STATISTICS

Numbers which are collected in order to provide information about something.

Also defined as the science of collecting and studying numbers

Types of Statistics:

1) Descriptive Statistics
2) Inferential Statistics

- Descriptive Statistics: in descriptive statistics the data is described in a summarized way.
- The summarization is done from the sample population using different parameters such as **Mean or Standard Deviation.** Descriptive statistics are a way of using charts, graphs & summary measures to organize represent & explain a set of data.

Data is typically arranged and displayed in table or graphs summarizing detials such as histogram , pie charts , bars scatter plots etc.

Descriptive statistics are just descriptive they do not require generalization beyond data collected.

Example:

Age

10
13
18
22
44
88
90
3
22
10
50

Max Age: 90
Min Age: 3
Avg Age: 33.63

Inferential Statistics: In inferential, we try to interpret the meaning of differential statistics, After the data has been collected,analyzed and summarized we use inferential statistics to describe the meaning of the collected data.

- Inferential Statistics uses the probablity principle to assess whether the trend contained in the research sample can be generalized to the larger population from which the sample usually comes.
- Inferential Statistics are intended to test hypothesis and investigate the relationship between variables and can be used to make population predictions
- Inferential Statistics are used to draw conclusions and inferences.

Population: It is actually a collecion of a set of individual or objects or events whos properties are to be analyzed.

Sample: It is a subset of Population.

Mesaure of Central Tendency: (MCT) : It is also known as summary statistics that is used to represent the centre point of a particular value or a data set or a sample set.

1) **Mean (Average)**

Formula : sum of all the items / total no of items

Cars	Milage	Cylinder
Swift	21.3	3
BMW	20.8	4
Audi	18	5

Q: **Average Milage of all cars**

21.3 + 20.8 + 18

60.1 / 3

=> 20.03

Avg of cylinder: 12/3 => 4

2) Median

Cars	Milage	Cylinder
Swift	21.3	3
BMW	20.8	4
Audi	18	5
Eriga	15	4

In case of even numbers

Step 1: Arrange in Ascending order 15 18 20.8 21.3

18 + 20.8

38.8 / 2

= 19.4 --> Median Value

3 4 4 5

4 + 4

8 / 2

4 ==> Median value

IN CASE OF ODD NUMBERS

AGE

10
20
30
40
50
60
70

MEDIAN => 40

Mode: (finds out which is the most repetitive record in the data set)

Age

10
2
3
6
4
2
4
2
7
7
10
4
2

10 – 2

2 – 4

3 – 1

6 – 1

4 - 3

7 – 2

Mode: 2