

FML Assignment1

Meghana(811298610)

2023-09-09

#Imported Forestfires dataset from <https://archive.ics.uci.edu/dataset/162/forest+fires>

```
Value=read.csv("C:\\Users\\maggi\\Desktop\\FML Assignment1\\forestfires.csv")
#value
#The above snippet outputs the data in the dataset of Forestfires
```

#The below code gives the descriptive statistics of the dataset that has mean,median,mode and the deviation so on..

```
summary(Value)
```

```
##           X           Y           month           day
##  Min.      :1.000   Min.      :2.0   Length:517   Length:517
##  1st Qu.:3.000   1st Qu.:4.0   Class :character   Class :character
##  Median :4.000   Median :4.0   Mode  :character   Mode  :character
##  Mean    :4.669   Mean    :4.3
##  3rd Qu.:7.000   3rd Qu.:5.0
##  Max.    :9.000   Max.    :9.0
##           FPMC           DMC           DC           ISI
##  Min.      :18.70   Min.      : 1.1   Min.      : 7.9   Min.      : 0.000
##  1st Qu.:90.20   1st Qu.: 68.6   1st Qu.:437.7   1st Qu.: 6.500
##  Median :91.60   Median :108.3   Median :664.2   Median : 8.400
##  Mean    :90.64   Mean    :110.9   Mean    :547.9   Mean    : 9.022
##  3rd Qu.:92.90   3rd Qu.:142.4   3rd Qu.:713.9   3rd Qu.:10.800
##  Max.    :96.20   Max.    :291.3   Max.    :860.6   Max.    :56.100
##           temp           RH           wind           area
##  Min.      : 2.20   Min.      : 15.00   Min.      :0.400   Min.      : 0.00
##  1st Qu.:15.50   1st Qu.: 33.00   1st Qu.:2.700   1st Qu.: 0.00
##  Median :19.30   Median : 42.00   Median :4.000   Median : 0.52
##  Mean    :18.89   Mean    : 44.29   Mean    :4.018   Mean    : 12.85
##  3rd Qu.:22.80   3rd Qu.: 53.00   3rd Qu.:4.900   3rd Qu.: 6.57
##  Max.    :33.30   Max.    :100.00   Max.    :9.400   Max.    :1090.84
```

#The above gives whole summary of the table

```
a=mean(Value$wind)
print(a)
```

```
## [1] 4.017602
```

```
b=median(Value$day)
print(b)
```

```
## [1] "sun"
```

```
c=mode(Value$DC)
print(c)
```

```
## [1] "numeric"
```

#we have different transformations such as log,exponents,min-max and so on.In this I have transformed the variable into logarithmic form.

```
valueData <- log(Value$wind)
valueData
```

```
## [1] 1.9021075 -0.1053605 0.2623643 1.3862944 0.5877867 1.6863990
## [7] 1.1314021 0.7884574 1.6863990 1.3862944 1.9740810 1.3862944
## [13] 1.9021075 0.7884574 1.5040774 1.6863990 1.6863990 1.5892352
## [19] 1.3862944 1.5040774 0.9932518 0.9932518 1.5040774 1.7578579
## [25] 1.7578579 1.6863990 1.7578579 0.2623643 0.9932518 1.2809338
## [31] 1.2809338 2.0281482 0.5877867 1.2809338 0.9932518 1.5040774
## [37] 1.5040774 1.6863990 1.3862944 0.9932518 1.1314021 1.9021075
## [43] 1.6863990 0.9932518 1.5892352 1.3862944 1.2809338 1.1314021
## [49] 0.5877867 1.7578579 0.2623643 0.7884574 1.5892352 1.5892352
## [55] 1.2809338 0.7884574 1.5892352 0.9932518 1.6863990 -0.1053605
## [61] 1.7578579 1.8405496 1.5892352 0.9932518 1.1314021 1.5040774
## [67] 1.5040774 1.6863990 1.8405496 1.5040774 2.0281482 1.2809338
## [73] 1.8405496 1.5040774 0.2623643 1.1314021 1.1314021 1.1314021
## [79] 0.9932518 1.9021075 1.8405496 0.7884574 1.5040774 -0.1053605
## [85] 1.2809338 -0.1053605 0.7884574 0.7884574 1.2809338 1.5892352
## [91] 1.7578579 1.6863990 1.8405496 1.5892352 0.9932518 0.2623643
## [97] 0.5877867 1.6863990 1.5040774 1.6863990 1.6863990 1.6863990
## [103] 1.3862944 1.5040774 1.1314021 1.8405496 1.1314021 1.1314021
## [109] 1.1314021 1.6863990 1.7578579 1.5040774 1.2809338 0.9932518
## [115] 2.0281482 1.8405496 1.8405496 1.5892352 1.3862944 1.1314021
## [121] 0.7884574 1.6863990 1.6863990 1.1314021 1.6863990 1.6863990
## [127] 0.7884574 1.1314021 1.2809338 -0.1053605 0.9932518 1.1314021
## [133] 1.5892352 1.1314021 0.9932518 1.7578579 0.2623643 1.1314021
## [139] 0.9932518 0.7884574 0.5877867 1.5040774 2.1860513 1.6863990
## [145] 1.6863990 1.3862944 1.6863990 1.2809338 1.9021075 1.5040774
## [151] 1.6863990 0.7884574 0.5877867 1.5892352 0.9932518 0.2623643
## [157] 0.7884574 1.2809338 1.3862944 1.7578579 1.1314021 1.3862944
## [163] 2.1400662 0.5877867 0.7884574 1.5040774 -0.1053605 1.5040774
## [169] 2.2407097 0.7884574 0.5877867 1.3862944 1.6863990 0.7884574
## [175] 0.5877867 1.5892352 1.7578579 0.9932518 0.7884574 1.6863990
## [181] 1.9021075 1.3862944 0.7884574 1.5040774 1.5892352 1.1314021
## [187] 1.7578579 0.7884574 -0.1053605 1.3862944 1.3862944 0.9932518
## [193] 1.5040774 1.3862944 1.5040774 1.6863990 1.7578579 -0.1053605
## [199] 1.8405496 1.2809338 0.7884574 1.2809338 0.7884574 0.9932518
## [205] 1.3862944 0.5877867 1.9740810 0.7884574 1.8405496 1.5892352
## [211] 1.1314021 1.7578579 1.5892352 1.7578579 1.5892352 1.5892352
```

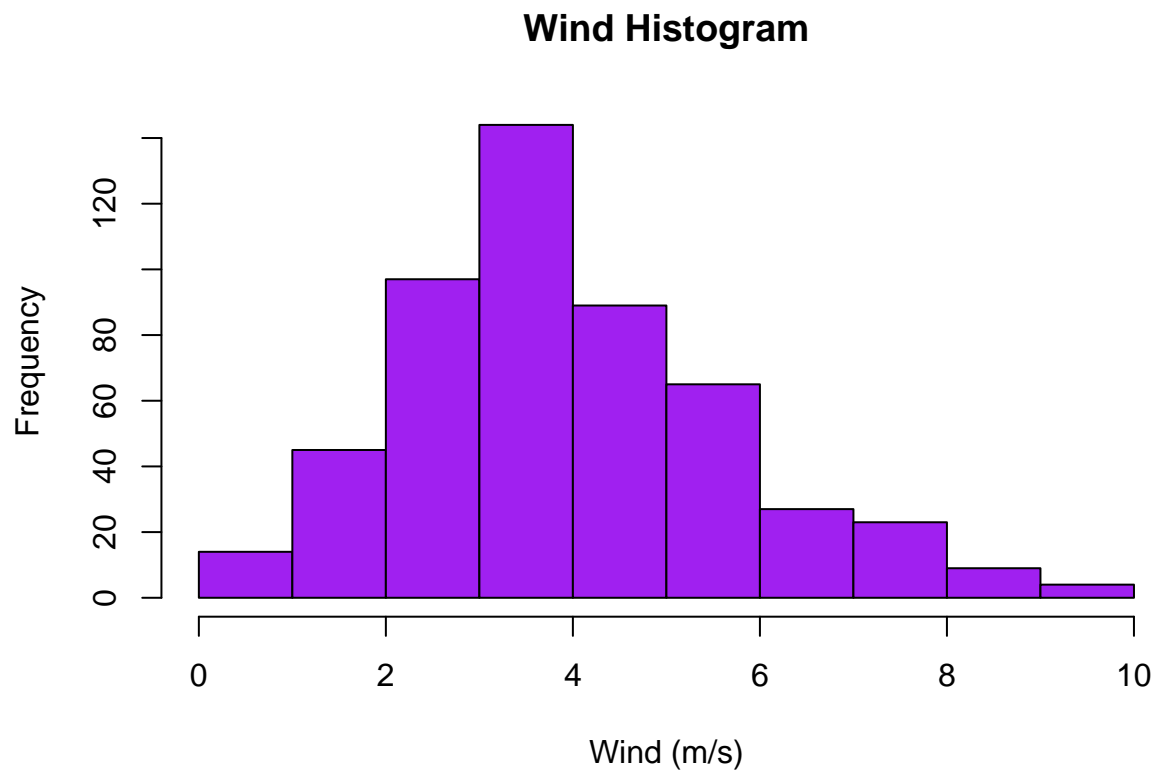
```

## [217] 0.2623643 1.8405496 0.2623643 1.1314021 1.1314021 1.2809338
## [223] 1.7578579 1.2809338 1.5040774 1.5892352 1.3862944 1.5040774
## [229] 1.1314021 1.3862944 1.5040774 1.1314021 0.9932518 1.1314021
## [235] 1.1314021 1.7578579 0.5877867 0.7884574 1.3862944 0.5877867
## [241] 0.9932518 1.1314021 1.3862944 2.0281482 2.0281482 1.8405496
## [247] 1.6863990 0.7884574 0.9932518 -0.9162907 1.1314021 1.1314021
## [253] 1.2809338 0.9932518 1.1314021 1.3862944 0.7884574 0.9932518
## [259] -0.1053605 0.5877867 1.3862944 2.0281482 1.1314021 1.2809338
## [265] 1.1314021 2.0281482 1.3862944 1.1314021 1.1314021 0.9932518
## [271] 1.1314021 1.5040774 1.3862944 2.1400662 2.0794415 1.5892352
## [277] 2.1400662 2.1400662 2.1400662 2.1400662 1.5892352 2.1400662
## [283] 1.3862944 1.1314021 2.0794415 1.8405496 2.0281482 0.9932518
## [289] 0.5877867 0.5877867 0.5877867 -0.1053605 0.2623643 1.6863990
## [295] 1.2809338 0.2623643 0.5877867 0.7884574 1.5892352 0.9932518
## [301] 1.5892352 1.6863990 1.5040774 1.5040774 1.5892352 0.7884574
## [307] 1.6863990 1.2809338 0.5877867 0.7884574 0.9932518 0.5877867
## [313] 1.8405496 1.5892352 0.5877867 0.9932518 1.7578579 1.5892352
## [319] 0.7884574 1.8405496 1.9740810 1.3862944 1.3862944 0.9932518
## [325] 0.5877867 1.1314021 1.1314021 0.7884574 0.5877867 1.3862944
## [331] 1.1314021 1.5040774 0.7884574 1.1314021 1.6863990 0.5877867
## [337] 0.7884574 0.7884574 0.7884574 0.5877867 0.7884574 0.7884574
## [343] 0.5877867 1.5040774 1.5892352 1.1314021 0.7884574 1.2809338
## [349] 1.5040774 1.2809338 1.2809338 1.8405496 1.2809338 0.9932518
## [355] 0.7884574 1.5892352 1.5892352 1.2809338 0.9932518 0.7884574
## [361] 0.7884574 1.3862944 1.1314021 0.7884574 0.9932518 1.1314021
## [367] 1.6863990 1.2809338 1.5892352 2.0281482 2.0281482 1.3862944
## [373] -0.1053605 0.9932518 1.3862944 1.5892352 0.7884574 0.7884574
## [379] 1.7578579 -0.1053605 1.9740810 0.9932518 0.5877867 0.9932518
## [385] 1.5040774 0.7884574 1.6863990 1.6863990 1.1314021 1.1314021
## [391] 1.8405496 0.9932518 1.3862944 2.0281482 0.5877867 0.5877867
## [397] 1.5892352 1.2809338 1.1314021 1.5040774 1.5040774 1.3862944
## [403] 1.3862944 1.2809338 0.7884574 0.7884574 1.5892352 1.3862944
## [409] 1.1314021 1.6863990 0.9932518 2.2407097 1.5040774 1.2809338
## [415] 1.3862944 1.5892352 1.1314021 1.7578579 1.6863990 1.3862944
## [421] 1.5040774 1.5040774 1.2809338 1.3862944 1.2809338 0.7884574
## [427] 0.7884574 0.7884574 1.7578579 1.3862944 1.2809338 1.3862944
## [433] 1.9021075 1.5892352 1.2809338 0.5877867 0.2623643 0.9932518
## [439] 1.3862944 0.7884574 1.2809338 0.5877867 1.1314021 2.0794415
## [445] 1.2809338 1.5040774 0.7884574 2.0794415 1.3862944 1.5892352
## [451] 1.6863990 1.5892352 1.3862944 1.1314021 1.1314021 0.9932518
## [457] 0.9932518 1.3862944 1.5892352 2.0794415 1.5892352 1.5892352
## [463] 2.0281482 1.8405496 1.6863990 -0.1053605 1.7578579 1.6863990
## [469] 1.2809338 2.2407097 1.7578579 1.3862944 1.3862944 1.1314021
## [475] 0.9932518 2.2407097 0.2623643 1.3862944 1.5040774 1.5892352
## [481] 1.5040774 1.5892352 1.7578579 1.6863990 1.3862944 1.2809338
## [487] 1.8405496 1.2809338 2.0281482 0.2623643 1.3862944 1.5040774
## [493] 0.7884574 1.5040774 1.5892352 0.7884574 1.1314021 0.7884574
## [499] 0.9932518 1.5892352 1.5892352 1.5892352 1.5892352 1.5892352
## [505] 1.5892352 0.5877867 2.1400662 1.2809338 1.2809338 2.0281482
## [511] 1.6863990 0.9932518 0.9932518 1.7578579 1.9021075 1.3862944
## [517] 1.5040774

```

#I have plotted the histogram graph of wind variable(Quantitative variable) and frequency.In this we will know how frequently the winds are moving at certain speeds.

```
#plot(Value) This gives the default graphs
hist(Value$wind, main = "Wind Histogram",
      xlab = "Wind (m/s)", col = "purple")
```



#The below graph is the scatter plot between temperature and RH variables. Here we can know the outliers, data distribution and many.

```
x=Value$temp
y=Value$RH
plot(x,y,xlim=c(1,10),main="Temp-RH Scatter Plot", xlab = "Temp", ylab= "RH")
```

Temp–RH Scatter Plot

