244161004_HItesh

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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:

Including Plots

You can also embed plots, for example:

```r
#Ques1 .a
name <- "Hitesh Kumar"
print(name)
```

```
## [1] "Hitesh Kumar"
```

```r
cat("\n")
```

```r
roll <- 244161004
print(roll)
```

```
## [1] 244161004
```

```r
#b
if (roll %% 2 == 0){
  cat("\n")
  print("even")
}else {
  cat("\n")
  print("odd")
}
```

```
##
## [1] "even"
```

```r
#Q2.
x <- c(seq(11,56,by=2))
print(x)
```

```
##  [1] 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55
```

```r
print(mean(x))
```

```
## [1] 33
```

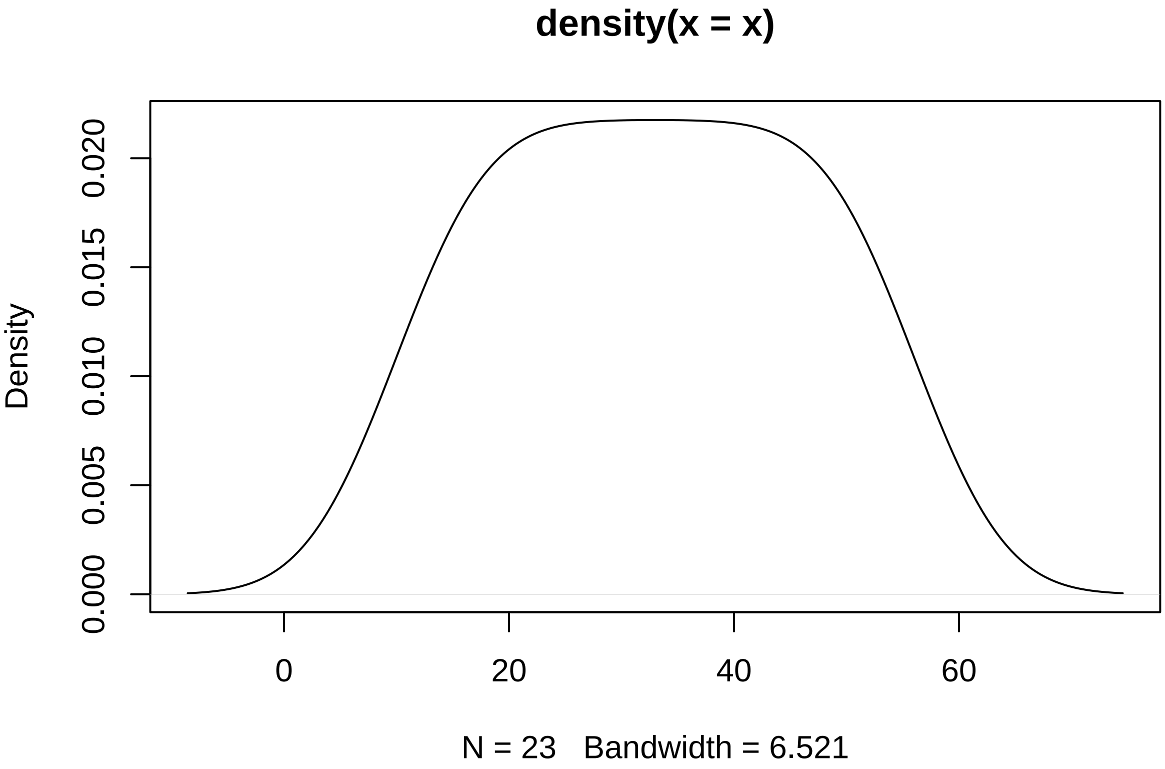
```r
print(var(x))
```

```
## [1] 184
```

```
print(sd(x))
```

```
## [1] 13.56466
```

```
#Q2 density plot
plot(density(x))
```



‘

```
#Q3.
x <- rnorm(12)
y <- rnorm(53)
z <- c(x,y)
print(z)
```

```
##  [1]  2.57141994  0.64376619 -0.66990608 -0.43144891  0.74889258  0.01691098
##  [7] -0.85592737  0.41963946 -0.36800322 -0.22778309  0.27128613  0.84337017
## [13] -0.73648616  0.42491622 -0.40804899 -1.80938084 -0.32259856  0.26087296
## [19]  0.89452485 -0.36367947  0.17842134 -0.14413953  3.38875569 -0.49518120
## [25]  0.10355865  0.12333363 -0.47435217 -1.27819810 -0.91767769  0.43302976
## [31]  0.93661695  0.90679602  1.25985334  1.10231264  0.56020904  0.46359928
## [37] -0.20851663  0.02978508 -0.78134262 -2.08842787 -0.01104994 -0.51472706
## [43]  0.45657638 -1.07528630  0.03565126  1.62905287  1.41950629  0.21893837
## [49] -0.11634963  0.93727360 -1.25285168 -0.01998599 -2.18015462 -0.72590641
## [55]  0.03809098 -0.66854068 -1.00043022 -0.07688789 -1.15790472 -0.99895593
## [61] -0.04234504  0.61323177  0.90134068 -1.19583009 -0.07532114
```

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

```
#Q4.
#a.
```

```r
height <- rnorm(100,mean = 150,sd=3.16)
print(height)
```

```
##   [1] 144.6908 149.2724 149.9188 149.2457 151.8708 156.3881 147.8295 143.5467
##   [9] 149.9832 143.0319 149.4604 149.8248 144.8694 144.8489 154.9685 145.5759
##  [17] 150.0148 144.8917 147.9913 145.9856 151.3929 147.1825 153.8543 145.4899
##  [25] 151.2241 148.8776 154.7112 147.8778 148.0136 151.3764 152.5832 149.4716
##  [33] 147.3008 149.1813 155.0383 147.9195 150.1482 157.8507 147.4118 154.6315
##  [41] 148.4884 150.3403 152.1957 152.0755 154.6868 151.0033 143.0508 147.9672
##  [49] 152.9566 154.1466 149.8337 153.4743 147.3031 153.1949 152.4978 156.9146
##  [57] 151.0394 152.8391 157.4055 144.3429 147.5707 152.6167 150.7672 146.6985
##  [65] 155.7753 151.0765 148.7646 152.7517 145.5669 154.6579 147.3904 151.1144
##  [73] 144.2871 148.3416 149.9400 151.6566 149.1662 152.4516 152.6536 150.0587
##  [81] 147.2811 150.8294 149.7164 151.0599 149.1220 149.1317 150.4252 152.9102
##  [89] 144.2746 151.7789 151.6490 148.6892 148.0743 150.8020 143.2633 151.2038
##  [97] 151.2198 149.7172 150.7884 150.5430
```

```r
#b.
weight <- rnorm(100,mean = 70,sd = 7.07)
print(weight)
```

```
##   [1] 79.74508 81.91356 66.11174 77.44463 82.90162 72.93296 65.48295 56.20910
##   [9] 76.44663 66.37348 72.13694 71.72086 78.06140 87.05376 62.79832 73.45535
##  [17] 70.90648 70.34594 61.33598 73.19275 60.58458 65.71802 73.37871 48.60950
##  [25] 65.17725 70.00199 62.52319 71.01393 61.15376 60.78958 77.74682 78.42167
##  [33] 67.62227 58.18861 70.40505 69.52665 72.80257 58.72688 80.23465 70.53009
##  [41] 68.17180 71.66955 55.47787 78.39390 61.94594 63.46473 75.71154 63.00456
##  [49] 57.50090 66.97087 68.05858 70.74436 79.38013 77.39521 54.99931 64.00145
##  [57] 77.20254 59.47333 52.69700 75.96186 73.96594 74.94684 87.54857 61.55480
##  [65] 68.42785 72.15217 69.85038 81.91337 74.99558 64.84869 67.72556 79.70360
##  [73] 71.84457 78.69723 61.14924 68.54147 70.70254 66.15163 74.19927 74.24700
##  [81] 73.59843 76.67192 70.07110 62.54807 80.87752 80.30513 75.98211 61.10042
##  [89] 80.22537 61.80646 62.93390 68.11947 68.64201 71.97940 77.25219 65.39527
##  [97] 66.24767 69.02394 69.56429 72.88356
```

```r
#c.
hwdf = data.frame(height,weight)
print(hwdf)
```

```
##       height   weight
## 1   144.6908 79.74508
## 2   149.2724 81.91356
## 3   149.9188 66.11174
## 4   149.2457 77.44463
## 5   151.8708 82.90162
## 6   156.3881 72.93296
## 7   147.8295 65.48295
## 8   143.5467 56.20910
## 9   149.9832 76.44663
## 10  143.0319 66.37348
## 11  149.4604 72.13694
## 12  149.8248 71.72086
## 13  144.8694 78.06140
## 14  144.8489 87.05376
## 15  154.9685 62.79832
## 16  145.5759 73.45535
## 17  150.0148 70.90648
## 18  144.8917 70.34594
## 19  147.9913 61.33598
## 20  145.9856 73.19275
## 21  151.3929 60.58458
## 22  147.1825 65.71802
## 23  153.8543 73.37871
## 24  145.4899 48.60950
## 25  151.2241 65.17725
## 26  148.8776 70.00199
## 27  154.7112 62.52319
## 28  147.8778 71.01393
## 29  148.0136 61.15376
## 30  151.3764 60.78958
## 31  152.5832 77.74682
## 32  149.4716 78.42167
## 33  147.3008 67.62227
## 34  149.1813 58.18861
## 35  155.0383 70.40505
## 36  147.9195 69.52665
## 37  150.1482 72.80257
## 38  157.8507 58.72688
## 39  147.4118 80.23465
## 40  154.6315 70.53009
## 41  148.4884 68.17180
## 42  150.3403 71.66955
## 43  152.1957 55.47787
## 44  152.0755 78.39390
## 45  154.6868 61.94594
## 46  151.0033 63.46473
## 47  143.0508 75.71154
## 48  147.9672 63.00456
## 49  152.9566 57.50090
## 50  154.1466 66.97087
## 51  149.8337 68.05858
## 52  153.4743 70.74436
## 53  147.3031 79.38013
## 54  153.1949 77.39521
## 55  152.4978 54.99931
## 56  156.9146 64.00145
## 57  151.0394 77.20254
## 58  152.8391 59.47333
## 59  157.4055 52.69700
## 60  144.3429 75.96186
## 61  147.5707 73.96594
## 62  152.6167 74.94684
## 63  150.7672 87.54857
## 64  146.6985 61.55480
## 65  155.7753 68.42785
## 66  151.0765 72.15217
## 67  148.7646 69.85038
## 68  152.7517 81.91337
## 69  145.5669 74.99558
## 70  154.6579 64.84869
## 71  147.3904 67.72556
## 72  151.1144 79.70360
## 73  144.2871 71.84457
## 74  148.3416 78.69723
## 75  149.9400 61.14924
## 76  151.6566 68.54147
## 77  149.1662 70.70254
## 78  152.4516 66.15163
## 79  152.6536 74.19927
## 80  150.0587 74.24700
## 81  147.2811 73.59843
## 82  150.8294 76.67192
## 83  149.7164 70.07110
## 84  151.0599 62.54807
## 85  149.1220 80.87752
## 86  149.1317 80.30513
## 87  150.4252 75.98211
## 88  152.9102 61.10042
## 89  144.2746 80.22537
## 90  151.7789 61.80646
## 91  151.6490 62.93390
## 92  148.6892 68.11947
## 93  148.0743 68.64201
## 94  150.8020 71.97940
## 95  143.2633 77.25219
## 96  151.2038 65.39527
## 97  151.2198 66.24767
## 98  149.7172 69.02394
## 99  150.7884 69.56429
## 100 150.5430 72.88356
```

```r
#d.
print(dim(hwdf))
```

```
## [1] 100   2
```

```r
#e.
print(str(hwdf))
```

```
## 'data.frame':    100 obs. of  2 variables:
##  $ height: num  145 149 150 149 152 ...
##  $ weight: num  79.7 81.9 66.1 77.4 82.9 ...
## NULL
```

```r
#f
#first 15 rows
head(hwdf,15)
```

```
##      height   weight
## 1  144.6908 79.74508
## 2  149.2724 81.91356
## 3  149.9188 66.11174
## 4  149.2457 77.44463
## 5  151.8708 82.90162
## 6  156.3881 72.93296
## 7  147.8295 65.48295
## 8  143.5467 56.20910
## 9  149.9832 76.44663
## 10 143.0319 66.37348
## 11 149.4604 72.13694
## 12 149.8248 71.72086
## 13 144.8694 78.06140
## 14 144.8489 87.05376
## 15 154.9685 62.79832
```

```r
#f last 13 rows
tail(hwdf,13)
```

```
##       height   weight
## 88  152.9102 61.10042
## 89  144.2746 80.22537
## 90  151.7789 61.80646
## 91  151.6490 62.93390
## 92  148.6892 68.11947
## 93  148.0743 68.64201
## 94  150.8020 71.97940
## 95  143.2633 77.25219
## 96  151.2038 65.39527
## 97  151.2198 66.24767
## 98  149.7172 69.02394
## 99  150.7884 69.56429
## 100 150.5430 72.88356
```

```r
#h
h1 <- subset(hwdf ,select = 1)
print(h1)
```

```
##       height
## 1   144.6908
## 2   149.2724
## 3   149.9188
## 4   149.2457
## 5   151.8708
## 6   156.3881
## 7   147.8295
## 8   143.5467
## 9   149.9832
## 10  143.0319
## 11  149.4604
## 12  149.8248
## 13  144.8694
## 14  144.8489
## 15  154.9685
## 16  145.5759
## 17  150.0148
## 18  144.8917
## 19  147.9913
## 20  145.9856
## 21  151.3929
## 22  147.1825
## 23  153.8543
## 24  145.4899
## 25  151.2241
## 26  148.8776
## 27  154.7112
## 28  147.8778
## 29  148.0136
## 30  151.3764
## 31  152.5832
## 32  149.4716
## 33  147.3008
## 34  149.1813
## 35  155.0383
## 36  147.9195
## 37  150.1482
## 38  157.8507
## 39  147.4118
## 40  154.6315
## 41  148.4884
## 42  150.3403
## 43  152.1957
## 44  152.0755
## 45  154.6868
## 46  151.0033
## 47  143.0508
## 48  147.9672
## 49  152.9566
## 50  154.1466
## 51  149.8337
## 52  153.4743
## 53  147.3031
## 54  153.1949
## 55  152.4978
## 56  156.9146
## 57  151.0394
## 58  152.8391
## 59  157.4055
## 60  144.3429
## 61  147.5707
## 62  152.6167
## 63  150.7672
## 64  146.6985
## 65  155.7753
## 66  151.0765
## 67  148.7646
## 68  152.7517
## 69  145.5669
## 70  154.6579
## 71  147.3904
## 72  151.1144
## 73  144.2871
## 74  148.3416
## 75  149.9400
## 76  151.6566
## 77  149.1662
## 78  152.4516
## 79  152.6536
## 80  150.0587
## 81  147.2811
## 82  150.8294
## 83  149.7164
## 84  151.0599
## 85  149.1220
## 86  149.1317
## 87  150.4252
## 88  152.9102
## 89  144.2746
## 90  151.7789
## 91  151.6490
## 92  148.6892
## 93  148.0743
## 94  150.8020
## 95  143.2633
## 96  151.2038
## 97  151.2198
## 98  149.7172
## 99  150.7884
## 100 150.5430
```

```
#i
h170 <- hwdf[hwdf$height>170,]
print(h170)
```

```
## [1] height weight
## <0 rows> (or 0-length row.names)
```

```
#j
w45 <- hwdf[hwdf$weight<45,]
print(w45)
```

```
## [1] height weight
## <0 rows> (or 0-length row.names)
```

```
#k
hw1 <- hwdf[hwdf$height>160,hwdf$weight>90]
head(hw1,10)
```

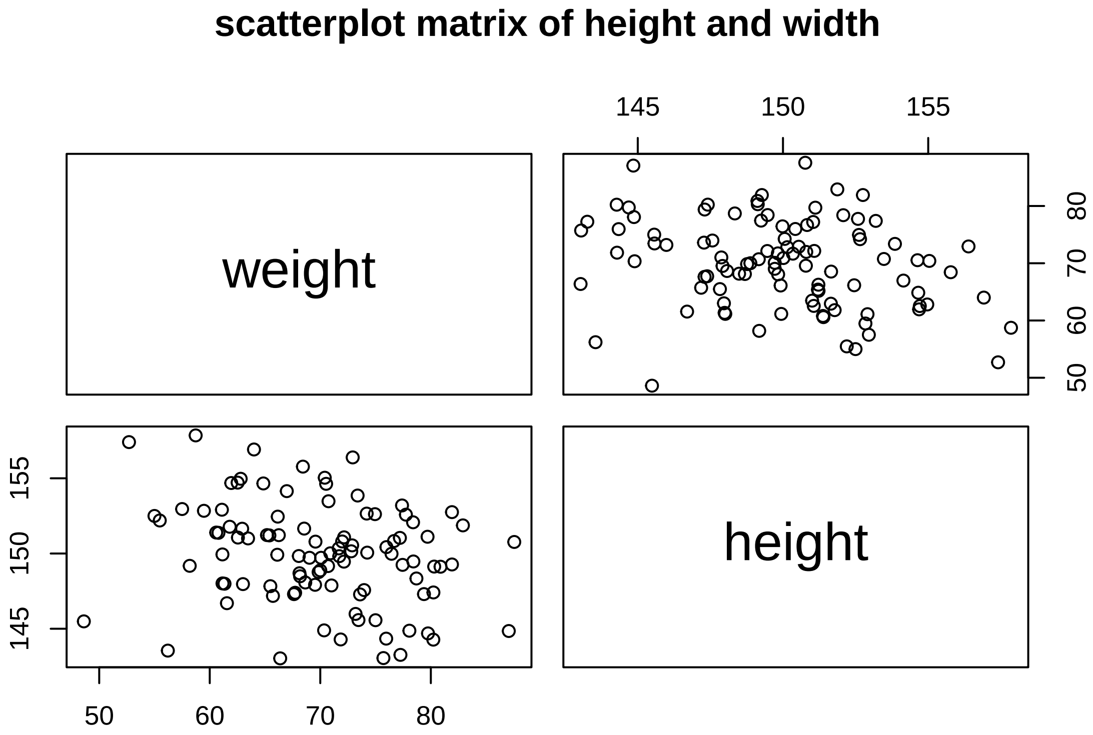
```
## data frame with 0 columns and 0 rows
```

```
#l
hw2 <- hwdf[hwdf$height<150 & hwdf$weight>80,]
print(hw2)
```

```
##      height   weight
## 2  149.2724 81.91356
## 14 144.8489 87.05376
## 39 147.4118 80.23465
## 85 149.1220 80.87752
## 86 149.1317 80.30513
## 89 144.2746 80.22537
```

```
#m
#scatter plot
```

```
pairs(~weight+height,data=hwdf,main="scatterplot matrix of height and width")
```



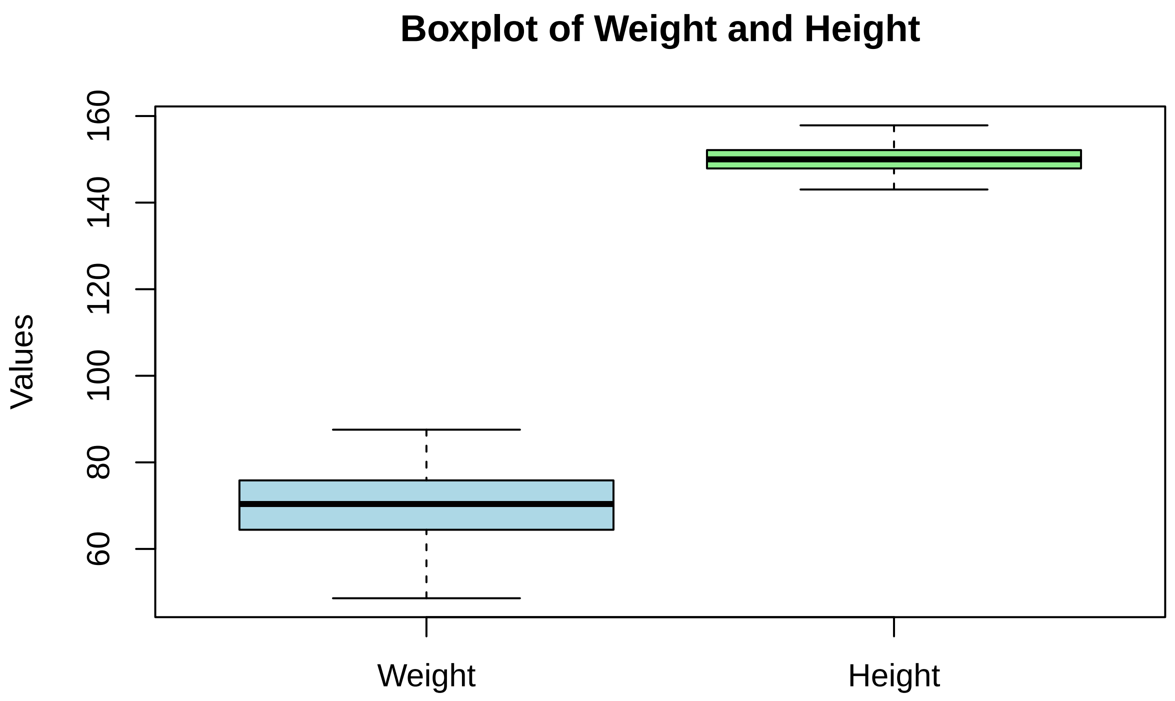
```
#m
print("Height column ranges from 145 to 155 ,below and above it are outliers")
```

```
## [1] "Height column ranges from 145 to 155 ,below and above it are outliers"
```

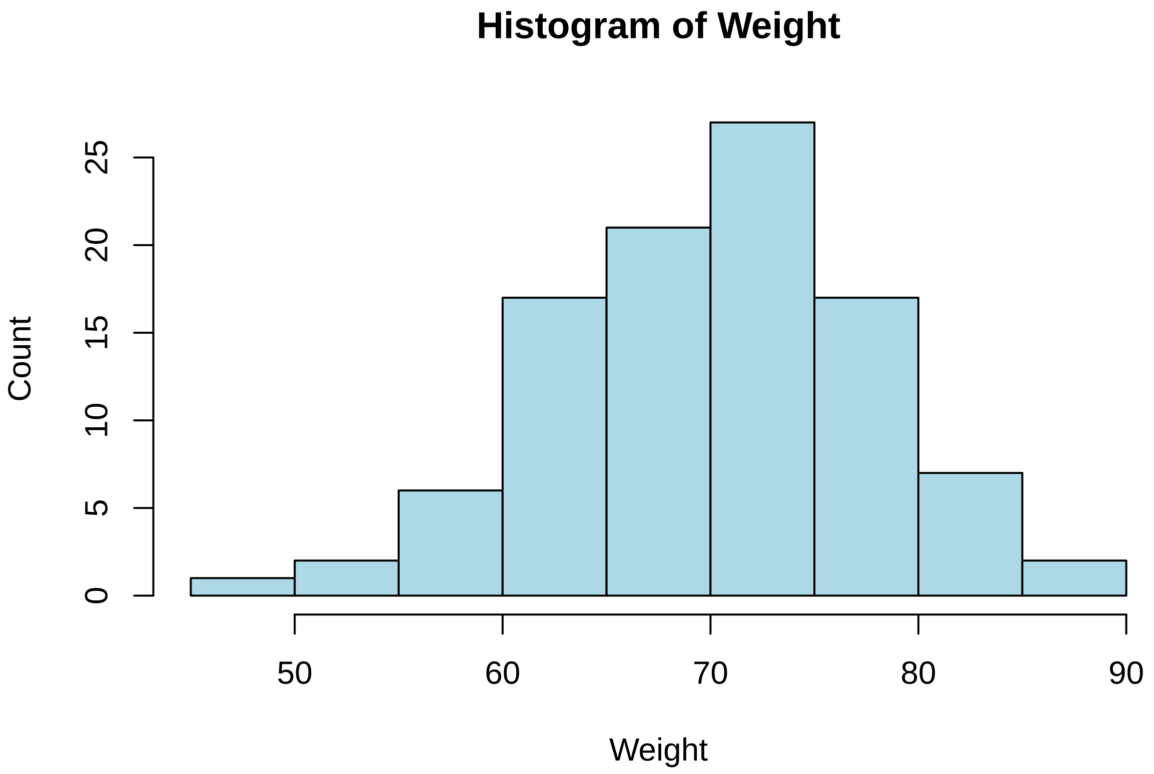
```
#m
#boxplot  plot between columns.

data(hwdf)
```

```
## Warning in data(hwdf): data set 'hwdf' not found
```

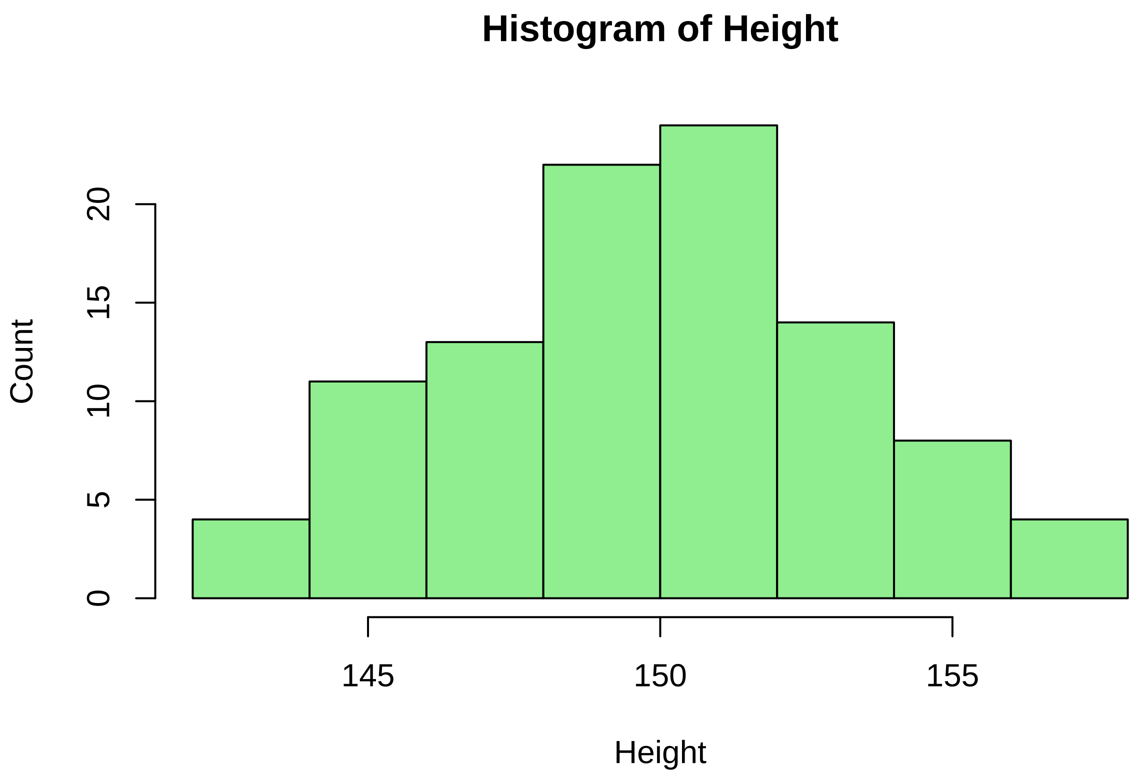
```
boxplot(hwdf$weight, hwdf$height,
        names = c("Weight", "Height"),
        main = "Boxplot of Weight and Height",
        ylab = "Values",
        col = c("lightblue", "lightgreen"))
```



```r
#m histrogram of every column in hwdf
# Histogram for Weight
hist(hwdf$weight,
     main = "Histogram of Weight",
     xlab = "Weight",
     ylab = "Count",
     col = "lightblue",
     border = "black",
     breaks = 10)  # Adjust breaks as needed
```



```r
# Histogram for Height
hist(hwdf$height,
     main = "Histogram of Height",
     xlab = "Height",
     ylab = "Count",
     col = "lightgreen",
     border = "black",
     breaks = 10)
```



```
#m
print("incase of height it ranges 145 to 155 ,and in case of weight it ranges from 55 to 85")
```

```
## [1] "incase of height it ranges 145 to 155 ,and in case of weight it ranges from 55 to 85"
```

```
#n writing a pre- existing dataframe into a csv file
write.csv(hwdf,"/home/a.gond/ASS1/data.csv",row.names = FALSE)
```

```
#o reading and getting csv
data <- read.csv("data.csv",sep =",")
head(data,10)
```

```
##      height   weight
## 1  144.6908 79.74508
## 2  149.2724 81.91356
## 3  149.9188 66.11174
## 4  149.2457 77.44463
## 5  151.8708 82.90162
## 6  156.3881 72.93296
## 7  147.8295 65.48295
## 8  143.5467 56.20910
## 9  149.9832 76.44663
## 10 143.0319 66.37348
```

```
#5.
getmode <- function(v){
  uniqv <- unique(v)
  uniqv[which.max(tabulate(match(v,uniqv)))]
}
hmode <- getmode(height)
wmode <- getmode(weight)
```

```r
print(wmode)
```

```
## [1] 79.74508
```

```r
cat("\n")
```

```r
print(hmode)
```

```
## [1] 144.6908
```