Prebootcamp R Quizz

Data Science Dojo

To warm up your R skills for the bootcamp, please follow the instructions below to write the R code.

We would read the iris data in this exercise. But before that, navigate your working directory in R to the Datasets folder under the bootcamp repository (or main directory).

```
## setwd("../Datasets/")
getwd()
```

```
## [1] "/home/yuhui/Copy/YDSDojo/bootcamp/RProgrammingQuizz"
```

Read the iris data set using read.csv.

```
iris.data <- read.csv("Iris_Data.csv")
```

Show the first few rows of the iris data.

```
head(iris.data)
```

```
##   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
```

Rename the column name Species to Type.

```
colnames(iris.data)[5] <- "Type"
```

Display the first 5 rows, and last 3 columns of the data frame.

```
iris.data[1:5, 3:5]
```

```
##   Petal.Length Petal.Width   Type
## 1          1.4         0.2 setosa
## 2          1.4         0.2 setosa
## 3          1.3         0.2 setosa
## 4          1.5         0.2 setosa
## 5          1.4         0.2 setosa
```

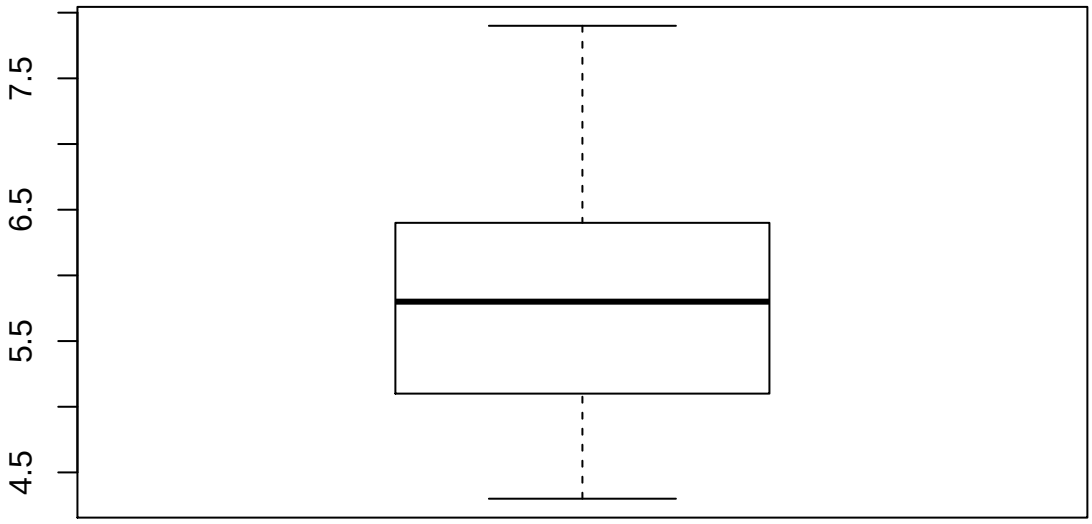
What is the data type of each column in this data frame of iris data.

```
str(iris.data)
```

```
## '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 ...
##  $ Type        : Factor w/ 3 levels "setosa","versicolor",..: 1 1 1 1 1 1 1 1 1 1 ...
```

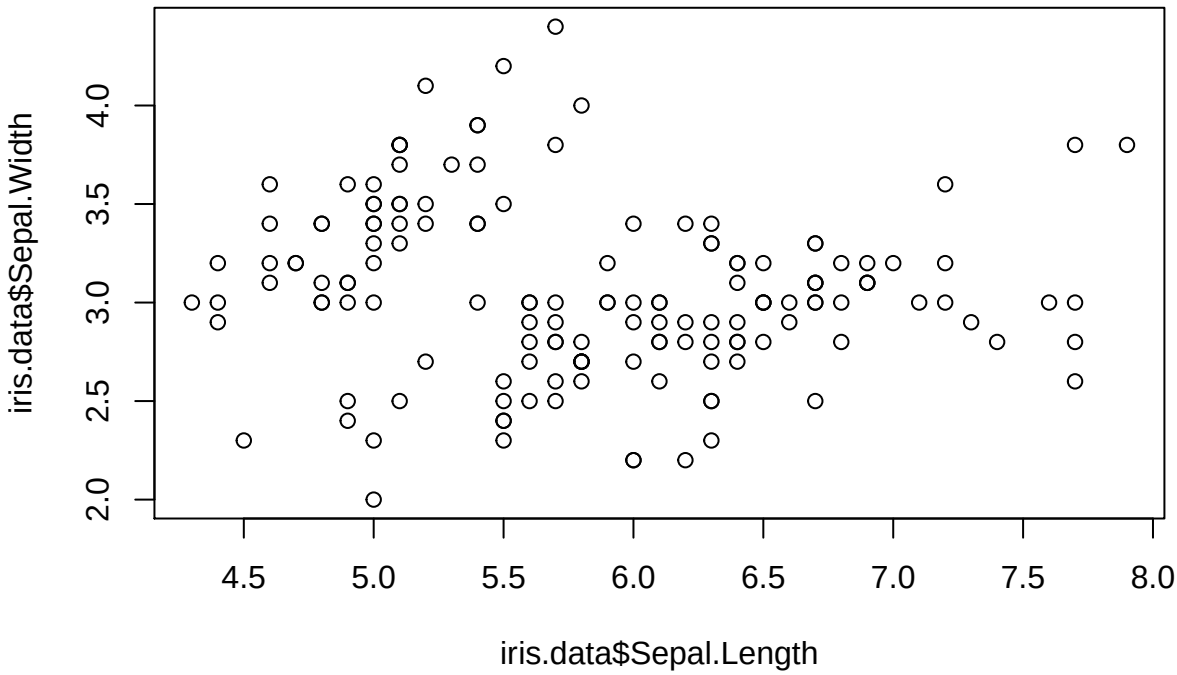
Draw the box plot of Sepal.Length.

```
boxplot(iris.data$Sepal.Length)
```



Draw the scatter plot (Sepal.Length vs. Sepal.Width).

```
plot(iris.data$Sepal.Length, iris.data$Sepal.Width)
```



Create a new column (called Sepal.Sum) of this data set, which is the summation of Sepal.Length and Sepal.Width values.

```
iris.data[,"Sepal.Sum"] <- iris.data[,"Sepal.Length"] + iris.data[,"Sepal.Width"]
```

What are the means, medians and standard deviations of the first four columns in this data frame?

```
summary(iris.data)
```

```
##   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
##          Type      Sepal.Sum
##  setosa    :50   Min.   : 6.800
##  versicolor:50   1st Qu.: 8.300
##  virginica :50   Median : 8.850
##                  Mean   : 8.901
##                  3rd Qu.: 9.575
##                  Max.   :11.700
```

```
sapply(as.list(iris.data[,1:4]), sd)
```

```
## Sepal.Length  Sepal.Width Petal.Length  Petal.Width
##    0.8280661    0.4358663    1.7652982    0.7622377
```

Install "lattice" package, and use pairs function to see the correlation between every pair of the features in this iris data.

```
## install.packages(lattice)
library(lattice)
pairs(iris.data)
```