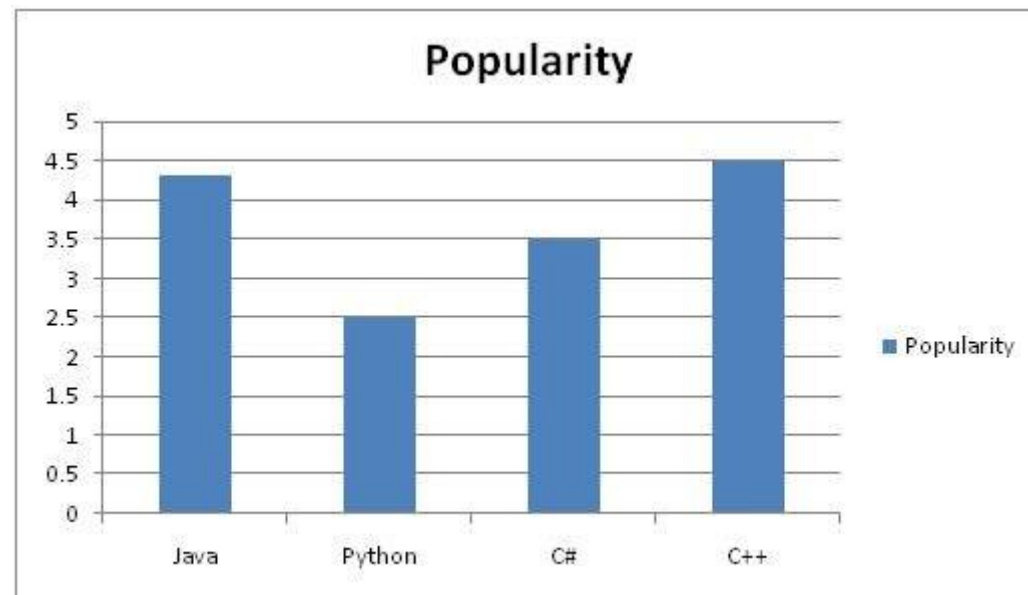# DATA VISUALISATION

1. Histogram
2. Quartile plot
3. Distribution chart
4. Scatter plot
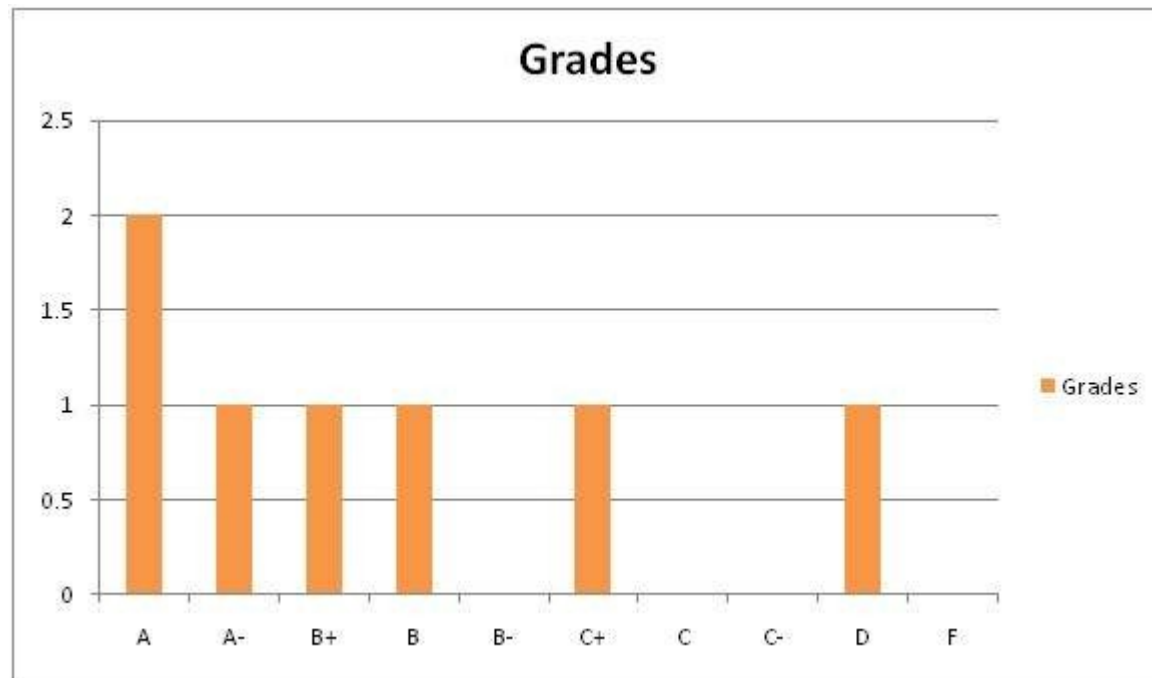5. Bubble chart
6. Density chart

HISTOGRAM

- *A histogram is a graph.*
- *A graph that shows frequency of anything.*
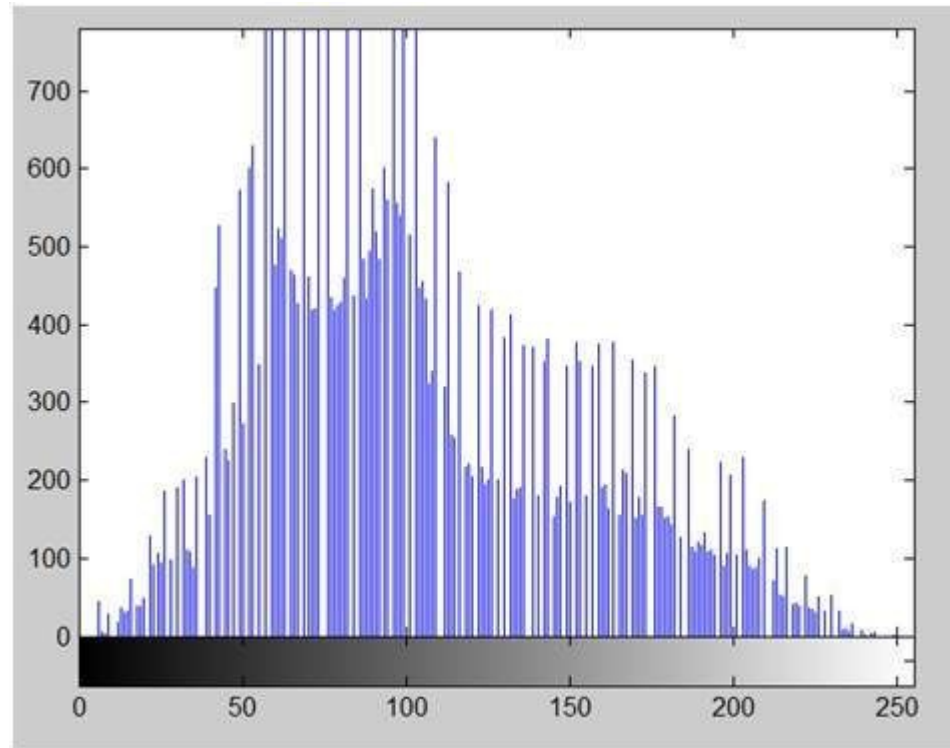- *Usually histogram have bars that represent frequency of occurring of data in the whole data set.*
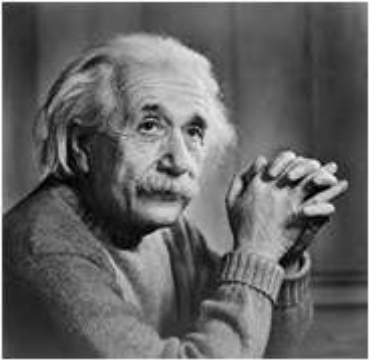
Popularity

RESULT SHEET

Name	Grade
Jeevan	A
John	D
Ram	B
Reena	A
Martin	C+
Sakhsi	A-
Preeti	B+

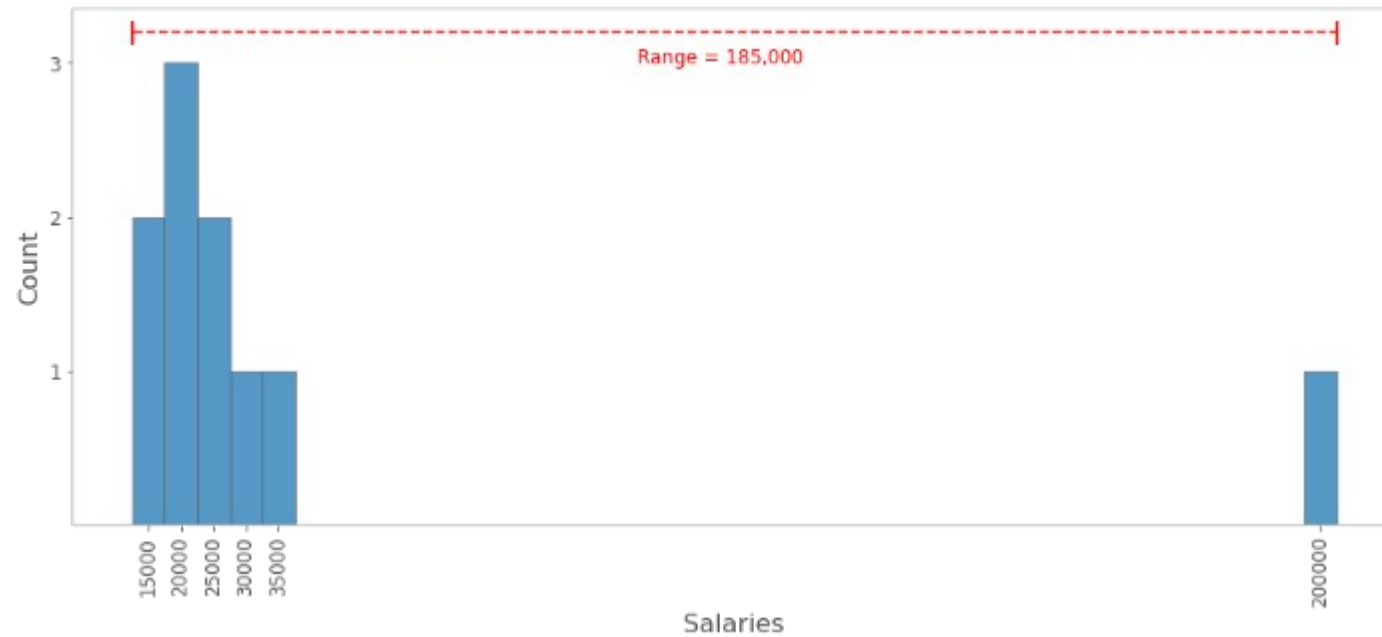# Histogram of Result Sheet

Histogram of Image

Quartile

$15,000 | $15,000 | $20,000 | $20,000 | $20,000 | $25,000 | $25,000 | $30,000 | $35,000 | $200,000

to find the quartiles
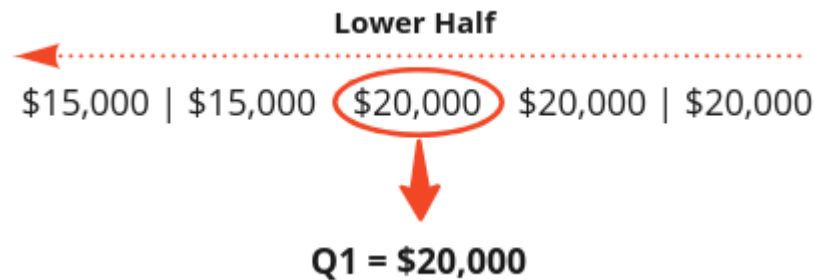
1.Find the median (Q2), slicing the data in two halves

$15,000 | $15,000 | $20,000 | $20,000 | $20,000 | $25,000 | $25,000 | $30,000 | $35,000 | $200,000

Median = $\frac{20,000 + 25,000}{2}$ = $22,500

Lower Half   **Upper Half**

$15,000 | $15,000 | $20,000 | $20,000 | $20,000 ○ $25,000 | $25,000 | $30,000 | $35,000 | $200,000

Q2 = $22,500

- Q1 is the median of the lower half of the data;

Lower Half

$15,000 | $15,000 ($20,000) $20,000 | $20,000

Q1 = $20,000

Q3 is the median of the upper half of the data.

Upper Half

$25,000 | $25,000 ($30,000) $35,000 | $200,000
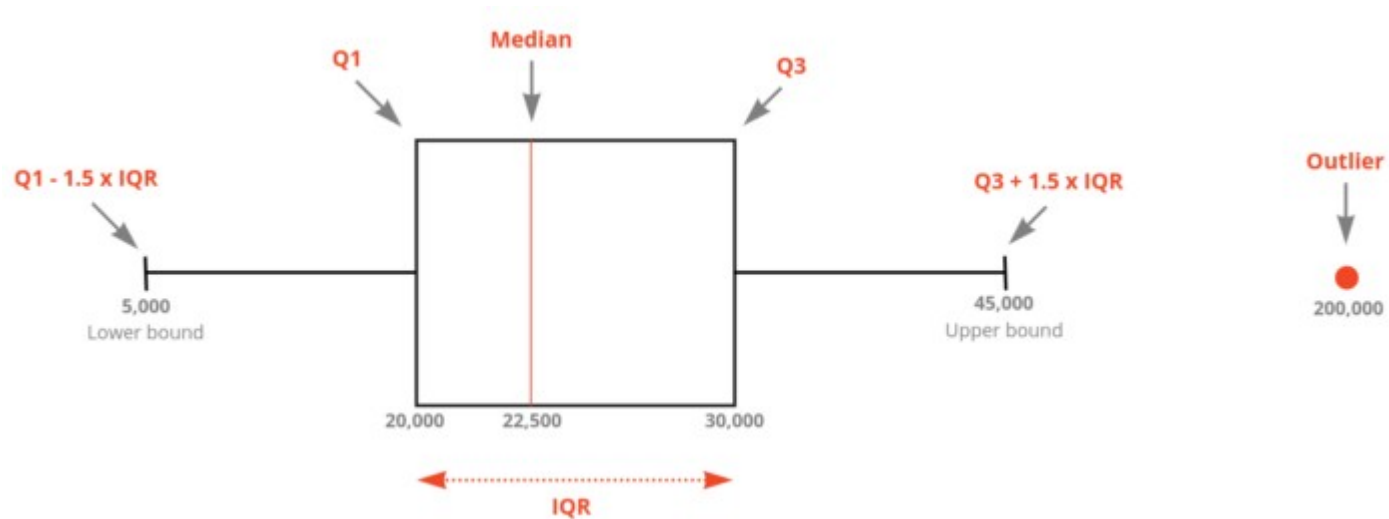
Q3 = $30,000
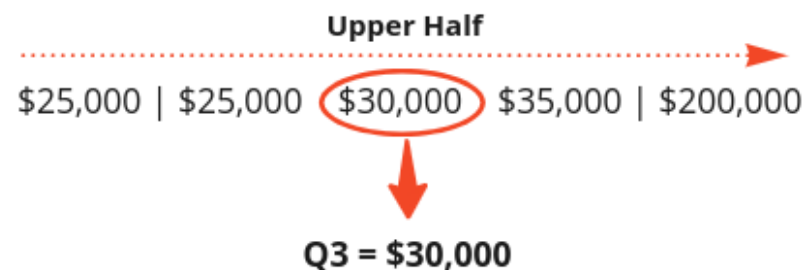
Interquartile Range

Another important concept to bear in mind is the Interquartile Range (IQR). It represents the data between Q1 and Q3.

Box Plots

Box plot is a type of diagram that is great to represent ranges and data dispersion in the set. A box plot displays Q1, Q2, and Q3, as well lower and upper bounds, beyond which lie the outliers.

Anatomy of a Box Plot

Quartile Example -1

Scores for 10 students are:

– 78 80 80 81 82 83 85 85 86 87

Find the median and quartiles:

1. Median= Q2 = M = (82+83)/2 = 82.5

2. Q1 = Median of the lower half, i.e. 78 80 80 81 82, = 80

3. Q3 = Median of the upper half, i.e. 83 85 85 86 87, = 85

- Therefore, IQR = Q3 – Q1 = 85 – 80 = 5

- Additionally, find Min and Max

- Min = 78, and Max = 87

- – We get a five-number summary!

- – Min Q1 Median Q3   Max

- _78   80   82.5   85   87_

Quartile Example-2

PLANET	Days
Venus	56.5
Earth	91.5
Mars	210
Jupiter	1095
Saturn	2555
Uranus	7300
Neptune	14600

PLANET	DAYS
Venus	56.5
Earth	91.5
Mars	210
Jupiter	1095
Saturn	2555
Uranus	7300
Neptune	14600

PLANET	DAYS	
Venus	56.5	
Earth	91.5	
	150	Q1
Mars	210	
Jupiter	1095	Q2
Saturn	2555	
	4928	Q3
Uranus	7300	
Neptune	14600	

PLANET	DAYS
Venus	56.5
Earth	91.5
	150
Mars	210
Jupiter	1095
Saturn	2555
	4928
Uranus	7300
Neptune	14600

IQR (bracketing 150, 210, 1095, 2555, 4928)

PLANET	DAYS
Venus	56.5
Earth	91.5
	150
Mars	210
Jupiter	1095
Saturn	2555
	4928
Uranus	7300
Neptune	14600

Lower
IQR
Upper

Median: 1,095

Days