Assignment_1

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```
setwd("~/Desktop/R/64060/Assignment_1")
health_data <- read.table("500_Person_Gender_Height_Weight_Index.csv", TRUE, ",")
str(health_data)
```

```
## 'data.frame':    500 obs. of  4 variables:
##  $ Gender: chr  "Male" "Male" "Female" "Female" ...
##  $ Height: int  174 189 185 195 149 189 147 154 174 169 ...
##  $ Weight: int  96 87 110 104 61 104 92 111 90 103 ...
##  $ Index : int  4 2 4 3 3 3 5 5 3 4 ...
```

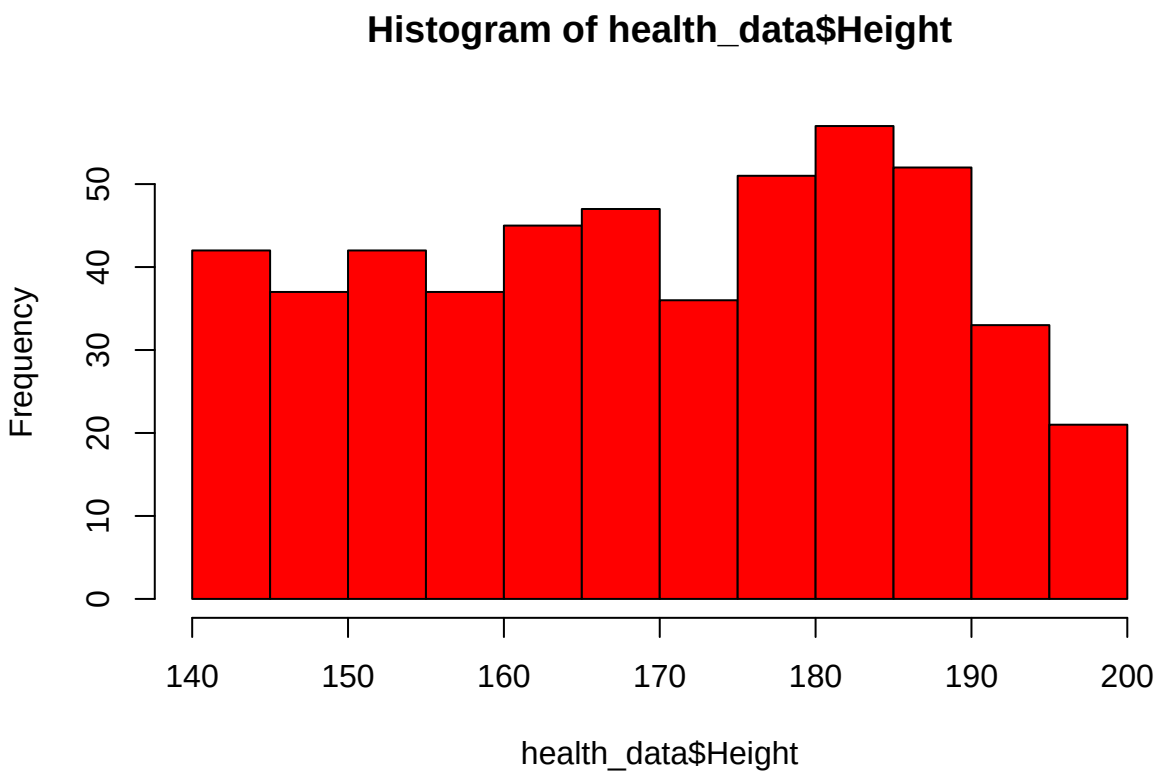
```
summary(health_data)
```

```
##     Gender              Height          Weight        Index
##  Length:500         Min.   :140.0   Min.   : 50   Min.   :0.000
##  Class :character   1st Qu.:156.0   1st Qu.: 80   1st Qu.:3.000
##  Mode  :character   Median :170.5   Median :106   Median :4.000
##                     Mean   :169.9   Mean   :106   Mean   :3.748
##                     3rd Qu.:184.0   3rd Qu.:136   3rd Qu.:5.000
##                     Max.   :199.0   Max.   :160   Max.   :5.000
```

```
head(health_data)
```

```
##   Gender Height Weight Index
## 1   Male    174     96     4
## 2   Male    189     87     2
## 3 Female    185    110     4
## 4 Female    195    104     3
## 5   Male    149     61     3
## 6   Male    189    104     3
```

```
hist(health_data$Height, col = 'red')
```



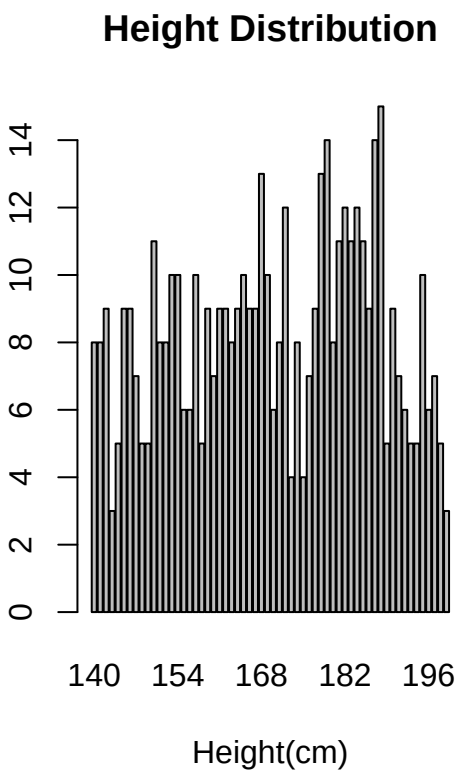
Comments: There are over 50 individuals between 180-190cm in height which is the most popular height group in this dataset

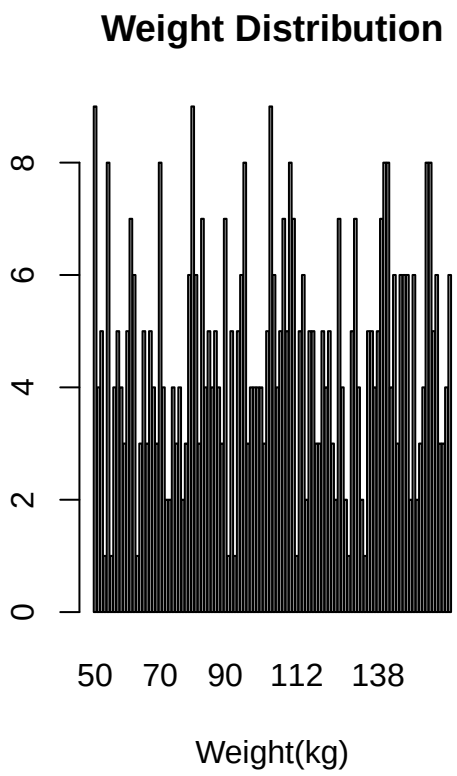
```
Height_M <- health_data$Height/100
BMI <- health_data$Weight/(Height_M^2)
head(BMI)
```

```
## [1] 31.70828 24.35542 32.14025 27.35043 27.47624 29.11453
```

Comments: convert the height to meters, calculate and print first 6 rows of BMI

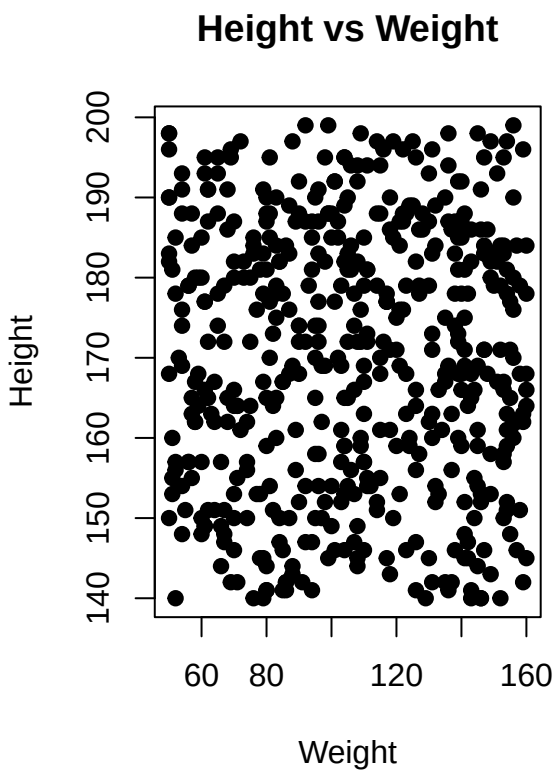
```
par(mfrow = c(1,2))
counts_h <- table(health_data$Height)
counts_w <- table(health_data$Weight)
barplot(counts_h, main = "Height Distribution", xlab= "Height(cm)")
barplot(counts_w, main = "Weight Distribution", xlab= "Weight(kg)")
```

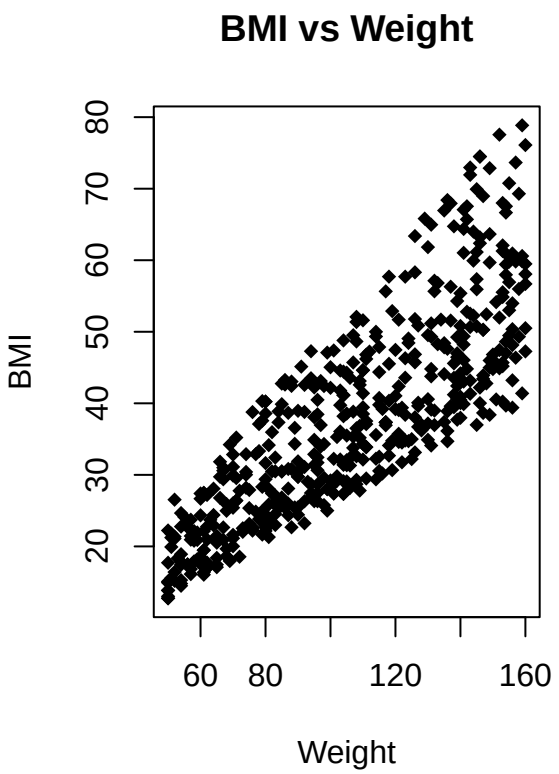




Comments: plots two bargraphs on the distribution of height and weight. We can see most height is more concentrated towards 180-190cm while weight is more spread out evenly between 50-150 kg.

```
par(mfrow = c(1,2))
plot(health_data$Weight, health_data$Height, main = "Height vs Weight",
     xlab = "Weight", ylab= "Height", pch=19)
plot(health_data$Weight, BMI, main = "BMI vs Weight",
     xlab = "Weight", ylab= "BMI",pch =18)
```





Comments: There is no obvious correlation between height and weight but BMI is positively correlated with weight. The greater the weight is, the higher BMI is.