

## # STATISTICS :-

STATISTICS is the process of collecting, analyzing, interpreting and drawing conclusions from data.

- **COLLECTING**: gather data by surveys, experiments or records.
- **ANALYZING**: summarize data with averages, counts & charts.
- **INTERPRETING**: explain what the summary reveal.
- **DRAWING CONCLUSION**: make decisions or prediction based on findings.

### → EXAMPLE :-

Are dentists afraid?

[INFERENTIAL STATISTICS]

- ↳ 4 OUT OF 5 dentists recommend Dentine.
- ↳ Almost 85% of men and 35% of women are fitness influencers. — PERCENTAGE
- ↳ There is a 40% chance that in a room full of 30 people that at least two people will share the same birthday. — PROBABILITY
- ↳ The average score of the students in the math TEST was 75 OUT OF 100. — AVERAGE
- ↳ The average monthly sales of the company increased by 10% compared to the previous year. — AVERAGE

STATISTICS

DESCRIPTIVE

INFERENTIAL

## 1. DESCRIPTIVE STATISTICS :-

- mainly involves collection, analysis and interpretation of data.
- PRIMARY GOAL :- understanding main features of data.

So descriptive statistics involves ORGANIZING & SUMMARIZING OF data to understand its main features which includes the use of graphs, tables and descriptive measures [TOOLS] like • average (mean, median, mode),  
• variations (spread of data)  
(Range, Variance, SD) &  
• PERCENTILE

## 2. INFERRENTIAL STATISTICS : Draws conclusion from sample

- In simple terms inferential statistics is about looking at a small portion of data, like a SAMPLE, and making educated guesses or conclusions about a larger group known as POPULATION.
- It helps us predict things or understand relationships in data, even if we don't have all the information.

Imagine you survey a few handful of people about their FAVOURITE FRUIT. From those few responses, you INFER the FAVOURITE FRUIT of the ENTIRE population.  
It's all about making predictions or generalizations from a small sample to a larger group / population.

→ DS और IS ~~inter~~-related. जब हमी हमी DATA मिलता है DS का USE करके उसकी समाप्ति है / Summarise करते हैं और Based on that summary IS के method को choose करते हैं, कि कौन सा method apply करना है।

→ Methods used to draw conclusion from data include;

- CONFIDENCE INTERVALS
- ESTIMATION
- HYPOTHESIS TESTING