

Graphical Representation

Bar Plots in R

Input can be vector, matrix etc..

Types:

- 1) Simple Bar Plot
- 2) Horizontal Bar Plot
- 3) Stacked Bar Plot
- 4) Grouped Bar Plot

R Bar Plot

- Created by using barplot() function
- If we supply a vector, the plot will have bars with their height equal to elements in the vector.

eg: $\text{kemp} = \text{c}(27, 26, 23, 24, 30)$

barplot(kemp)

barplot() arguments:

main : heading

xlab : x-axis

ylab : y-axis

names.arg : name of each bar

col → gives colours to each

eg: col = "green"

horiz = TRUE or T → displays horizontally
density (splits each bar)

eg: density = 10

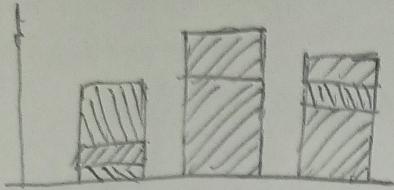
border → gives border

height, width, space, length.text

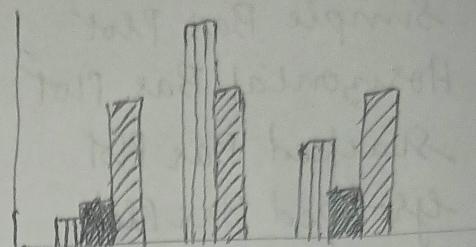
names() : gives column heading

Stacked Barplot (bar plot which has matrix inputs) .

eg: $y_1 = \text{table(mtcars} \$ \text{cyl, mtcars} \$ \text{gear)}$
 barplot(cyl)
 barplot(cyl, legend = text = T, beside = T)



Stacked Barplot



grouped Barplot

angle : the slope of shading lines

par(mfrows = c(2, 2)) : gives two rows and 2 columns.

par(mfrows = c(1, 1)) : default

barplot(y, col = c(10, 12, 13))

=> gives each bar each color

barplot(y, col = rainbow(s=1, n=15))

=> gives the lightest color

border = F : without border

border = T : with border

xlim : limit for the x axis

ylim : limit for the y axis

=> barplot(y, main = expression(x+y))

(alpha)

(beta)

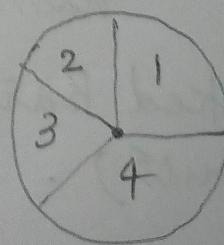
Piechart

pie() function

eg: $x = c(1, 1, 1, 2, 2, 3, 3, 4, 4, 4)$

y : table(x)

pie(y)



Arguments

x & input values

Labels & giving names for the slices

edges : the circular outline of the pie is approximated by a ~~poly~~ polygon with edges (default = 200)

radius : radius of pie (-1, 1) change the direction
clockwise : direction to the opp.

init.angle : changes the angle

density, main, angle, rot, border.

(plotrix package) => for 30

=> library (plotrix)

? pie 30

pie 30 (x) function (for 30 piechart)

explode :

Histograms [hist() function]

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

hist(x)

int(x, b) : shows the interval

data ("cars")

head (cars)

=> hist (cars\$speed)

breaks : one of a vector giving breakpoint b/w histogram cells.

breaks = 21 :: 21 cuts (no. of columns)

arguments :

xlab, ylab, main, xlim, ylim, rot.

freq = FALSE, we can get probability distribution instead of frequency.

Return value of hist()

$h \leftarrow \text{hist}(\text{temp})$

breaks : places where the break occur

counts : the no. of observation falling in that cell

density : density of cells

mids : midpoint of cells

xname : the x argument name

equidist : a logical value indicating if the breaks are equally spaced or not

Scatter Plot [plot() function]

generic x-y plotting

$\text{plot}(c(1, 2, 3, 4))$: plots values in
 $(1, 1), (2, 2), (3, 3), (4, 4)$

$\text{plot}(c(5, 6, 7, 8))$: plot values as
 $(1, 5), (2, 6), (3, 7), (4, 8)$

e.g.: $x = 1:5$

$y = 6:10$

$\text{plot}(x, y)$

values are plotted as

$(1, 6), (2, 7), (3, 8), (4, 9), (5, 10)$

arguments :

main, xlab, ylab, col

type = "p" → points (○ ○ ○)

"l" → lines (— —)

"b" → both (—○—○)

"c" → for line alone "t" (---)

"o" → overplotted —○—

"h", histograms //

"s", Stairs steps ↗

"S", other steps ↗

"n", no plotting

Box Plots [boxplot() function]

Arguments:

main, xlab, ylab, not.

notch = T

horizontal = T, displays horizontally

boxplot(mtcars, wt)

↳ (gives 3 plots in one)

