MarkyMark

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For this week watch and read the instructions for MarkMark 1-3

1. https://rladiessydney.org/courses/ryouwithme/04-markymark-1/
2. https://rladiessydney.org/courses/ryouwithme/04-markymark-2/
3. https://rladiessydney.org/courses/ryouwithme/04-markymark-3/

The step by step answers/instructions can be found in the Week4 folder, but I would suggest trying on your own first by watching the videos.

The output you should have at the end of class should be close to what I have below! Though I would encourage you to insert your own images and tweets. If you run into errors (which I did on my rough draft of this document) we can troubleshoot during class.

In order to knit this document as a pdf you will need to have `tinytex`, an R package, installed.

Headings

One hash for main headings

Two has for secondary headings

Three has for tertiary headings

I think you get the idea. . .

Bold and Italics

You can modify the display of text with asterisks

I want this to be bold

I want italics

I want to show *asterisks*

Bullet points with dashes

- Dash one
- Dash two
- Dash away all!

There must be a space after the dash to get bullets.

Quotes

Now get quotes with a >

> "Rmarkdown was a major motiviation of mine to switch all of my data workflow to R." - Aaron Caldwell

Links

All you need is brackets for the text and paratheses with the URL

find Rmd resources here

Images

Images are similar you just set a ! before the brackets and then the file path. But we can also use the `include_graphics` function in the knitr package. In my example code below we download an image from the internet, save it and then use the image as output.

```
download.file(url = "https://aaroncaldwell.us/authors/admin/avatar_hucb0390a6bbbcd1a4b638e7b667551cb3_7
          destfile = "image.png",
          mode = 'wb')
knitr::include_graphics(path = "image.png")
```

Embed a tweet

Here is a good articlet to read on ggplot2! You may run into errors if you want to include emojis AND are knitting a pdf.

So @emilynordmann said we could have celebratory drinks after this preprint was downloaded 1000 times. There's less than 50 to go, so if you've ever wanted a gentle intro to #rstats through #dataviz, I encourage you to download it https://t.co/L3Bl1kzpBQ

— Lisa DeBruine (@LisaDeBruine) June 26, 2021

What about Code?

R markdown is nice because you can incorporate your code and get the output you want in a tidy fashion.

Mac: alt-command-I Windows: alt-control-I

Remember, you can suppress messages and warnings in the header of the chunks.

```
library(tidyverse)
# I can set the options globally with the following code
# This way I don't have to do it with every chunk
# But I can override it if I want
knitr::opts_chunk$set(echo = TRUE,
                      message = FALSE,
                      warning = FALSE)
library(here)
library(janitor)
```

```
#Import beaches
beaches <- read_csv(here("data","sydneybeaches.csv"))
```

Now that we have data we can modify with our code from `basics.R`

```
cleanbeaches = beaches %>%
  clean_names() %>% # clean columns
  rename(beachbugs = enterococci_cfu_100ml)  %>%
  separate(date, c("day","month","year"),
           remove = FALSE) %>%
  #unite(council_site,council:site) %>%
  mutate(logbeachbugs = log(beachbugs),
         beachbugsdiff = beachbugs - lag(beachbugs),
         buggier = beachbugs > mean(beachbugs, na.rm=TRUE))
```

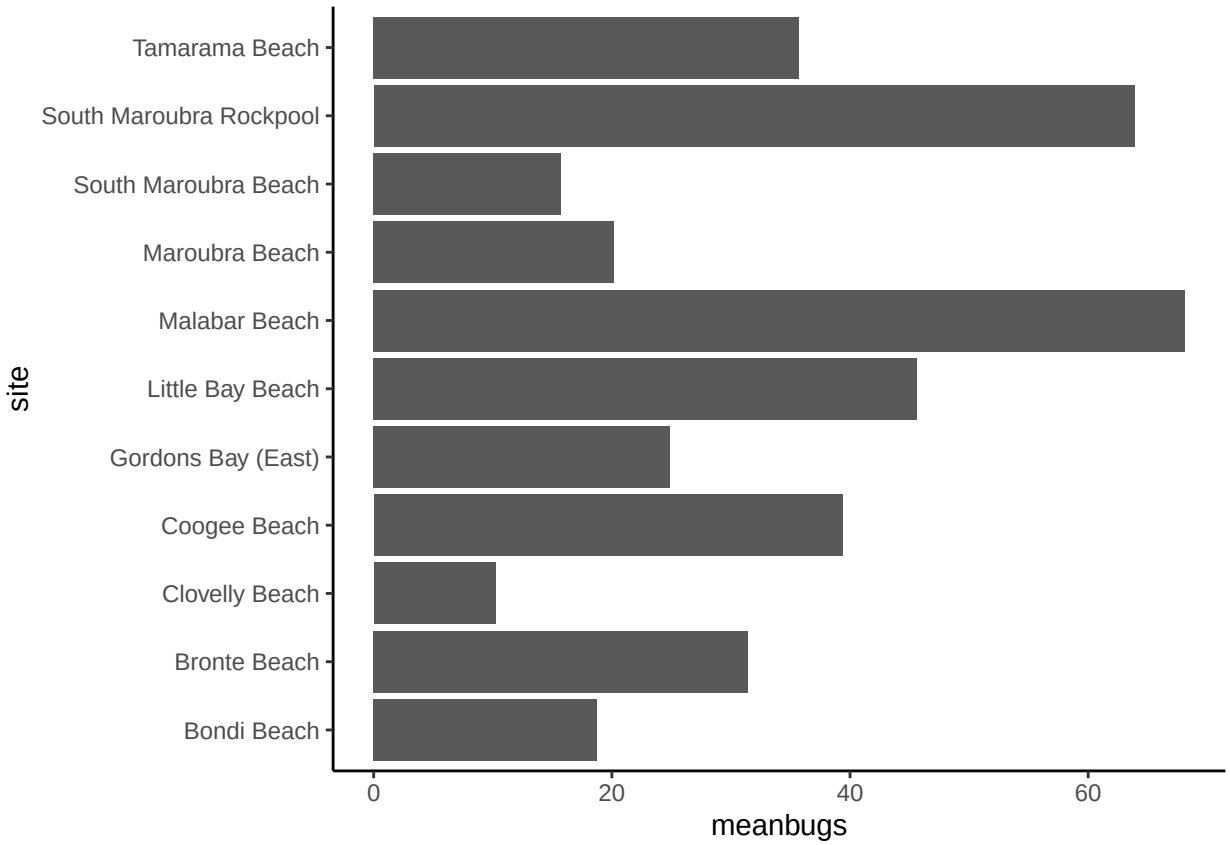
Then we can create neat data summaries and clean them up using `knitr`.

```
cleanbeaches %>%
  group_by(site) %>%
  summarize(meanbugs = mean(beachbugs,na.rm=TRUE)) %>%
  knitr::kable()
```

site	meanbugs
Bondi Beach	18.77545
Bronte Beach	31.42090
Clovelly Beach	10.21856
Coogee Beach	39.37758
Gordons Bay (East)	24.90062
Little Bay Beach	45.61012
Malabar Beach	68.11437
Maroubra Beach	20.17910
South Maroubra Beach	15.70536
South Maroubra Rockpool	63.89809
Tamarama Beach	35.72836

Or we can plot the results.

```
cleanbeaches %>%
  group_by(site) %>%
  summarize(meanbugs = mean(beachbugs,na.rm=TRUE)) %>%
  ggplot(aes(x=site,y=meanbugs)) +
  geom_col() +
  coord_flip() +
  theme_classic()
```



Output

There are a multiple of output types to choose from.

- Rstudio guide: https://rmarkdown.rstudio.com/lesson-9.html
- Yihui guide: https://bookdown.org/yihui/rmarkdown/output-formats.html

Sometimes they will require extra installations. For example, pdf documents are rendering using LaTex so you will need to have the `tinytex` R package installed.

The header of the document will need to be modified in order to change output styles. Though RStudio will allow you to use the knit button to select the output style.

```
download.file(url = "https://bookdown.org/yihui/rmarkdown/images/format-dropdown.png",
          destfile = "dropdown.png",
          mode = 'wb')
knitr::include_graphics(path = "dropdown.png")
```