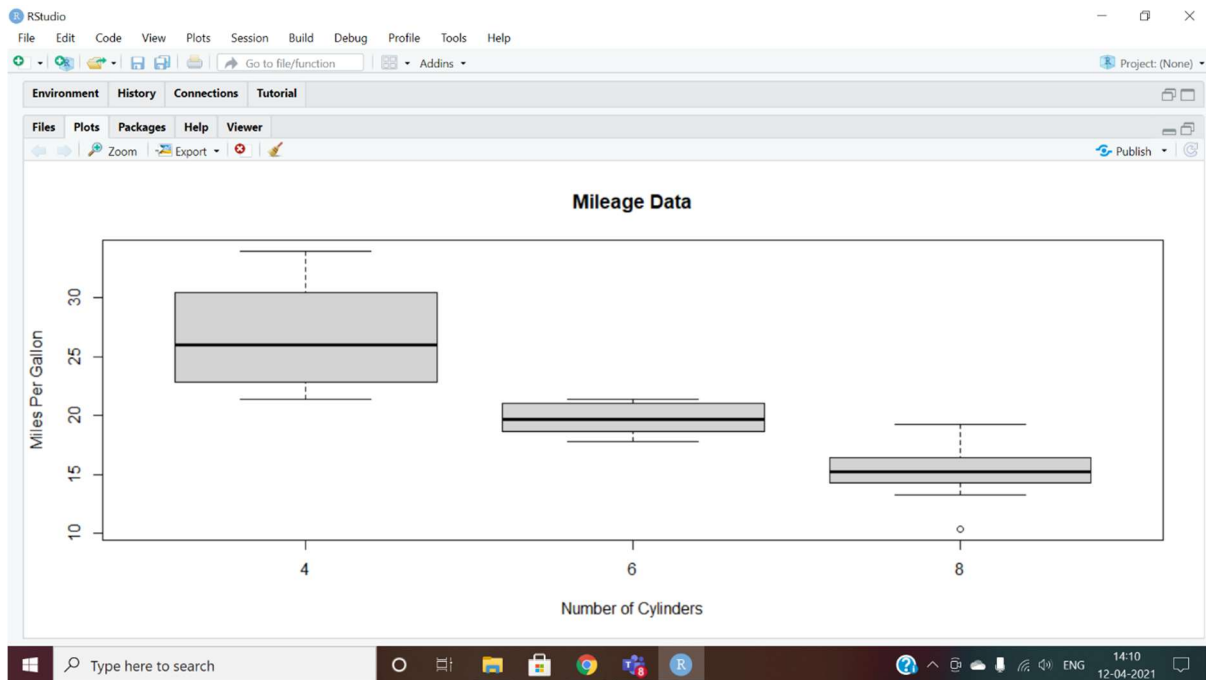


Q1) Consider the data set "mtcars". Write a command to draw a boxplot at the columns "mpg" and "cyl".

Answer: `boxplot(mpg ~ cyl, data = mtcars, xlab = "Number of Cylinders",
ylab = "Miles Per Gallon", main = "Mileage Data")`

OUTPUT

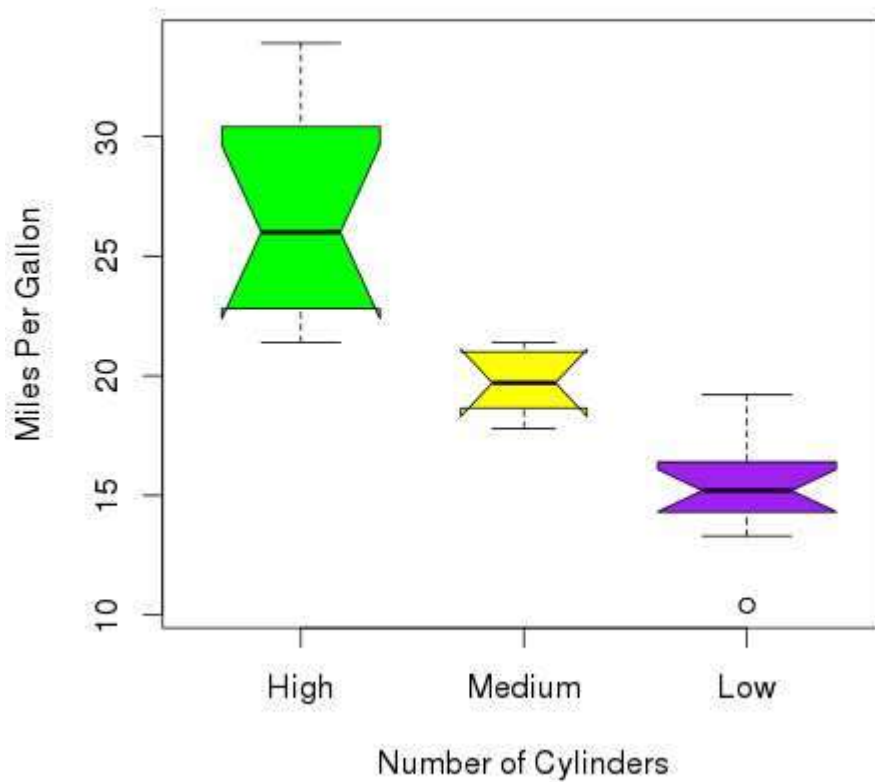


Q2) Write a command to draw a Boxplot with Notch at the columns "mpg" and "cyl".

Answer: `boxplot(mpg ~ cyl, data = mtcars,
xlab = "Number of Cylinders",
ylab = "Miles Per Gallon",
main = "Mileage Data",
notch = TRUE,
varwidth = TRUE,
col = c("green", "yellow", "purple"),
names = c("High", "Medium", "Low"))`

OUTPUT

Mileage Data



Create data for the graph. `x <- c(21, 62, 10, 53)` `labels <- c("London", "New York", "Singapore", "Mumbai")`

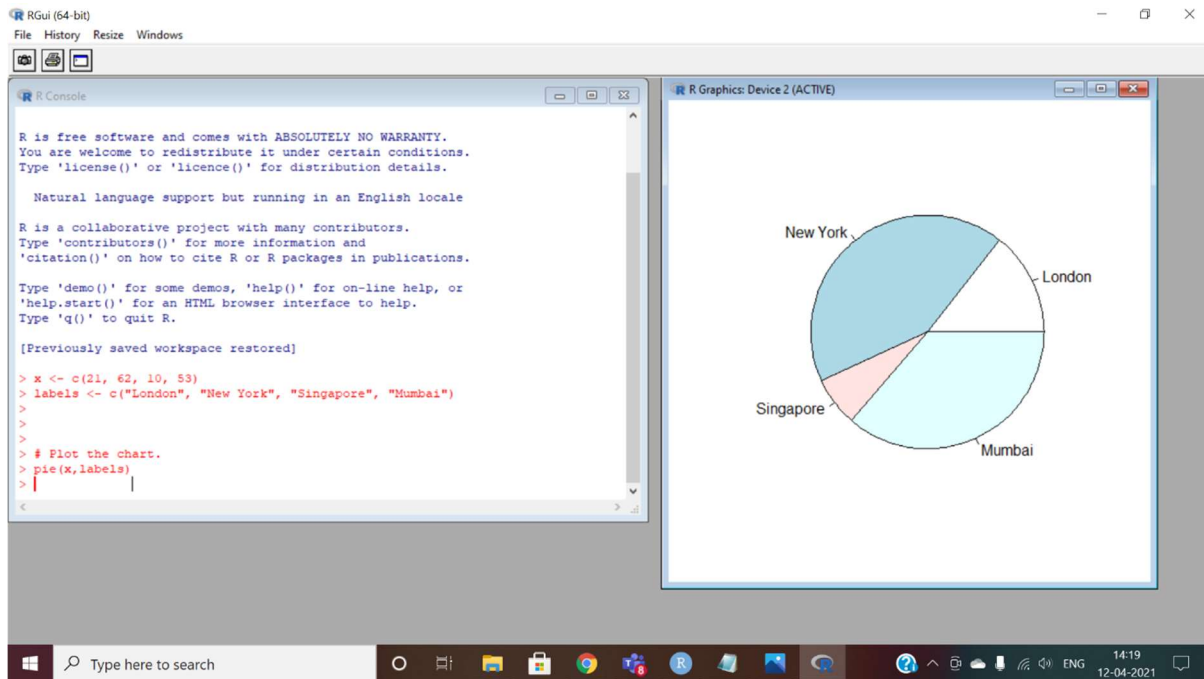
Q3) Write a command to draw a pie chart of above data.

Answer: `x <- c(21, 62, 10, 53)`

`labels <- c("London", "New York", "Singapore", "Mumbai")`

`pie(x, labels)`

OUTPUT



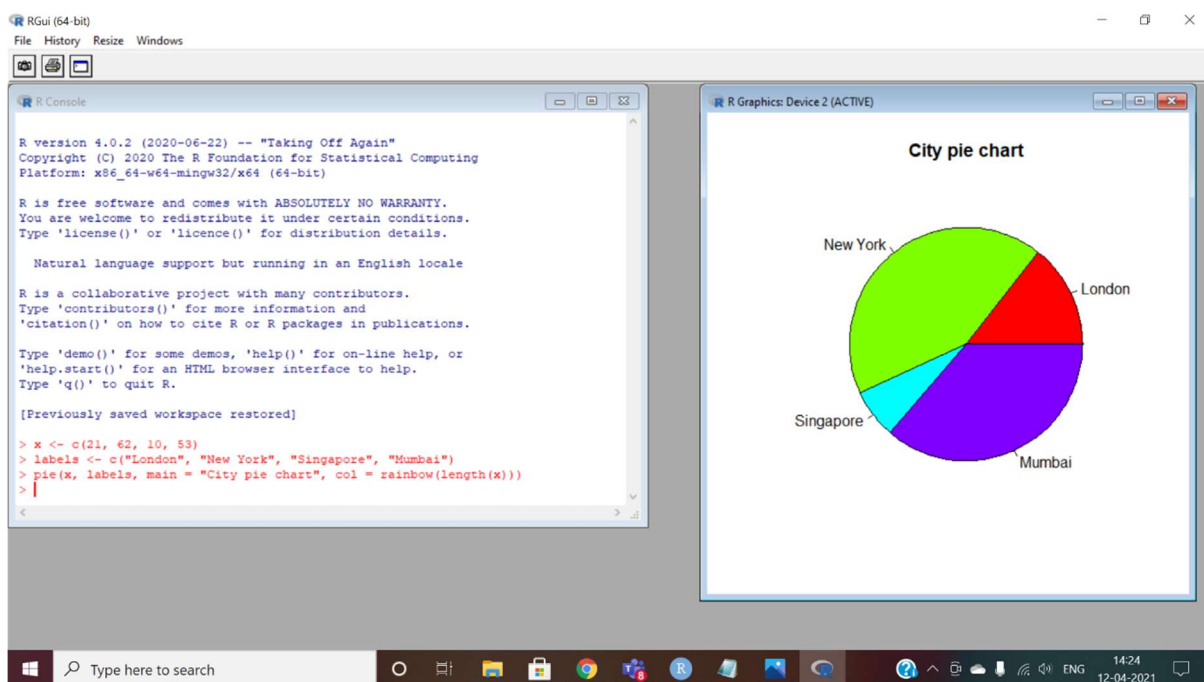
Q4) · Write a command to draw a Pie Chart with Colours of above data

Answer: `x <- c(21, 62, 10, 53)`

`labels <- c("London", "New York", "Singapore", "Mumbai")`

`pie(x, labels, main = "City pie chart", col = rainbow(length(x)))`

OUTPUT



Q5) Write a command to draw a Pie Chart with Slice Percentages and Chart Legend of above data.

Answer: `x <- c(21, 62, 10, 53)`

`labels <- c("London", "New York", "Singapore", "Mumbai")`

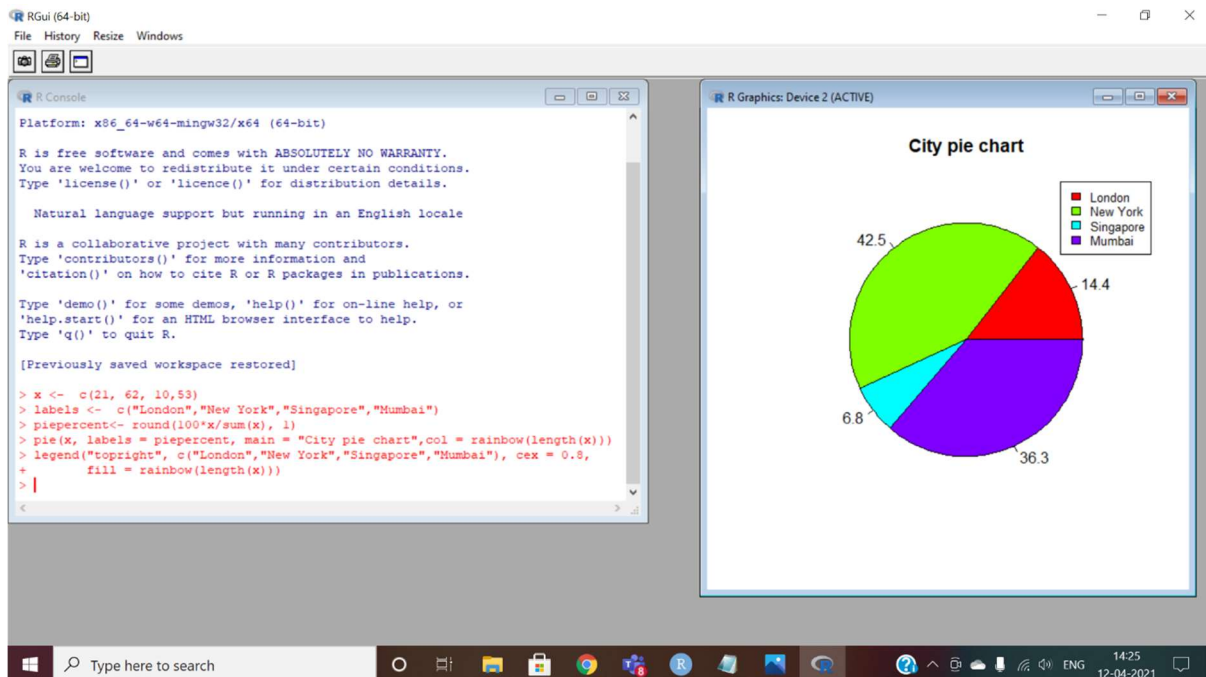
`piepercent <- round(100*x/sum(x), 1)`

`pie(x, labels = piepercent, main = "City pie chart", col = rainbow(length(x)))`

`legend("topright", c("London", "New York", "Singapore", "Mumbai"), cex = 0.8,`

`fill = rainbow(length(x)))`

OUTPUT



Q6) Write a command to draw a 3D Pie Chart with Slice Percentages and Chart Legend of above data.

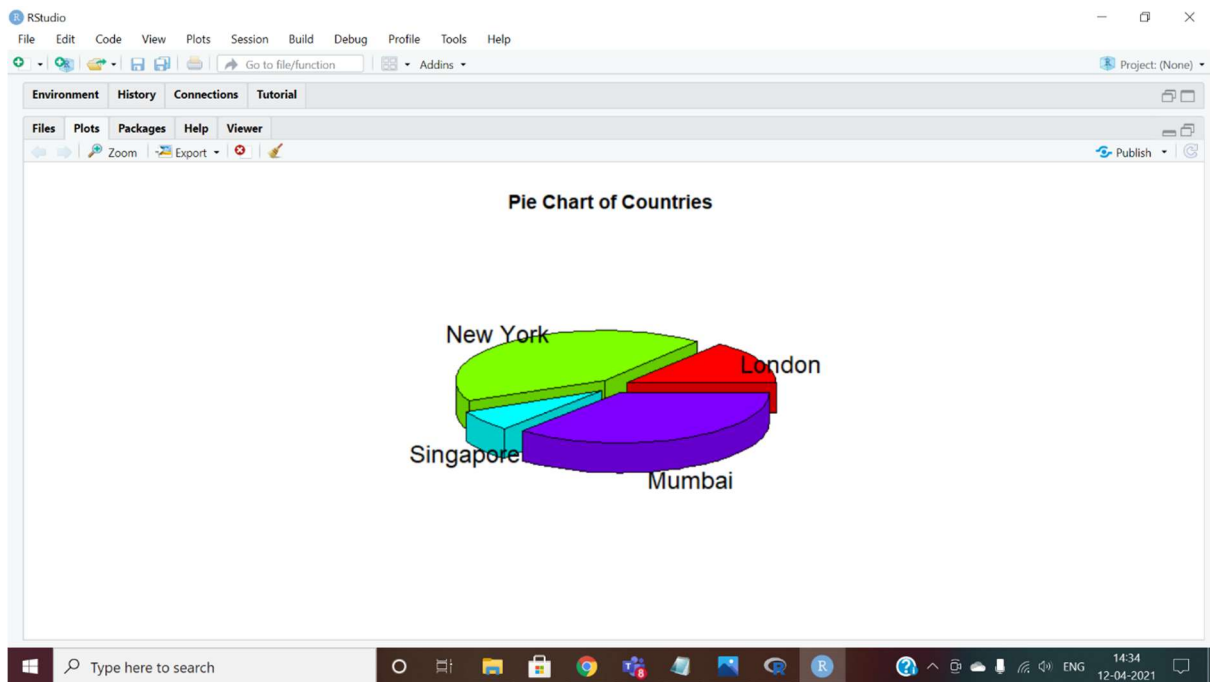
Answer: `library(plotrix)`

`x <- c(21, 62, 10, 53)`

`lbl <- c("London", "New York", "Singapore", "Mumbai")`

`pie3D(x, labels = lbl, explode = 0.1, main = "Pie Chart of Countries ")`

OUTPUT



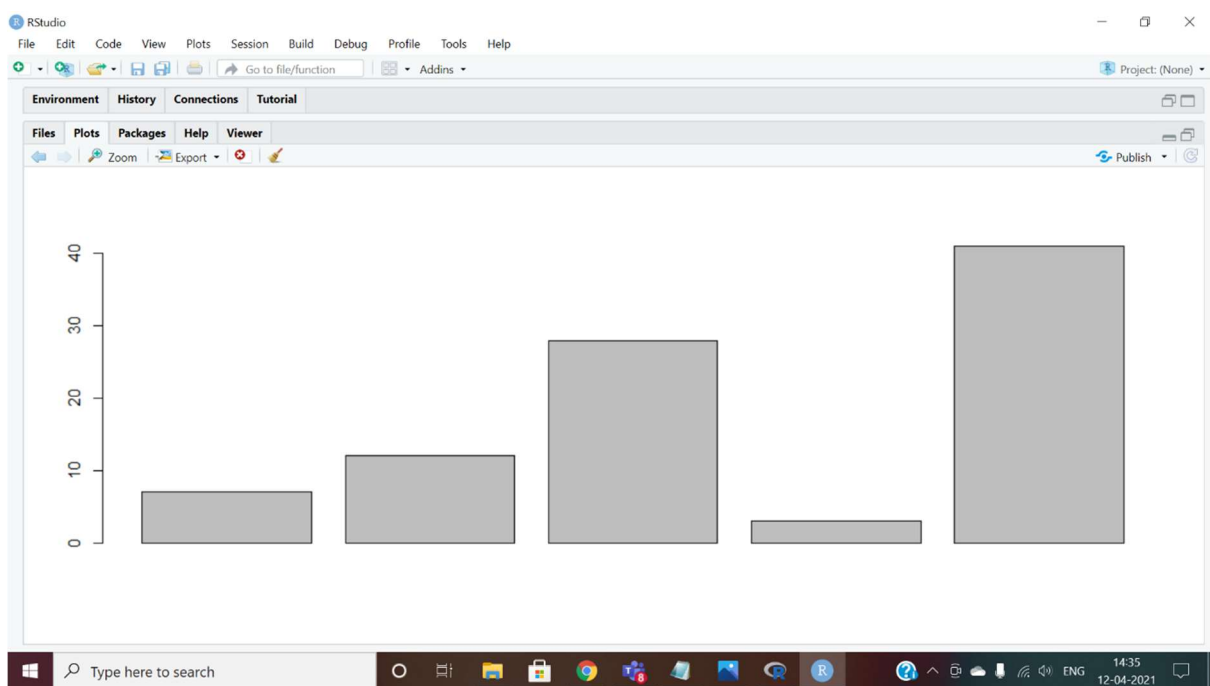
Create the data for the chart: `H <- c(7, 12, 28, 3, 41)`

Q7) Write a command to draw a bar plot of above data.

Answer: `H <- c(7, 12, 28, 3, 41)`

`barplot(H)`

OUTPUT



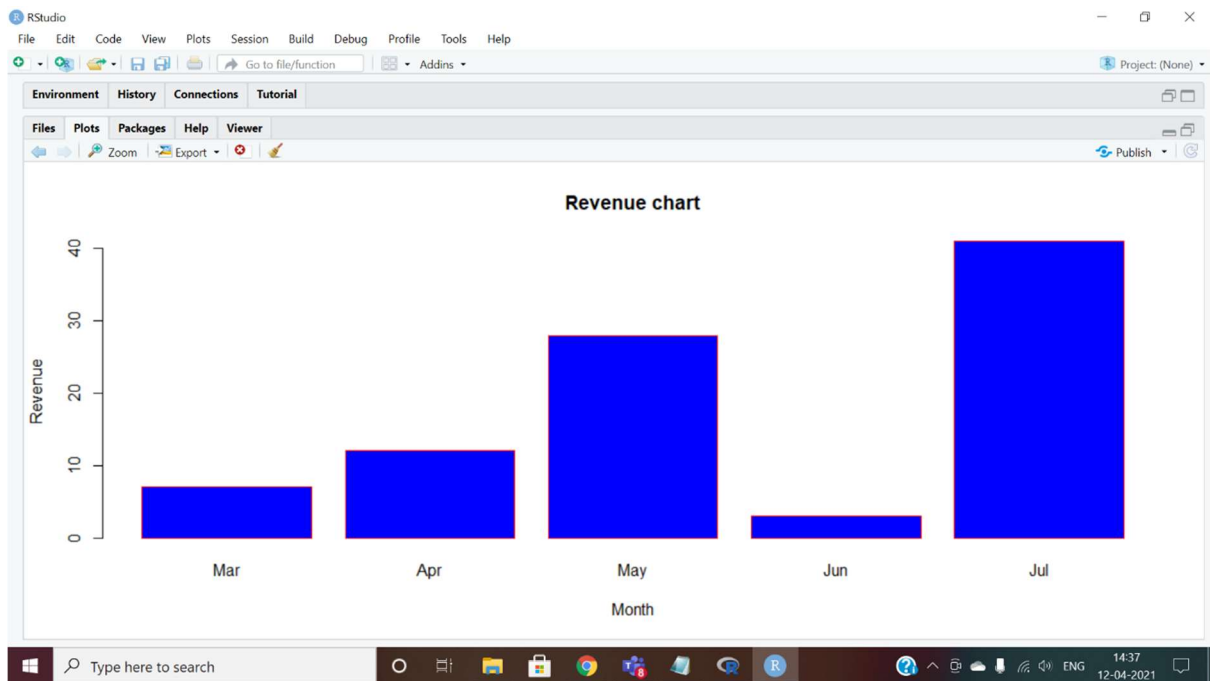
Q8) Write a command to draw a Bar Chart Labels, Title and Colors of above data.

Answer: `H <- c(7,12,28,3,41)`

`M <- c("Mar","Apr","May","Jun","Jul")`

`barplot(H,names.arg=M,xlab="Month",ylab="Revenue",col="blue",
main="Revenue chart",border="red")`

OUTPUT



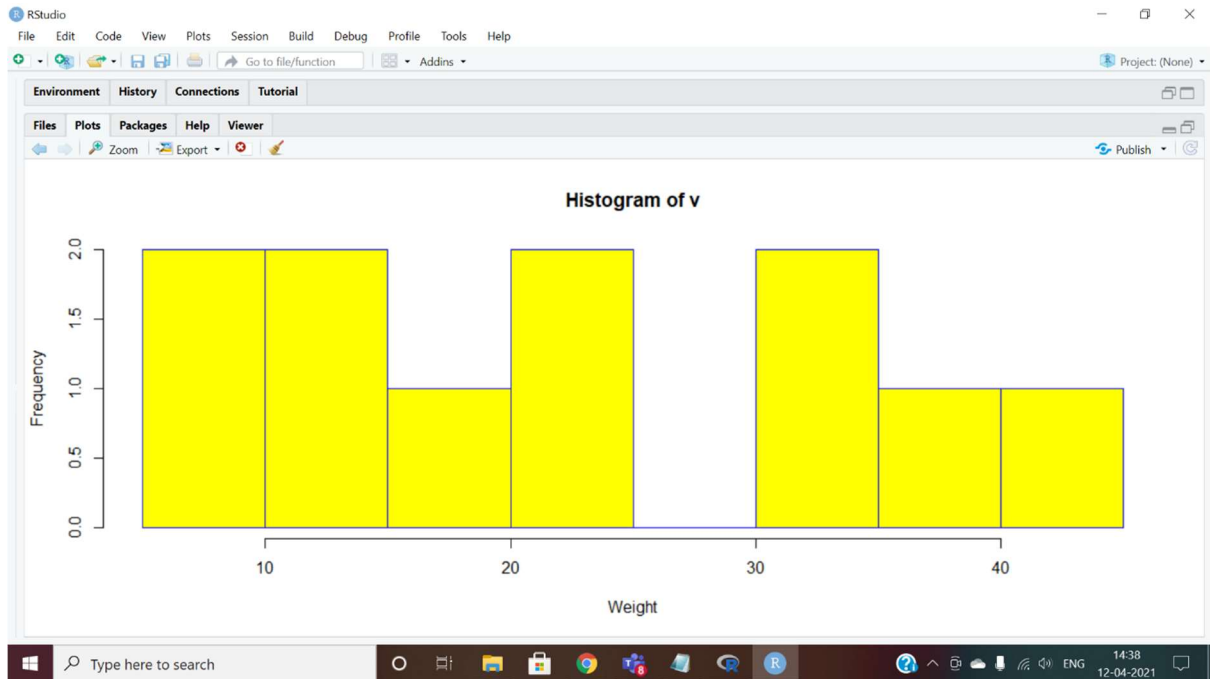
. Create data for the graph: `v <- c(9,13,21,8,36,22,12,41,31,33,19)`

Q9)Write a command to draw a histogram of above data.

Answer: `v <- c(9,13,21,8,36,22,12,41,31,33,19)`

`hist(v,xlab = "Weight",col = "yellow",border = "blue")`

OUTPUT

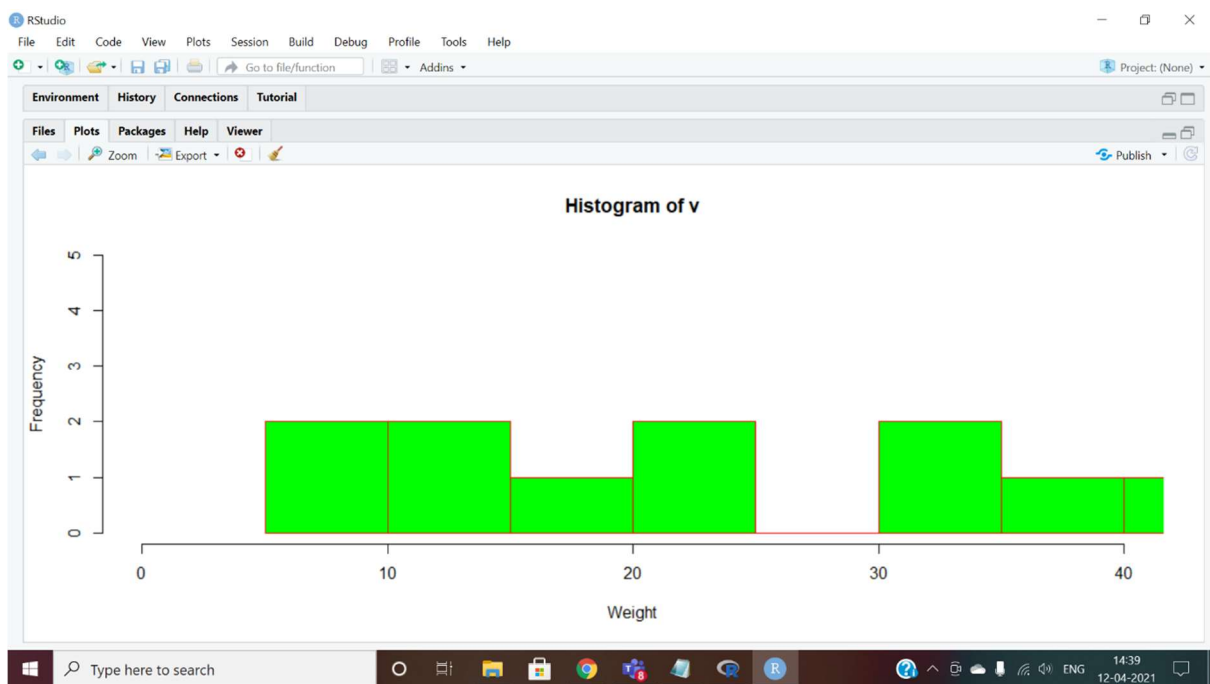


Q10) Write a command to draw a histogram of above data with range of X and Y values

Answer: `v <- c(9,13,21,8,36,22,12,41,31,33,19)`

`hist(v,xlab = "Weight",col = "green",border = "red", xlim = c(0,40), ylim = c(0,5),
breaks = 5)`

OUTPUT



Create the data for the chart: `v <- c(7,12,28,3,41)`

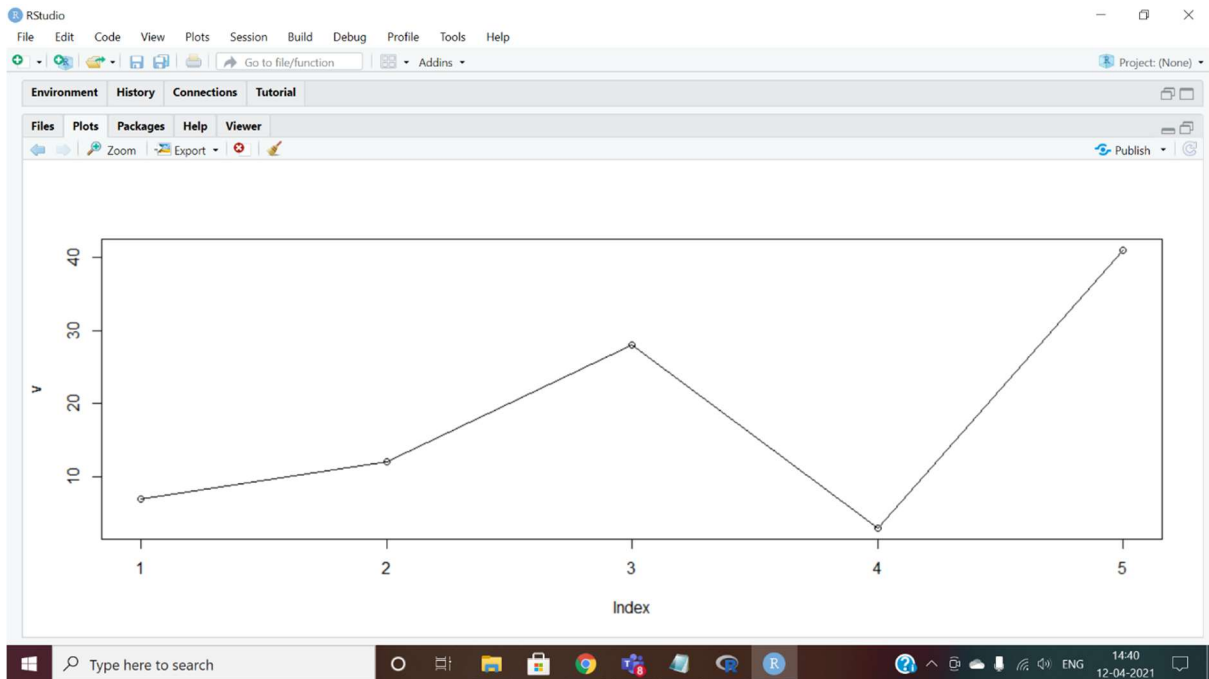
Q11) Write a command to draw a line chart of above data.

Answer:

```
v <- c(7,12,28,3,41)
```

```
plot(v,type = "o")
```

OUTPUT

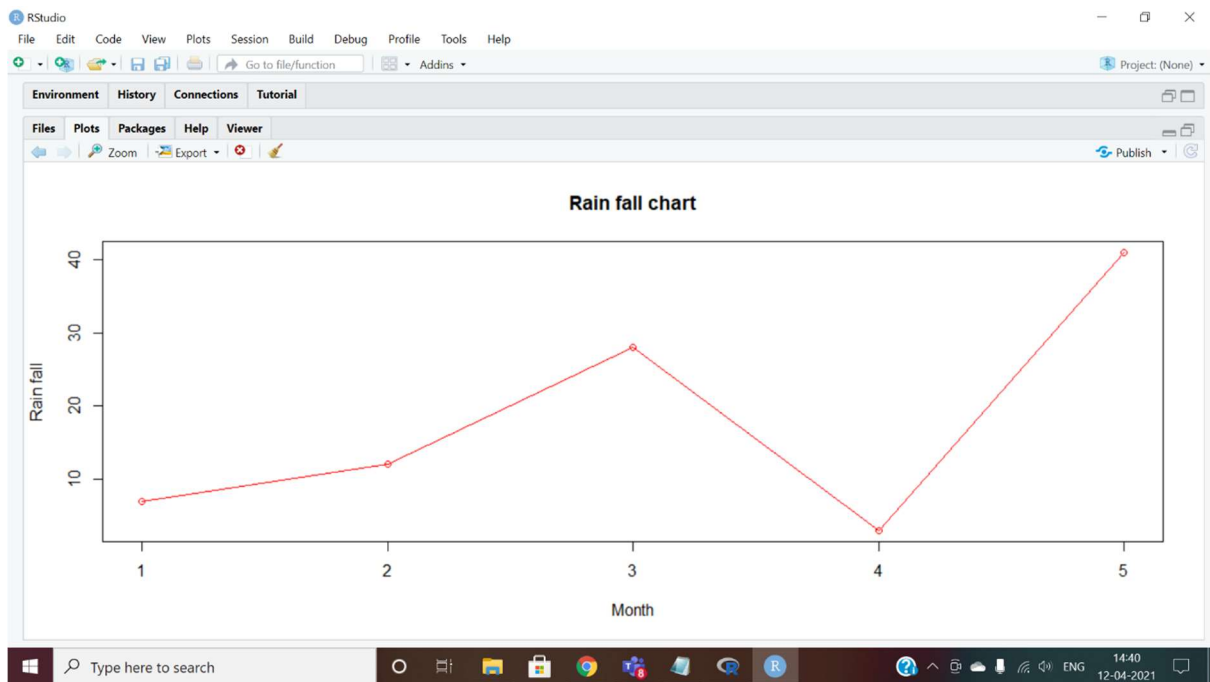


Q12) Write a command to draw a line chart of above data with Line Chart Title, Color and Labels.

Answer: `v <- c(7,12,28,3,41)`

```
plot(v,type = "o", col = "red", xlab = "Month", ylab = "Rain fall",  
     main = "Rain fall chart")
```

OUTPUT



Create the data for the chart: `input <- mtcars[,c('wt','mpg')] print(head(input))`

Q13) Write a command to draw a Scatterplot of above data.

Answer: `input <- mtcars[,c('wt','mpg')]`

`plot(x = input$wt,y = input$mpg,`

`xlab = "Weight",`

`ylab = "Milage",`

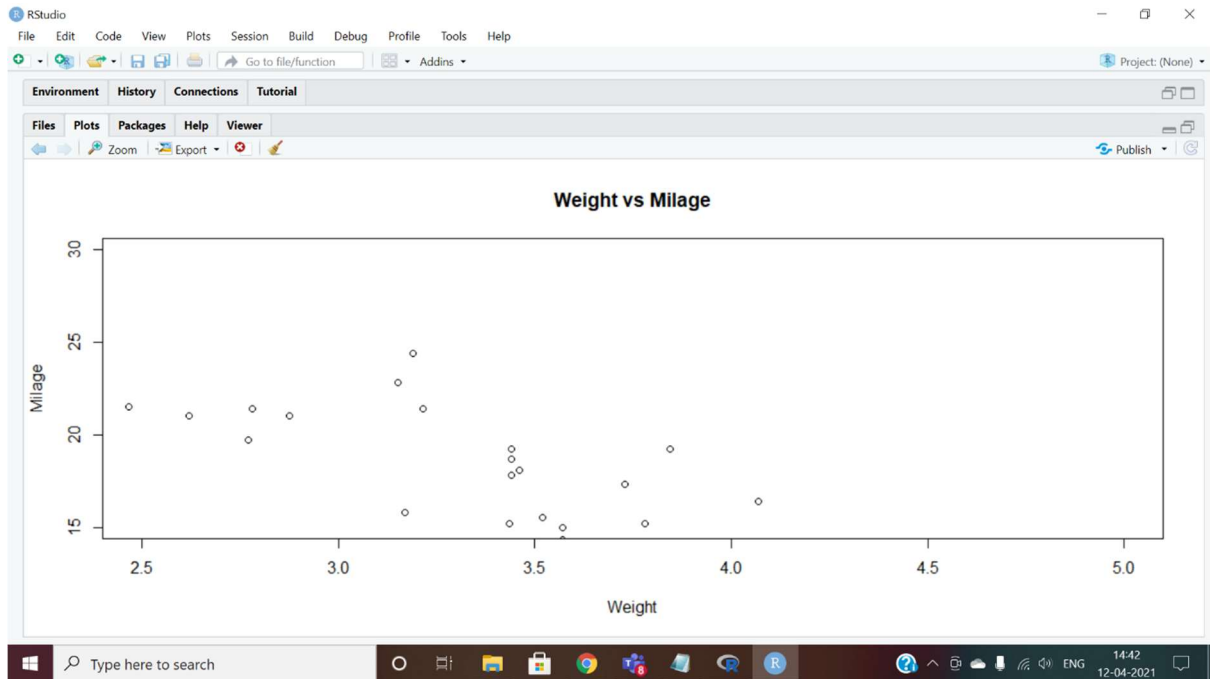
`xlim = c(2.5,5),`

`ylim = c(15,30),`

`main = "Weight vs Milage"`

`)`

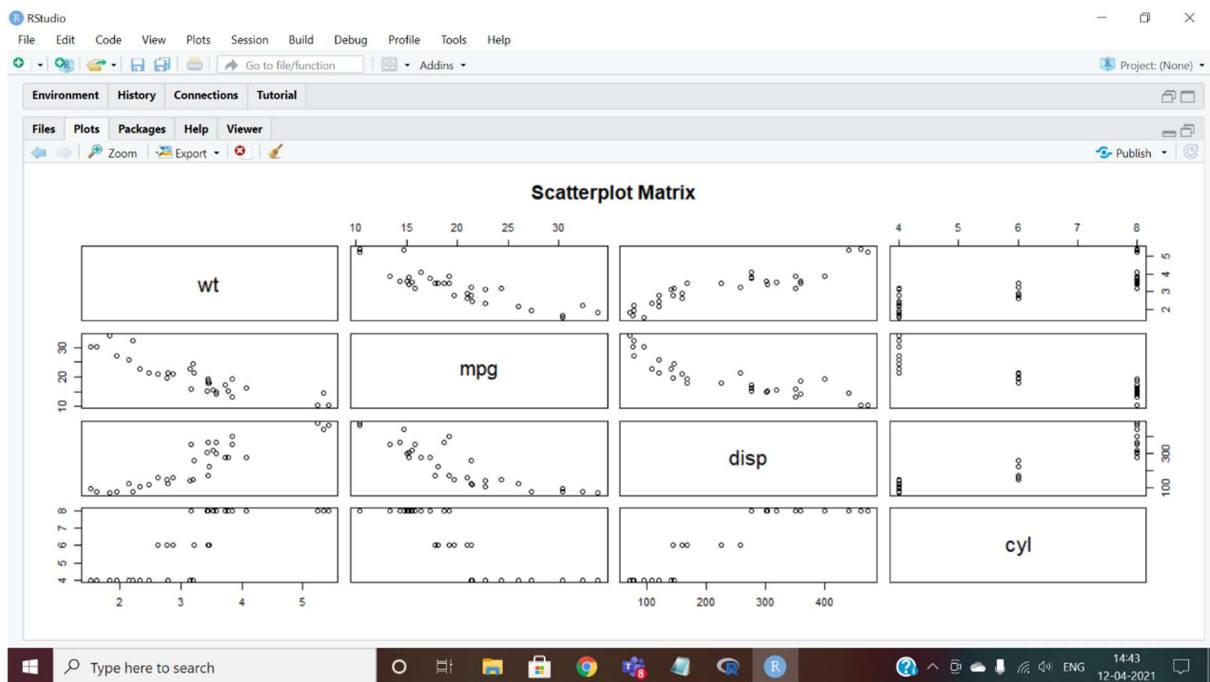
OUTPUT



Q14) Write a command to draw a Scatterplot Matrices of above data.

Answer: `pairs(~wt+mpg+disp+cyl,data = mtcars,`
`main = "Scatterplot Matrix")`

OUTPUT

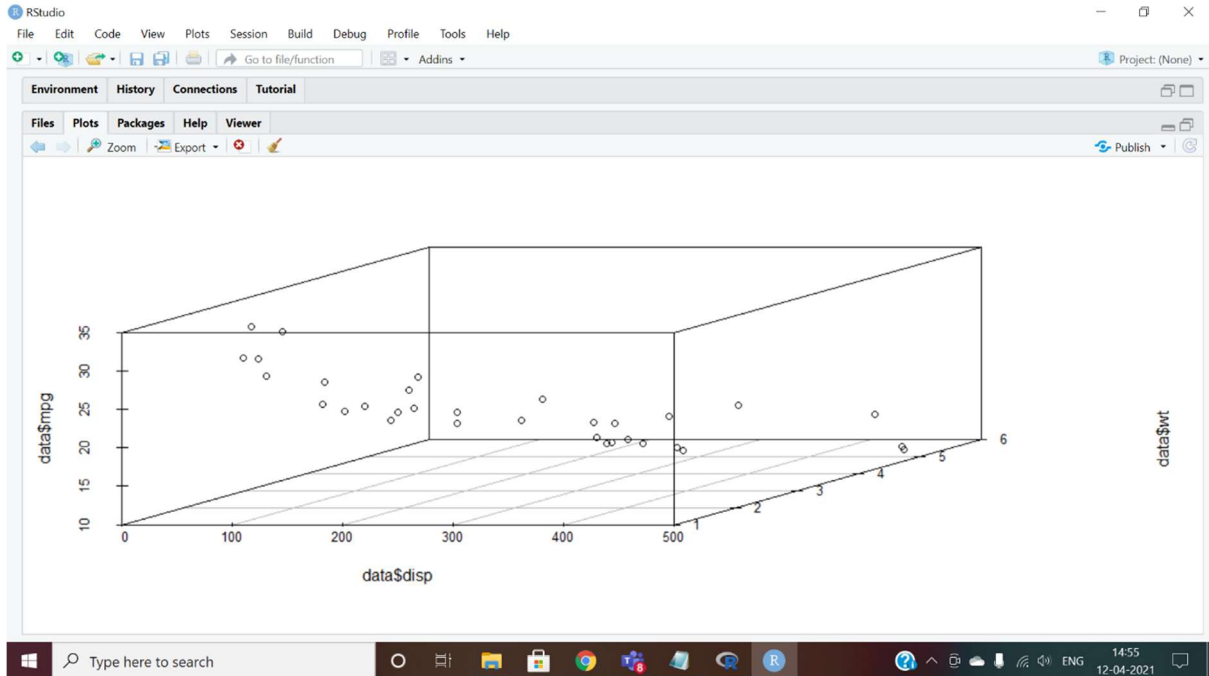


Q15) Write a command to draw a 3D scatterplot with x = disp, y = wt, z = mpg of mtcars data.

Answer: `data<-mtcars`

```
scatterplot3d(x=data$'disp',y =data$'wt',  
              z =data$'mpg')
```

OUTPUT

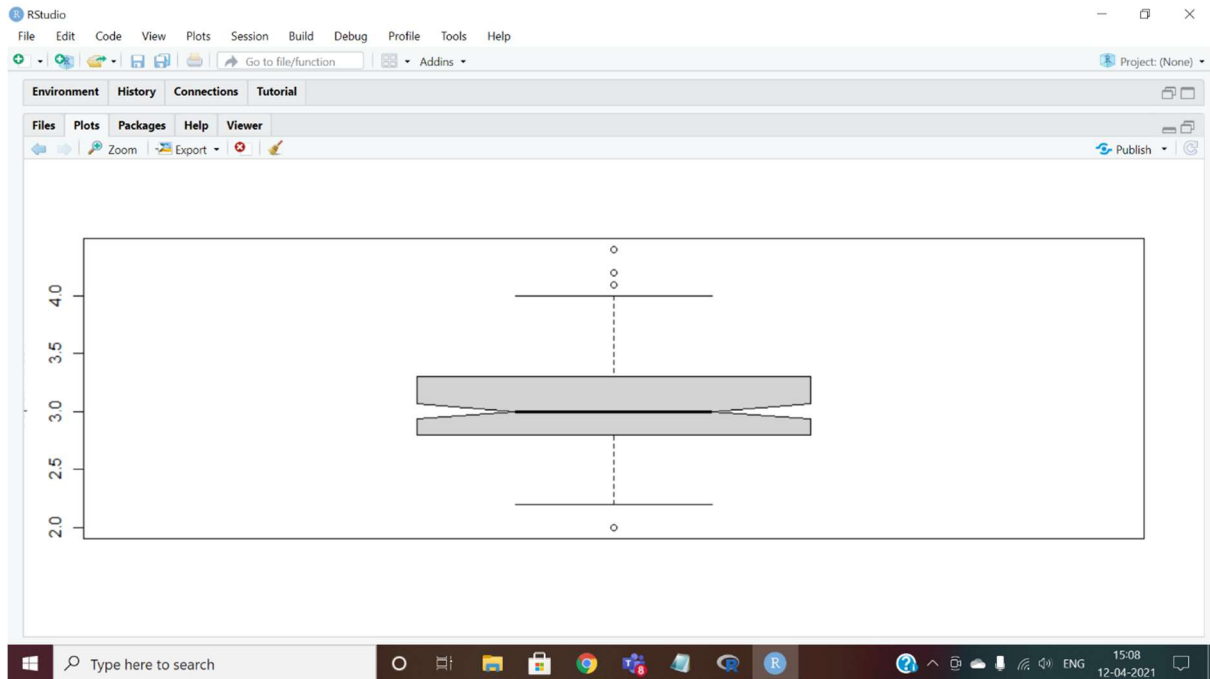


Draw a box plot of the lengths by species in iris dataset:

Q16) Draw a notched box plot of the sepal widths

Answer: `boxplot(iris$Sepal.Width, notch = TRUE)`

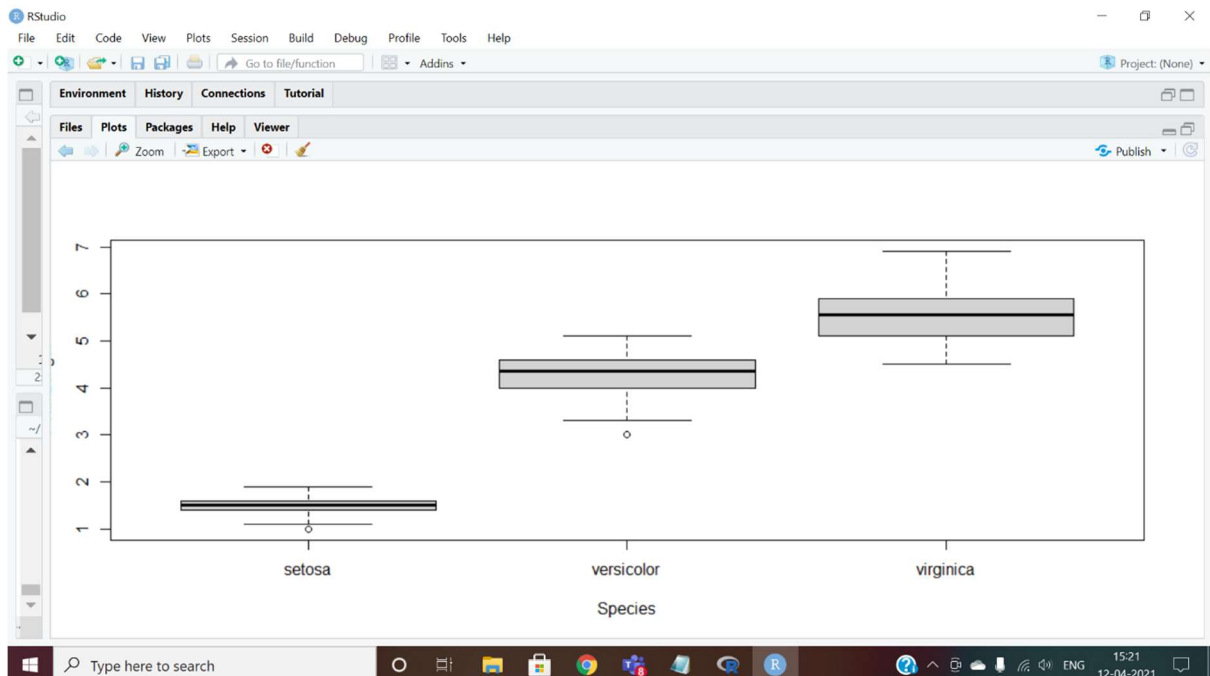
OUTPUT



Q17) Display box plots of petal lengths by species

Answer: `boxplot(Petal.Length~Species,data = iris)`

OUTPUT



Q18) `iris = read.table("http://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data", sep = ",", header = FALSE)` `head(iris)` Write a command to draw a histogram of above data with petal.width.

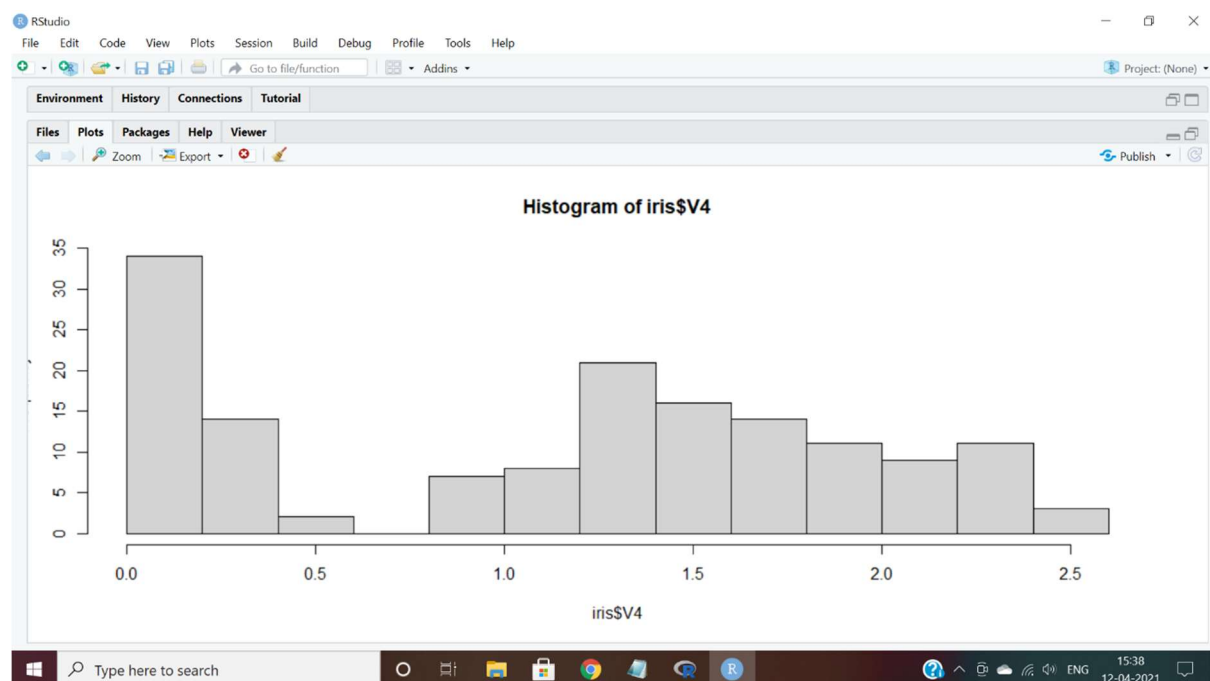
Answer: `iris = read.table("http://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data",`

`sep = ",", header = FALSE)`

`head(iris)`

`hist(iris$V4)`

OUTPUT



Q19) Write a command to make data frame as follows: `df <- data.frame(supp = rep(c("VC", "OJ"), each = 3), dose = rep(c("D0.5", "D1", "D2"), 2), len = c(6.8, 15, 33, 4.2, 10, 29.5))` `head(df)` Write a command to draw a stacked bar chart of above data frame.

Answer: `df2 <- data.frame(supp=rep(c("VC", "OJ"), each=3),`

`dose=rep(c("D0.5", "D1", "D2"),2),`

`len=c(6.8, 15, 33, 4.2, 10, 29.5))`

`head(df2)`

`ggplot(data=df2, aes(x=dose, y=len, fill=supp)) +`

`geom_bar(stat="identity")`

OUTPUT

