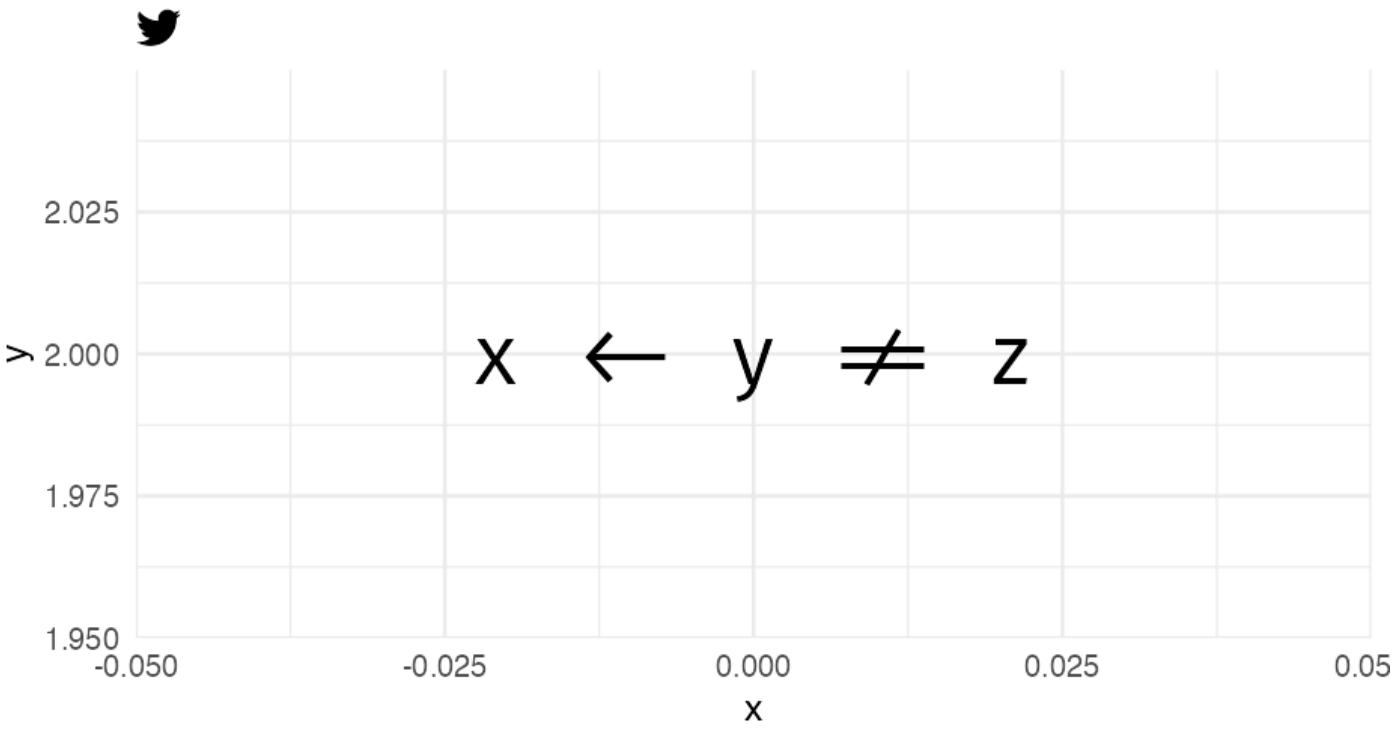


Support for lots of things!

Ligatures and font–awesome icons

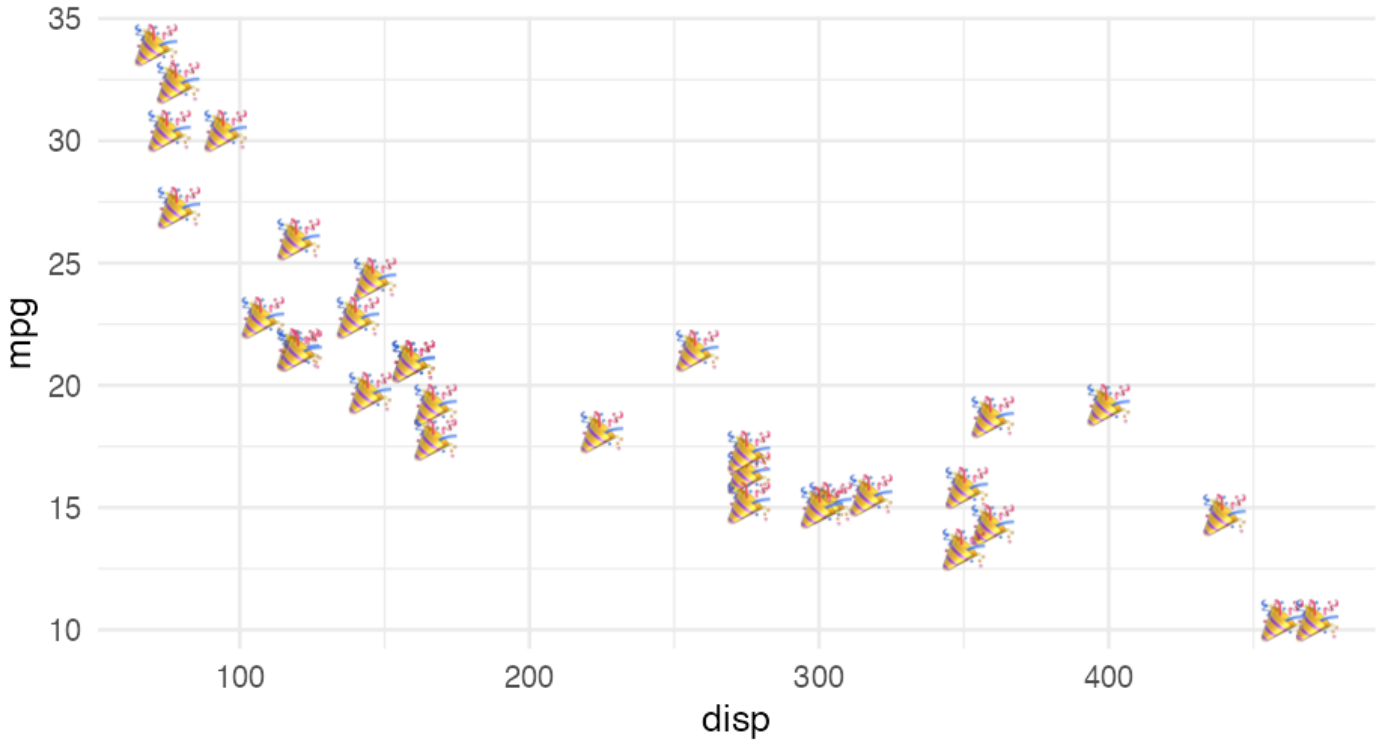
```r
library(ragg)

ggplot() +
  geom_text(
    aes(x = 0, y = 2, label = "x <- y != z"),
    family = "Fira Code"
  ) +
  labs(title = "twitter") +
  theme(plot.title = element_text(
      family = "Font Awesome 5 brands"
    )
  )
```


2.025
2.000
1.975
1.950
y
-0.050
-0.025
0.000
0.025
0.05
x
x ← y ≠ z

emojis

```
ggplot(mtcars, aes(disp, mpg)) +
  geom_text(label = "🎉",
            family = "Apple Color Emoji",
            size = 10)
```



Google fonts

https://fonts.google.com

- Open source, designed for the web
- Good place to explore fonts
- Can be incorporated via the `{showtext}` package!

{showtext} example

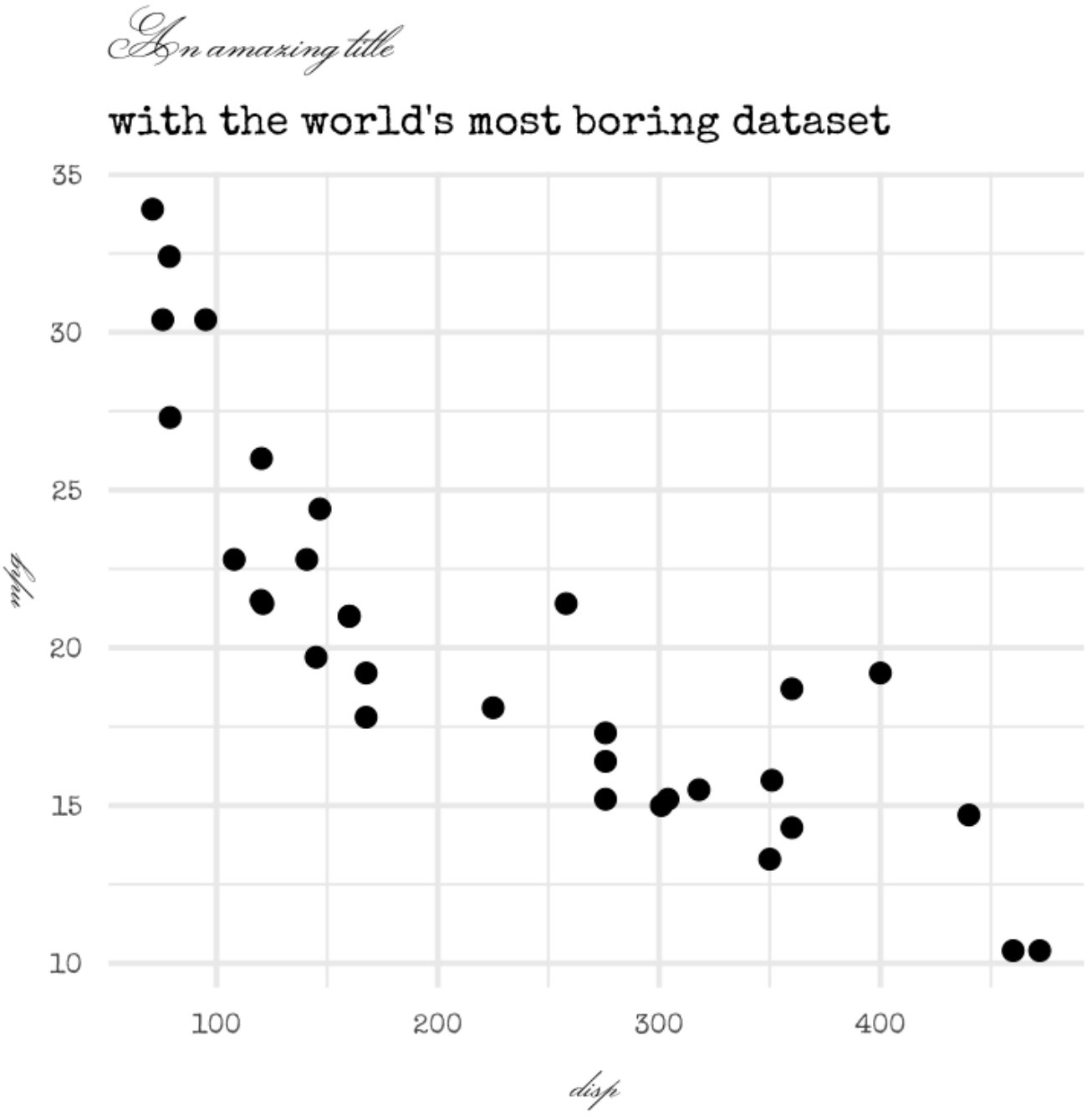
```r
devtools::install_github("yixuan/showtext")

library(showtext)

font_add_google('Monsieur La Doulaise', "mld")
font_add_google('Special Elite', "se")

showtext_auto()
quartz()

ggplot(mtcars, aes(disp, mpg)) +
  geom_point() +
  labs(title = "An amazing title",
       subtitle = "with the world's most boring dataset") +
  theme(plot.subtitle = element_text(size = 18, family = "se"),
        plot.title = element_text(size = 22, family = "mld"),
        axis.title = element_text(size = 18, family = "mld"),
        axis.text.x = element_text(size = 12, family = "se"),
        axis.text.y = element_text(size = 12, family = "se"))
```


An amazing title
with the world's most boring dataset
35
30
25
20
15
10
mpg
100
200
300
400
disp

Why fonts matter

A few examples of epic fails

h/t Will Chase

Megaflicks


i will always find you
I WILL ALWAYS FIND YOU
FONT MATTERS.


You'll Always
Be Mine
YOU'LL
ALWAYS
BE
MINE

Quick aside

Change the font of your R Markdown!

Create a CSS code chunk – write tiny bit of CSS – voila!

```
@import url('https://fonts.googleapis.com/css?family=Akronim&disp

body {
  font-family: 'Akronim', cursive;
}
```

Render!

Aside

I actually did this for these slides to make the tables a bit smaller!

```
24
25 ```{css echo = FALSE}
26 table {
27   font-size: 1rem;
28 }
29 ```
30
```

Resource for learning more

- I'm not an expert on fonts. I have mostly just picked what looks nice to me.

Best I've heard of is practical typography

Identify fonts

Use others work to help you – I found the font for these slides from a different theme that I liked.

Use google chrome's developer tools to help!

Next time

Create your own blog!