

# Bush 631 - programming with R

## R Markdown instructions for reports/documents

The name of the author

January 2022

### R Markdown document

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

To include any content in your document, add text in the whitespace of your Markdown file.

To start writing in a new row, add **double-spaces** at the end of the row, and then hit “Enter” for a new line.

For **bold** text: add 2 stars before the bolded text and 2 after (no space between the stars and text).

For *italics* text: add 1 star before the text and 1 after (no space between the stars and text).

There are different types of captions/headlines. We use the hashtag sign (`##`). Text will be bigger with **less hashtags** (two is the largest caption).

If you need to include lists, there are two types. First, *unordered (no numbers) list* - indent the row text with the *tab* key, then add either star (\*), plus (+) or minus (-) for each item on the list. After the last item, add double-space and then use enter key.

- list item 1
- list item 2

Second, for *ordered list (with numbers)* - indent the row text with the *tab* key, then add a number. For each item, add the following number. After the last item, add double-space and then use enter key.

1. list item 1.
2. list item 2.

If you need to add space between your paragraphs, use the vertical space command: `\vspace{1em}`. The number in parenthesis represent the size of vertical space. Example: if I want space below this row, hit “Enter” and create a line break. Then, add the command `\vspace{1em}` **above** the next text section.

That creates a vertical space in your text.

For more short-cuts and commands for text, google “R markdown cheat sheet”.

## Adding R code

One of the main reasons for using R Markdown is the ability to combine text and data analysis.

First, how to add code for analysis (display code and results or not).

```
# Enter code for data analysis
head(mydata, n=4)

## # A tibble: 4 x 6
##   Year Wins Losses Pct Coaching Bowl
##   <dbl> <dbl> <dbl> <dbl> <chr> <chr>
## 1 2021 8 4 0.667 Jimbo Fisher (8-4) Gator Bowl-Did not play
## 2 2020 9 1 0.9 Jimbo Fisher (9-1) Orange Bowl-W
## 3 2019 8 5 0.615 Jimbo Fisher (8-5) Texas Bowl-W
## 4 2018 9 4 0.692 Jimbo Fisher (9-4) Gator Bowl-W

mean(mydata$Pct)

## [1] 0.6058151
```

Second, we also can add code for visuals (display code and results or not). For example, a plot showing Aggies winning percentage since joining the SEC:

```
# Code for plots
mydata %>%
  filter(Year > 2011) %>%
  ggplot(aes(x = factor(Year), y = Pct, group = 1)) +
  geom_line() + geom_bar(stat = "identity", fill = "lightblue") +
  geom_point() + theme_bw() + ggtitle("Aggies winning % (2012-2021)") +
  xlab("Year") + ylab("Winning %")
```

