Module - 5

Graphs and charts

R-Barplots

barplot() function

1) eg: max.temp <- (23, 22, 24, 25, 26)
   barplot(max.temp)

2) barplot(max.temp, main = "Max Temp in a week",
   xlab = "Degree celsius", ylab = "Day",
   names.arg = c("sun", "Mon", "Tue", "wed", "Thur", "Fri",
   "sat"), col = "darkred", horiz = T)

3) x <- c(1, 1, 1, 1, 1, 2, 2, 2, 2, 3, 3, 3, 1, 2)
   y <- table(x)
   barplot(height = y, width = c(8, 8, 2))
   barplot(height = y, space = 5)
   barplot(height = y, names.arg = LETTERS(1:3))
   barplot(height = y, names.arg = c("stud1", "stud2", "stud3"),
   legend.text = T)

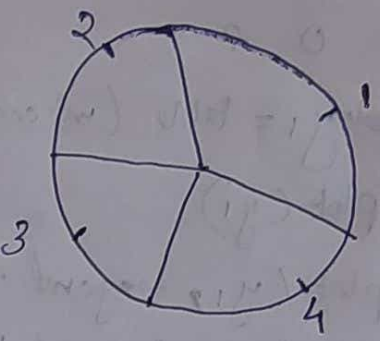
   barplot(height = y, names.arg = c("st1", "st2", "st3"),
   legend.text = T, las = 3)

```
data("mtcars")
names(mtcars)
> table(mtcars$cyl)

 4  6  8
11  7 14

> table(mtcars$gear)

 3  4  5
15 12  5

> table(mtcars$cyl, mtcars$gear)

   3  4  5
4  1  8  2
6  2  4  1
8 12  0  2

> y1 = table(mtcars$cyl, mtcars$gear)
> barplot(y1)
> barplot(y1, Legend.text = T)
> barplot(y1, legend.text = T, beside = T)
> barplot(y1, legend.text = T, beside = T, horiz = T)
> barplot(y, horiz = T)
> barplot(y, horiz = T, las = 1)
> barplot(y, horiz = T, las = 1, density = c(8, 10, 15),
                                 angle = c(45, 80, 75))

> barplot(y, col = "red")
> par(mfrow = c(1,1))
> barplot(y, col = c(1,2,3))
> barplot(y, col = rainbow(1))
> barplot(y, col = rainbow(n=15))
```

```
> barplot(y, col=rainbow(s=.3, n=15))
> barplot(y, col=rainbow(s=.3, n=15), borders=F)
> par(mfrow=c(1,2))
> barplot(y, main="header", sub="footer")
> barplot(y, main=expression(sum(x)))
> barplot(y, main=expression(x%*%y))
> barplot(y, main=expression(beta))
> barplot(y, main=expression(x+y))
```

Piechart- Pie() function

```
x=c(1,1,1,2,2,3,3,4,4,4)
y=table(x)
pie(y)
Pie(y, main="my first plot")
Pie(y, labels=LETTERS(1:4))
Pie(y, edges=10)
Pie(y, radius=.2)
Pie(y, clockwise=T)
Pie(y, density=c(10,20,30,40))
Pie(y, col=rainbow(15))
Pie(y, col=rainbow(15), borders=F)
```



> library(plotrix)

> ?pie3D

> y

```
  x
1 2 3 4
3 2 2 3
```

> pie3D(y)

> pie3D(y, explode = .5)

Histogram: hist() function

Used for plotting quantitative data

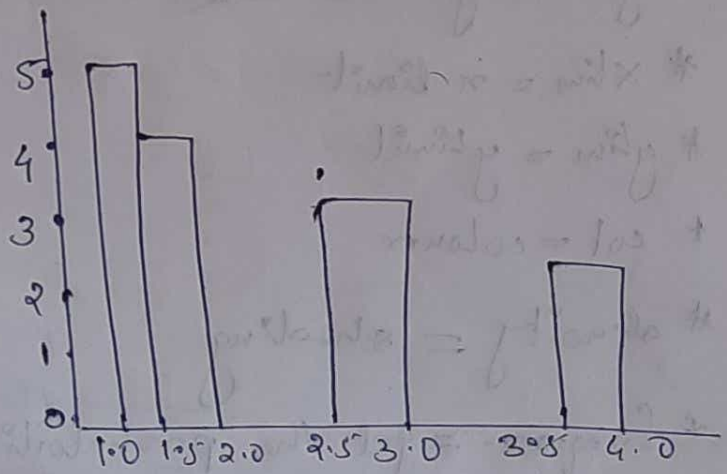
> x = c(1,1,1,1,1,2,2,2,2,3,3,3,3,4,4)

~~(1, 1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 4, 4)~~

> y = table(x)

> y

```
  x
1 2 3 4
5 4 3 2
```



> hist(x)

> cut(x, 6)

> data.frame(x, cut(x, 6))

> cut(x, 2)

> cut(x, 6, right = T)

> cut(x, 6, right = F)

> hist(x)

> data("cars")

> head(cars)

> cars $speed

> hist(cars $speed)

> hist(cars $dist)

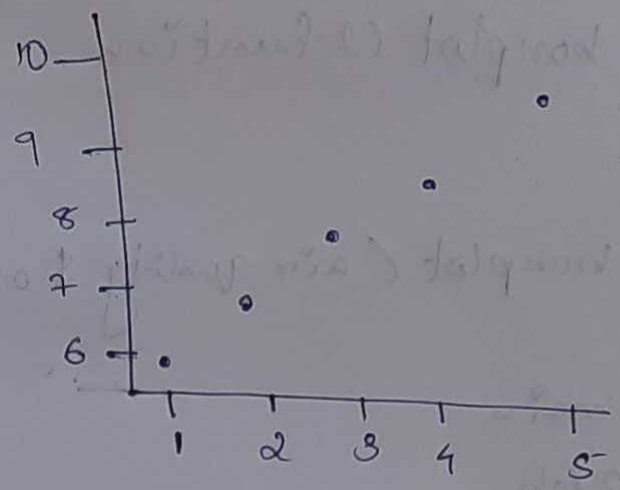
> hist(cars $dist, breaks = 22)

> hist(cars $dist, main = "My first histogram", xlab = "dist",
ylab = "no of times")

* main = heading
* xlab = x axis name
* ylab = y axis name
* xlim = x limit
* ylim = y limit
* col = colour
* density = shading
* freq = get the probability distri. instead of freq
freq = FALSE
* las = to show the limit values horizontally las = TRUE
* border = set borders, border = F
* breaks - no: of cells we want
place where the break occurs.
* count s - no: of observations falling in that cell.

Scatter plot

plot () function



plot [base]

plot (1)

plot (c(5, 6, 7, 8, 9))

x = 1:5

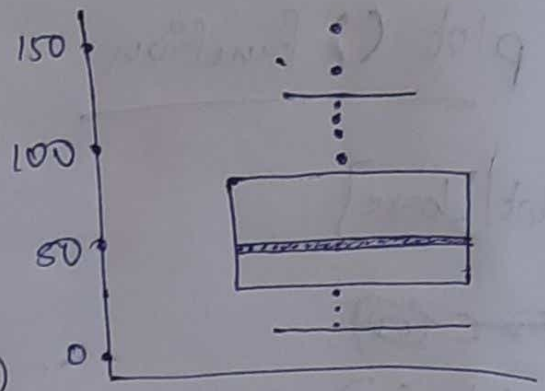
y = 6:10

plot (x, y)

* main - heading
* x lab - x axis name
* y lab - y axis name
* col - color
* type - 'p' for points
  'l' for lines
  'b' both line & point —•—
  'c' for lines part alone of 'b'
  'o' over ploted —•—
  'h' for histogram
  's' for stairs
  'S' for stair
  'n' no plotting.

Box plot

* quantitative data ploting
* boxplot() function



eg:

```
> boxplot(airquality$ozone)
```

* main
* xlab
* ylab
* col
* notch - notch in the ~~pl~~ plot - notch = T
* horizontal horizon-tal = T
  display box plot horizontaly

multiple boxplot;

```
> O2 = airquality$ozone
> temp = airquality$temp
> wind = airquality$wind
> boxplot(O2, temp, wind)
```

* varwidth:
  changes the box width
  varwidth = 1
* border = It change bordercolor