Fml Assignment-1

Samiha

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1.Summary: This is an analysis on the in built Iris dataset. I have shown the descriptive statistics of the variables, transformation of a quantitative variable and scatter plot for both quantatitive and qualitative variables.

```
library(tinytex)
library(caret)
```

```
## Loading required package: ggplot2
```

```
## Loading required package: lattice
```

```
library(lattice)
library(ggplot2)
library(latex2exp)
```

2.The in built data set Iris is used here

```
ds<-iris
```

3.The descriptive statistics for a selection of quantitative and categorical variables

```
summary(ds)
```

```
##   Sepal.Length    Sepal.Width     Petal.Length    Petal.Width
##  Min.   :4.300   Min.   :2.000   Min.   :1.000   Min.   :0.100
##  1st Qu.:5.100   1st Qu.:2.800   1st Qu.:1.600   1st Qu.:0.300
##  Median :5.800   Median :3.000   Median :4.350   Median :1.300
##  Mean   :5.843   Mean   :3.057   Mean   :3.758   Mean   :1.199
##  3rd Qu.:6.400   3rd Qu.:3.300   3rd Qu.:5.100   3rd Qu.:1.800
##  Max.   :7.900   Max.   :4.400   Max.   :6.900   Max.   :2.500
##        Species
##  setosa    :50
##  versicolor:50
##  virginica :50
##
##
##
```

```
str(ds)
```

```
## '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 ...
```

```
dim(ds)
```

```
## [1] 150   5
```

4.The transformation of the quantitative variable sepal.length variable to logical

```
as.logical(ds$Sepal.Length)
```

```
##   [1] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
##  [16] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
##  [31] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
##  [46] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
##  [61] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
##  [76] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
##  [91] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [106] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [121] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [136] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
```

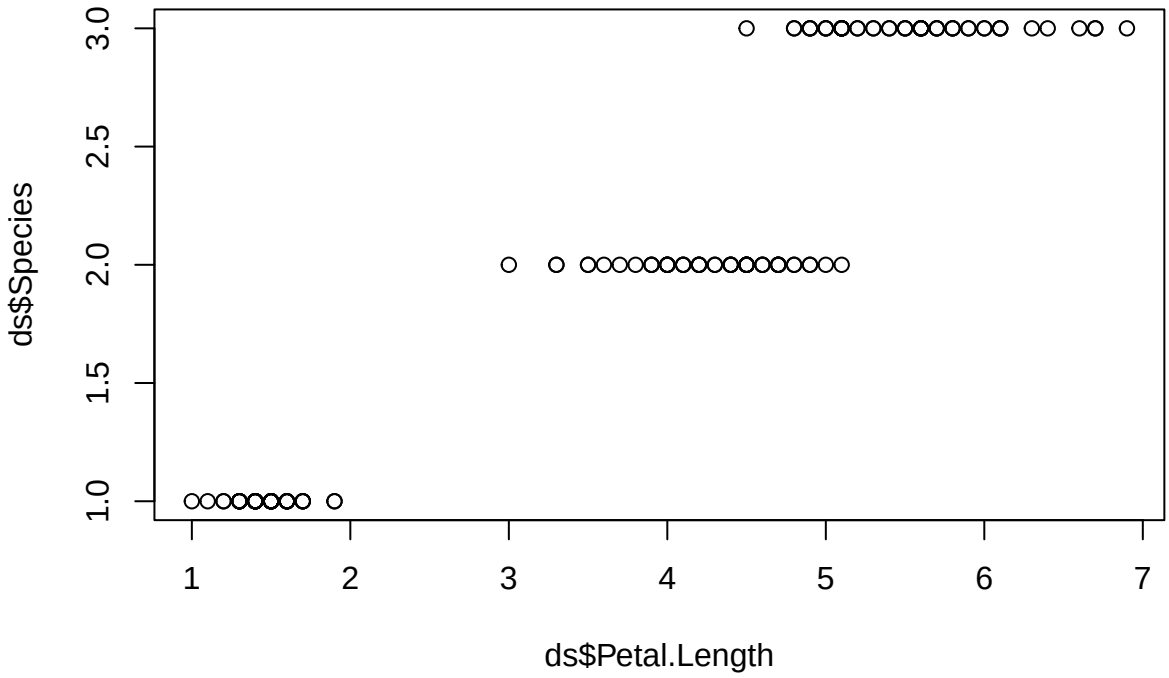
5.The table for the following variables- petal.length and species

```
Table<-table(ds$Petal.Length,ds$Species)
head(Table)
```

```
##
##       setosa versicolor virginica
##   1        1          0         0
##   1.1      1          0         0
##   1.2      2          0         0
##   1.3      7          0         0
##   1.4     13          0         0
##   1.5     13          0         0
```

The scatter plot for following variables- petal.length and species

```
plot(ds$Petal.Length,ds$Species)
```



The table is for the following variables- Sepal.Length and Sepal.Width

```
Box<-table(ds$Sepal.Length,ds$Sepal.Width)
head(Box)
```

```
##
##       2 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4
##   4.3 0   0   0   0   0   0   0   0   0 1   0   0   0   0   0   0   0   0   0 0
##   4.4 0   0   0   0   0   0   0   0   1 1   0   1   0   0   0   0   0   0   0 0
##   4.5 0   0   1   0   0   0   0   0   0 0   0   0   0   0   0   0   0   0   0 0
##   4.6 0   0   0   0   0   0   0   0   0 0   1   1   0   1   0   1   0   0   0 0
##   4.7 0   0   0   0   0   0   0   0   0 0   0   2   0   0   0   0   0   0   0 0
##   4.8 0   0   0   0   0   0   0   0   0 2   1   0   0   2   0   0   0   0   0 0
##
##       4.1 4.2 4.4
##   4.3   0   0   0
##   4.4   0   0   0
##   4.5   0   0   0
##   4.6   0   0   0
##   4.7   0   0   0
##   4.8   0   0   0
```

The scatter plot is for following variables- Sepal.Length,Sepal.Width

```r
plot(ds$Sepal.Length,ds$Sepal.Width)
```