

Bar Plot.

Bar plots can be created in R using the ~~barplot~~ function.

max.temp <- (())

barplot(max.temp).

bar chart with added parameters
barplot(max.temp,

main = "Maximum Temperature This week",

xlab = "Degree Celsius",

ylab = "Day",

names.arg = ("Sun",),

col = "darkred",

horiz = TRUE)

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

`table(x)`

`barplot(y)`

`barplot(height = y, width = 10) = c(1, 2, 3, 4)`

`barplot(height = y, width = 3)`

`barplot(height = y, width = 3, space = 5)`

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

`y = table(x)`

`pie(y, edges = 6)`

`pie(y, clockwise = F)`

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

`y = table(x)`

`pie(y, col = rainbow(5))`

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

`y = table(x)`

`pie(y, col = c("red", "blue", "green", "yellow"), border = F)`

Histogram

Histograms can be created using the `hist()` function in R programming language.

- This function takes in a vector of values for which the histogram is plotted.
- Example data set: `airquality`: Daily air quality measurements in New York, May to September 1973.

→ `str(airquality)`

'data.frame': 153 obs of 8 variables

\$ Ozone: int 41 86 12 18 NA 28 23 19 NA ...

\$ Solar.R

\$ Wind

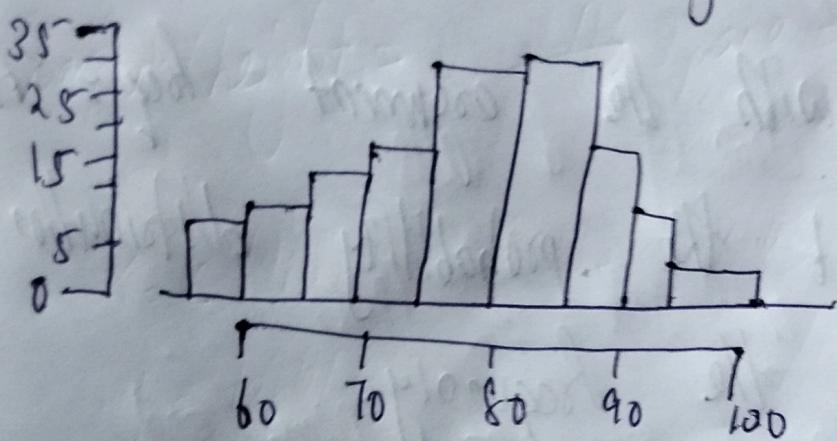
\$ Temp

\$ Month

Simple histogram

Temperature \leftarrow inequality & Temp
hist(Temperature)

Histogram of Temperature



Temperature

height of a cell is equal to the number of observations falling in that cell

- We can pass in additional parameters to control the way our plot looks.
- ? hist.

• Some of the frequently used ones are.
Math to give the title, xlabel and ylabel to
provide labels for the axes, xlim and ylim
to provide range of the axes. col to
define color etc.

• Additionally, with the argument freq = FALSE.
We can get the probability distributions
instead of the frequency.

histogram with added parameters

hist(Temperature,

Math = "Maximum daily temperature at La

Gatineau Airport",

xlab = "Temperature in degrees Fahrenheit",

xlim = (150, 100),

col = rainbow(20)

fig = plt.figure()

hist(temp,

 bins = "Maxman's daily temperature" at
 La Guardia Airport",

xlab = "Temperature /n degrees Fahrenheit",

col = rainbow(20), border = False, bins = 20, r

density = True)

Return value of hist()

The hist() function returns a list with

6 components

h <- hist(Temperature)

> h

density

- breaks = places where the breaks occurs,
- counts = the numbers of observations falling in that cell
- density - the density of cells
- mid - the midpoint of cells,
- xrange - the x argument name and
- equidist - a logical value indicating if the breaks are equally spaced or not.

Defining the Number of Bins

- With the breaks argument we can specify the number of cells we want in the histogram.

$$x = 1; 10$$

$$y = 20; 30$$

plot (x, y)

Scatter plot

(heat / air quality)

	Ozone	Solast	R wind	Temp	Month	Day
1	41	19.0	+	7.4	87	5
2	36	11.8		8.0	72	5
3	12	14.9		12.6	74	5
4	18	31.3		11.5	62	5
5	NA	NA		14.3	56	5
6	28	NA		14.9	66	5

temp = air quality & Day

day = air quality & Day

temp = air quality & Temp

Not fully done

$$x = 1:50$$

$$y = \sin(x)$$

x

y

$$x = 1:10$$

$$y = 20:30$$

plot(x,y)

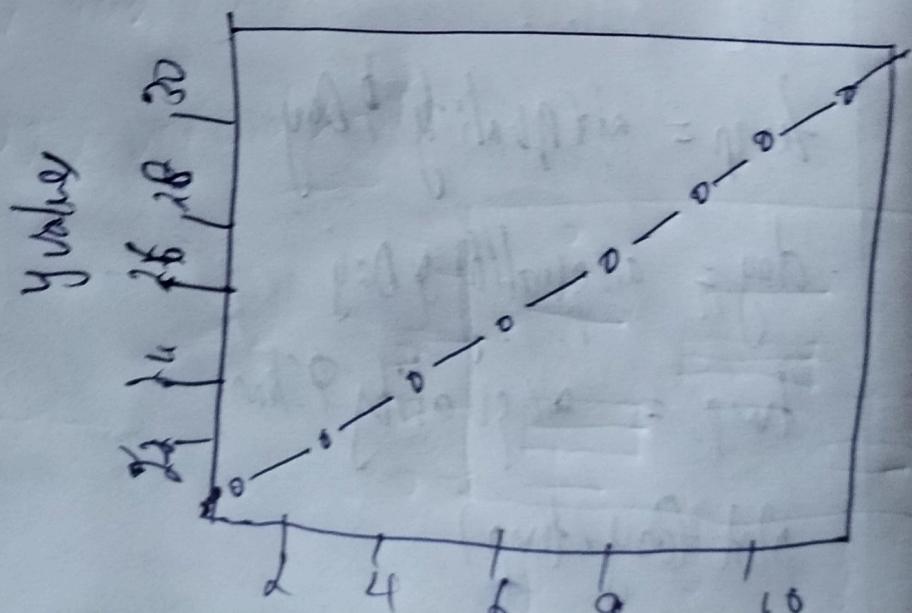
$$y = 20:30$$

plot(x,y)

plot(x, y) matlab = "Scatter plot", xlabel = "x values";

ylabel = "y values", col = 1:10 type = "p")

Scatter plot



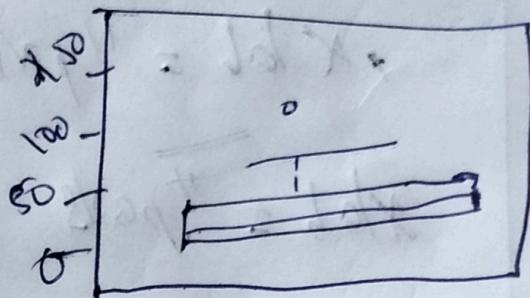
Box plot

$x = c(1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 5, 100, 200)$

box plot(x)

$x = c(1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 5, 10, 10, 10, 20, 20, 25, 25, 45, 200)$

box plot(x)



str(cars) equality

'data.frame': 189 obs. of 6 variables:

\$ speed : num 4 4 7 7 8 8 12 12 12 18 NA 28 28 19 19 DNA -
\$ dist : num 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12

\$ speed.R : num 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12
\$ dist.R : num 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12

\$ speed.DNA : num 7 7 8 8 12 12 12 12 12 12 12 12 12 12 12 12 12 12
\$ dist.DNA : num 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12

\$ Month : int 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

\$ Day : int 1 2 3 4 5 6 7 8 9 10 ...

boxplot (large variability for ozone)

boxplot (odrogality done, math = "Mean ozone in parts per billion from 1300 to 1800 hours at Roosevelt Island")

* xlab = "parts per billion", ylab = "ozone"

xlab = "parts per billion", ylab = "ozone" / 10 = "orange")

boxplot o2 = odrogality of ozone

temp = odrogality & temp

wind = odrogality & wind

boxplot /o2, temp/wind/

boxplot /o2, varwidth=1)

