Computational Statistics & Probability

Tutorial 1
Introduction to R Markdown

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For your assignments you are expected to turn in an *R Markdown file* `.Rmd` and a "knitted" `.pdf`, formatted as a human readable report. This introduction to R Markdown is designed to quickly get you up and running.

NOTE: *It is not acceptable to simply dump your* `.R` *code into an* `.Rmd` *file and knit it.*

R Markdown

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.

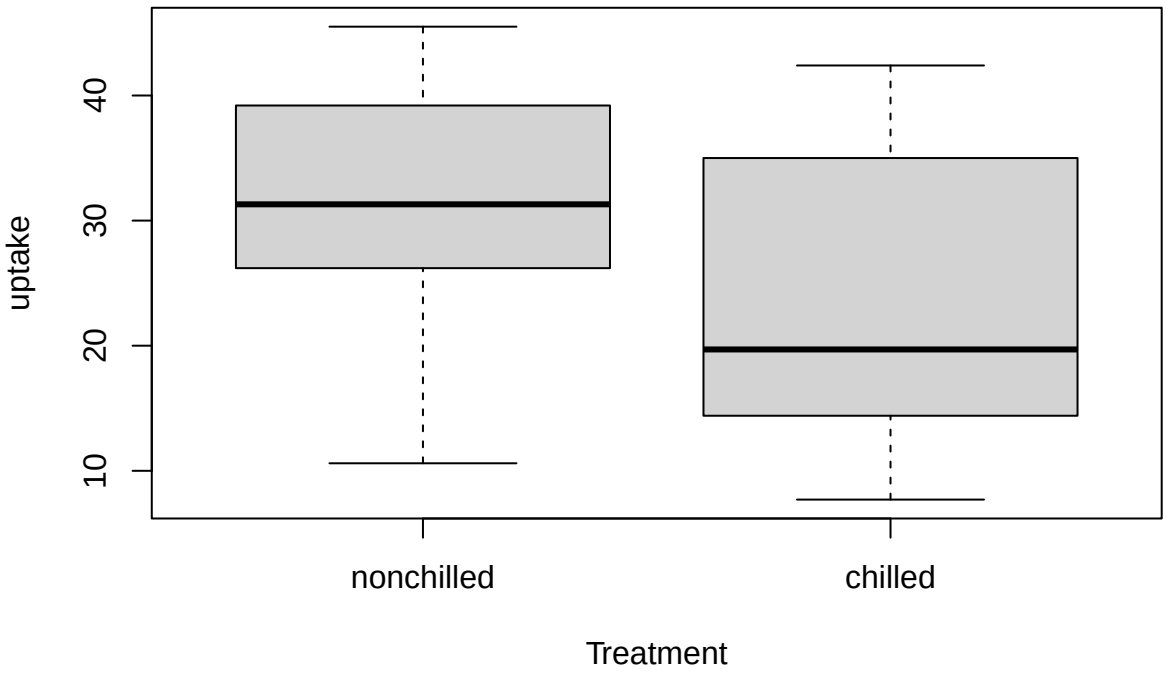
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
library(datasets)
data(CO2)
summary(CO2)
```

```
##      Plant             Type         Treatment       conc          uptake
##  Qn1    : 7   Quebec     :42   nonchilled:42   Min.   :  95   Min.   : 7.70
##  Qn2    : 7   Mississippi:42   chilled   :42   1st Qu.: 175   1st Qu.:17.90
##  Qn3    : 7                                    Median : 350   Median :28.30
##  Qc1    : 7                                    Mean   : 435   Mean   :27.21
##  Qc3    : 7                                    3rd Qu.: 675   3rd Qu.:37.12
##  Qc2    : 7                                    Max.   :1000   Max.   :45.50
##  (Other):42
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

Markdown

Text (like this) is written in (Markdown)[https://en.wikipedia.org/wiki/Markdown], which is a lightweight markup language that is widely used for creating formatted text with plain-text editor. R uses Pandoc's Markdown, which is a slight extension of ordinary Markdown.

Here is short guide to formatting text.

1st Level Header

2nd Level Header

3rd Level Header

Text Formatting

Italic or *italic*

bold or **bold**

`code`

superscript^2 and subscript$_2$

Lists

- Unordered 1ist item 1
- Unordered list item 2
  - Item 2a
  - Item 2b

1. Ordered list item 1
2. Item 2

Hyperlinks

Direct urls https://rmarkdown.rstudio.com/lesson-15.html and linked phrases: R Markdown Cheatsheets

LaTeX

LaTeX equations are supported, either inline $\int_b P(a|b,c)db$ or displayed:

$$\mathbb{E}_P[Y|X] := Y|X \sim \mathcal{N}(0, \Sigma)$$

Visit R Markdown at RStudio

Visit the R Markdown

AI Declaration

Please declare your collaborators in the class and how you used AI (if at all) to complete this assignment. If you used AI, include the prompts you used and explain what you learned from its responses that you didn't understand initially.