Writeup Assignment 0

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2025-04-09

Please complete the following:

- Address any questions or code below.
- Compile the document into a PDF file.
- The PDF file must be multiple pages - if your file is a single page, try compiling to an HTML, opening in your browser, and printing the page to a PDF.
- Submit to Gradescope.
- **Paginate individual questions correctly, selecting which pages each question pertains to, or your assignment will not be graded and will require resubmission.**

HW0 Programming Assignment

For writeup assignments that build upon the programming assignments, you will need to execute some of the homework code within the RMarkdown file. **Copy all of your code from Assignment 0 into the block below.**

```r
#Paste your entire HW0 Programming assignment code here
## ## ## ## ## DO NOT MODIFY BELOW ## ## ## ## ##
sampleData1<-read.csv("SampleData.csv",header=FALSE)
sampleData2<-matrix(20:28,nrow=3)
## ## ## ## ## DO NOT MODIFY ABOVE ## ## ## ## ##

# PART 1
# Create a vector of length 5 with values 1, 2, 3, 4, 7
# Call it "myVector"
myVector <- c(1, 2, 3, 4, 7)
print("My Vector:")
```

```
## [1] "My Vector:"
```

```r
print(myVector)
```

```
## [1] 1 2 3 4 7
```

```r
# PART 2
# Create a string containing your name
# Call it "myString"
myString <- "John Doe"
print("My String:")
```

```
## [1] "My String:"
```

```r
print(myString)
```

```
## [1] "John Doe"
```

```r
# PART 3
# Read the "Rule #1 - Resolving Gradescope Submission Issues"
# post on EdStem and find the hidden value for HW0.
# Call it "HW0P3" (This should be a numeric value)
HW0P3 <- 724
print("HW0P3 Value:")
```

```
## [1] "HW0P3 Value:"
```

```r
print(HW0P3)
```

```
## [1] 724
```

```r
# PART 4
# The following code will not run correctly; fix it
# without changing the values or variable names.
thisVariable <- pi^2
thisVector <- c(thisVariable, thisVariable)
print("This Variable:")
```

```
## [1] "This Variable:"
```

```r
print(thisVariable)
```

```
## [1] 9.869604
```

```r
print("This Vector:")
```

```
## [1] "This Vector:"
```

```r
print(thisVector)
```

```
## [1] 9.869604 9.869604
```

```r
# PART 5
# Create a function that takes a single variable consisting
#  of a 3x3 matrix or dataframe (Called 'input' here), and
#  returns a vector of length 3 equal to the sum
#  of the rows of the matrix or data frame
# Call it "myFunction"
myFunction <- function(input){
  result <- rowSums(input)
  return(result)
}
print("My Function Definition:")
```

```
## [1] "My Function Definition:"
```

```r
print(myFunction)
```

```
## function (input)
## {
##     result <- rowSums(input)
##     return(result)
## }
```

```r
## ## ## ## ## DO NOT MODIFY BELOW ## ## ## ## ##
# If you have done part 5 correctly,
# running the code below should return TRUE
```

```
myResult1<-myFunction(sampleData1) # Saves results from your function
all(myResult1==c(6,15,24)) # Returns true if correct
```

```
## [1] TRUE
```

```
myResult2<-myFunction(sampleData2) # Saves results from your function
all(myResult2==c(69,72,75)) # Returns true if correct
```

```
## [1] TRUE
## ## ## ## ## ## DO NOT MODIFY ABOVE ## ## ## ## ##
```
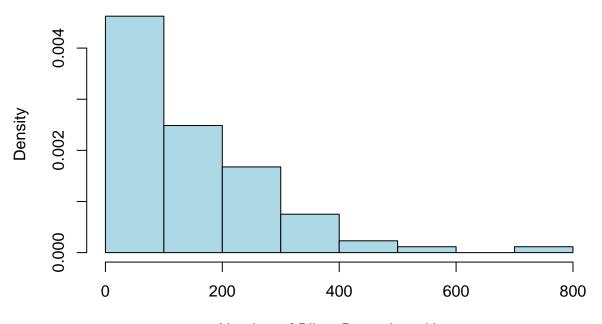
Including Graphics

When importing data for writeup assignments you are free to change code that loads data, such as changing the file name or folder address. The code below imports a dataset about the number of rental bikes in use each hour for a random set of hours over a two year span. The data is saved in the data frame `bikes`, under the variable name `bikes$rentals`. Using the function `hist(...)`, create a histogram of the bike rentals. Utilizing `?hist`, find the optional function arguments to do the following:

- Plot a histogram of the data
- Plot a density, rather than frequency histogram
- Change the main title of the plot to something more appropriate
- Change the x axis of the plot to something more informative

```
bikes<-read.csv("BikeRentals.csv")

# Create a histogram of bike rentals with the requested modifications
hist(bikes$rentals,
     prob = TRUE,
     main = "Distribution of Hourly Bike Rentals",
     xlab = "Number of Bikes Rented per Hour",
     col = "lightblue")
```

Distribution of Hourly Bike Rentals

Number of Bikes Rented per Hour