IE6200: Engineering Probability and Statistics

Assignment: Lab 1

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Lab Assignment Guidelines

1. Students need to complete the Lab assignment individually.
2. All the Lab assignments are required to be done in RStudio.
3. Provide necessary comments using '#' for better understanding of your script.
4. The lab report needs to include the following sections:
   - **Problem statement:** A brief about your understanding on the assignment questions (maximum 3 lines)
   - **Output:** What were your finding after creating the code and running it in R. This section may include:
     - Graphs / charts / plots
     - Final data frame for your result
     - Results obtained
   - **Conclusion:** What were the statistical inferences and observations from the results obtained.

   ✓Students are not required to include codes in reports.
5. If you take help from any external source, please mention that in reference.Violating academic integrity policies may include zero credit on the work.

Deliverables:

1. Please submit a **.zip* file including the following items
   i. R script (just 1 file including all your codes)
   ii. Lab Report: Report with a maximum length of 10 pages including all appendices, tables, and graphs.
2. All of the above mentioned files have to be labeled as: 'Lab # - IE 6200 – Sec # - <Student Name>'
3. Submit your Lab deliverables via Canvas.

Task 1

Using getwd() function in R show your current working directory.

Task 2

Create 2 variables given below and find the class of these 2 variables

```
x <- 1
y <- "1"
```

Task 3

Create a numerical vector "vect" with elements {9, 8, 7, 6, 4} of length 5. Using vector indexing show how you can display the third element in this vector in two different ways.

```
## [1] 9 8 7 6 4
```

Task 4

Create a 2x2 matrix having the following elements {1, 2, 3, 4} using the matrix() function in R and store it in a variable A. Use rbind() on matrix A to add a row with elements {5 , 6} to get a 3x2 matrix and store it in B. Futher, use matrix B and add a column having elements {7, 8, 9} to it using cbind().Display A, B and C.

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

```
##      [,1] [,2]
## [1,]    1    3
## [2,]    2    4
## [3,]    5    6
```

```
##      [,1] [,2] [,3]
## [1,]    1    3    7
## [2,]    2    4    8
## [3,]    5    6    9
```

Task 5

Use the **iris** dataframe that is available in R and display the first and last 5 rows of the dataframe.
Hint: Use head() and tail() functions