# WEEK1 ASSIGNEMT

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## 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.

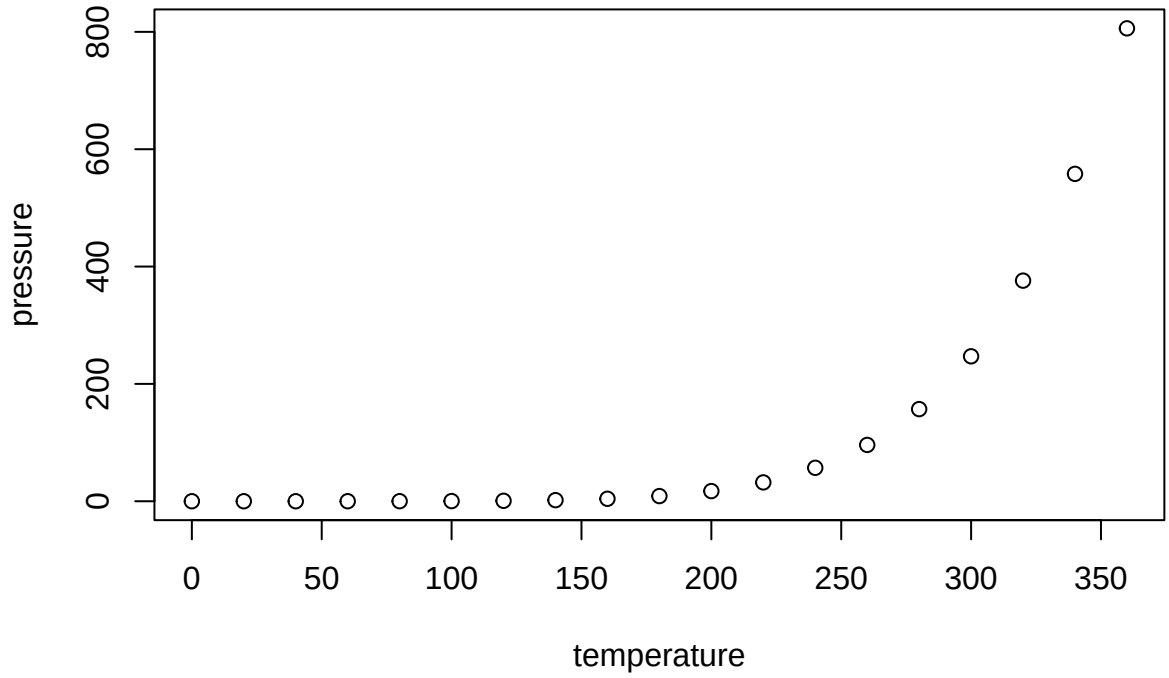
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed           dist
##  Min.   : 4.0   Min.   :  2.00
##  1st Qu.:12.0   1st Qu.: 26.00
##  Median :15.0   Median : 36.00
##  Mean   :15.4   Mean   : 42.98
##  3rd Qu.:19.0   3rd Qu.: 56.00
##  Max.   :25.0   Max.   :120.00
```

## 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.

```
info_string <- "Name: Shadan Khan, Unit Name: Statical Data Analysis, Task Name: T01.P1"

print(info_string)
```

```
## [1] "Name: Shadan Khan, Unit Name: Statical Data Analysis, Task Name: T01.P1"
```

```
data(iris)

head(iris)
```

```
##   Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 1          5.1         3.5          1.4         0.2  setosa
## 2          4.9         3.0          1.4         0.2  setosa
## 3          4.7         3.2          1.3         0.2  setosa
## 4          4.6         3.1          1.5         0.2  setosa
## 5          5.0         3.6          1.4         0.2  setosa
## 6          5.4         3.9          1.7         0.4  setosa
```

```
num_observations <- nrow(iris)
print(paste("Number of observations:", num_observations))
```

```
## [1] "Number of observations: 150"
```

```r
num_variables <- ncol(iris)
print(paste("Number of variables:", num_variables))
```

```
## [1] "Number of variables: 5"
```

```r
str(iris)
```

```
## 'data.frame':    150 obs. of  5 variables:
##  $ Sepal.Length: num  5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
##  $ Sepal.Width : num  3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
##  $ Petal.Length: num  1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
##  $ Petal.Width : num  0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
##  $ Species     : Factor w/ 3 levels "setosa","versicolor",..: 1 1 1 1 1 1 1 1 1 1 ...
```

```r
summarize_variables <- function(data) {
  for (variable in names(data)) {
    cat("Variable:", variable, "\n")
    if (is.factor(data[[variable]])) {
      cat("Categorical summary:\n")
      print(table(data[[variable]]))
    } else if (is.numeric(data[[variable]])) {
      cat("Mean:", mean(data[[variable]], na.rm = TRUE), "\n")
    }
    cat("\n")
  }
}

summarize_variables(iris)
```

```
## Variable: Sepal.Length
## Mean: 5.843333
##
## Variable: Sepal.Width
## Mean: 3.057333
##
## Variable: Petal.Length
## Mean: 3.758
##
## Variable: Petal.Width
## Mean: 1.199333
##
## Variable: Species
## Categorical summary:
##
##     setosa versicolor  virginica
##         50         50         50
```