

GRAPHICAL REPRESENTATION

Bar Plots in R

Inputs can be vector, matrix etc.

4 types are there:

- * Simple Bar Plot
- * Horizontal Bar Plot
- * Stacked Bar Plot
- * Grouped Bar Plot

R Bar Plot

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

eg: temp = c(27, 26, 23, 24, 30)
barplot(temp)

barplot() arguments:

main : heading
xlab : x-axis title
ylab : y-axis title

names . arg : name of each bar
col : gives colors

horiz : TRUE (Represents as horizontal bar)

density : Splits each bar

border : gives border

height : describing the bar which makes up the plot

width : gives width to each bar

space : space b/w each bar

legend . text : gives logical indication whether a legend should be included.

lab : lab = 1, 2, 3

names() : gives the column heading

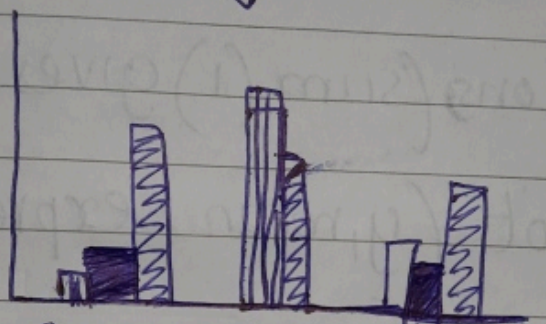
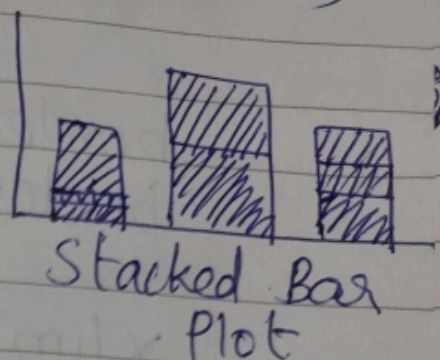
eg : data ("mtcars")
names ("mtcars")

table (mtcars \$ cut) :
gives the table of
cylinders in mtcars

Stacked Bar Plot (bar plot which has matrix input)

eg: $y1 = \text{table}(mtcars\$cyl, mtcars\$gear)$
 $\text{barplot}(y1) \rightarrow$

$\text{barplot}(y1, \text{legend-text} = T, \text{beside} = T)$



Grouped Bar Plot

angle : the slope of shading lines

$\text{par}(mfrow = c(2,2))$: gives two row and 2 columns

$\text{par}(mfrow = c(1,1))$: default

$\text{barplot}(y, \text{col} = c(10, 12, 13))$

\Rightarrow gives each bar each colour

$\text{barplot}(y, \text{col} = \text{rainbow}(1))$

\Rightarrow gives a colour in the window

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

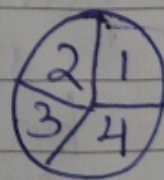
expressions, (sum (i) gives the heading Σ)

⇒ 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

15)
ghtest

polygon with this many sides
(default = 200)
radius : gives the radius of the pie
(-1, 1) change the direction

clock wise :
init angle : changes the angle
density ; main , angle , col , border

(plotrix package) \Rightarrow for 3D
 \Rightarrow library (plotrix)

heading
 \leq
(x+y)
(alpha)
(beta)

lpie 3D
pie3D(4) function (for 3D piechart)
explode :

Histogram

hist() function

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

cut(x, 6) : shows the interval

data("cars")
head(cars)

\Rightarrow hist(car\$speed)

breaks : one of a vector giving the

breakpoints b/w histogram cells

breaks = 22 : 22 iuts (no. of columns)

xlab, ylab, main, xlim, ylim, col

frea : False, we can get the probability distribution instead of frequency.

Return value of hist()

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

breaks : places where the break occurs
counts : the no. of observations falling in that cell

density : density of the cells

mids : midpoint of the cell

xnome : the x argument nome

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

Breaks : we can specify the no. of cells we want in the histogram and we can also give vectors.

Scatter Plot

plot () function

Generic x-y plotting

plot(c(1, 2, 3, 4)) : plots the values in
(1,1), (2,2), (3,3), (4,4)

plot(c(5, 6, 7, 8)) : plots the values in
(1,5), (2,6), (3,7), (4,8)

eg: $x = 1:5$

$y = 6:10$

plot(x, y)

~~val~~ values are plotted by
(1,6), (2,7), (3,8), (4,9), (5,10)

arguments: main, xlab, ylab, col

↳ type = "p", points ○ ○ ○

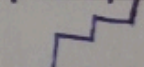
"l", lines ———


"b", both —○—○—○—


"c", for the line alone
of "b" — — —

"o", overplotted —○—○—○—

"h", histogram || || ||

"s", stair steps 

"S", other steps 

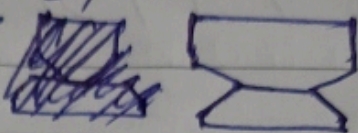
"p", no plotting 

Box plots

boxplot() function

Arguments : main, xlab,

ylab, col

notch = T 

horizontal = T, represents
as horizontal
barplot (oz, temp, wind)

↳ gives 3 box plot in one plot

varwidth = 1
border

