MSA8310 - RMarkdown Assignment

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## R Markdown Introduction

rmarkdown allows you to create documents directly from your R Code. Using rmarkdown you can document your analysis, share R code and results with colleagues and even publish a professional document for end users. A rmarkdown file can be converted to a number of different formats including HTML, PDF and Word.

rmarkdown created on xxxx by xxx

For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

R workw best when take advantage of multiple packages and R Markdown is no exception. knitr is a package worth exploring as it allows the R Markdown rmarkdown to be converted to different document types. rmarkdown takes advantage of this relationship and knowing more about Knitr will help make your rendered documents that much better.

## Data Review

### Babynames

The babynames data set is provided by the SSA and contains US baby names with at least 5 uses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| year | sex | name | n | prop |
| 1880 | F | Mary | 7065 | 0.0723836 |
| 1880 | F | Anna | 2604 | 0.0266790 |
| 1880 | F | Emma | 2003 | 0.0205215 |
| 1880 | F | Elizabeth | 1939 | 0.0198658 |
| 1880 | F | Minnie | 1746 | 0.0178884 |
| 1880 | F | Margaret | 1578 | 0.0161672 |

### Pharma

Data set we created for fun!

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PATIENT\_ID | MONTHID | COPAY | BUYDOWN | OOP | PRODUCT | DAYS\_SUPPLY | QUANTITY | PREV\_PRODUCT |
| 74292054 | 201910 | 92.22 | 37.93 | 54.29 | Morphine | 60 | 56 | Morphine |
| 09831832 | 201910 | 60.38 | 8.70 | 51.68 | Hydrocodone | 60 | 61 | Meperidine |
| 37785582 | 201910 | 27.99 | 38.91 | 0.00 | Tramadol | 30 | 33 | Meperidine |
| 71443642 | 201910 | 146.41 | 25.56 | 120.85 | Morphine | 60 | 63 | Meperidine |
| 52227761 | 201910 | 61.24 | 7.45 | 53.79 | Meperidine | 60 | 61 | Morphine |
| 05286637 | 201910 | 152.79 | 2.96 | 149.83 | Hydrocodone | 90 | 90 | Hydromorphone |

## R Markdown functions and fun!

As with any R package there are too many functions and interesting code to talk about them all. However, a few things that rmarkdown does caught our attention and those are the items we will be discussing.

1. Formatting
2. Chunks
3. External R Code

### Formatting

rmarkdown is at it’s core a markup language that allows methods for creating documents with headers, images, links etc.

Here are a few common formatting commands:

Who doesn’t like lists?! Also, comes in the Ordered variety. \* Un-ordered list item \*\*Italic\* \*\*\*Bold\*\*

* Un-ordered list item  
   \*\*Italic\*  
   \*\*\*Bold\*\*

Wrapping text in back ticks (`) will highlight the selection.

This iscodein text, how about r setup

This is code in text, how about r setup

Headers are important for any document and using the hashtag will create different headers

# Header 1 # Header 1

## Header 2 ## Header 2

Linking to to websites or other documents is a great way to keep users informed and engaged. R is the Best! <http://rmarkdown.rstudio.com> R is the Best! <http://rmarkdown.rstudio.com>

You can even insert mathematical equations to help illustrate your point:

$$\begin{array}{ccc} x\_{11} & x\_{12} & x\_{13}\\ x\_{21} & x\_{22} & x\_{23} \end{array}$$

This is code in text

This is code in text

# Header 1

Header 1

## Header 2

Header 2

### Chunks

Chunks are one of the mainstays of rmarkdown

### External R Code

rmarkdown can be picky when trying to cut and paste existing R code. If you have a complicated R script or even just want to insert a graph. You can use the ## @knitr <your variable> syntax you can create chunks in an external R script and call that chunk within the rmarkdown chunk header.

#This is a regular R script file that was called from the rmarkdown  
# using the ## @kniter syntax we can call this chunk into our rmarkdown file  
  
Rx\_Data <- read\_excel("C:/Users/shawn/OneDrive/Documents/Villanova/MSA 8310-Adv Bus Apps/R Module/Assignment/Rx Data.xlsx")  
  
kable(head(Rx\_Data))

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
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