STATISTICS IN
Data Science

Today's Agenda:

1-What is Statistics

2- What is Data

3-Types Of Statistics

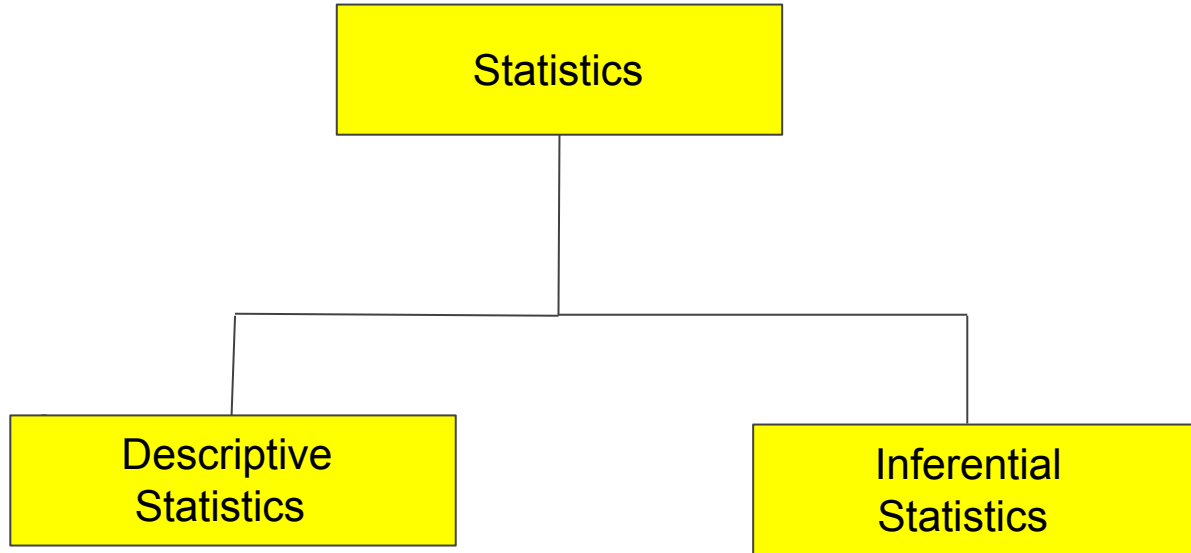4-Population and Sample

5- Sampling Techniques

What is Statistics

Statistics is the science of collecting , organizing and analyzing Data

Data is used for better Decision Making

Types Of Statistics

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                    ┌─────────────────┐
                    │   Statistics    │
                    └────────┬────────┘
                             │
              ┌──────────────┴──────────────┐
    ┌─────────────────┐           ┌─────────────────┐
    │   Descriptive   │           │   Inferential   │
    │   Statistics    │           │   Statistics    │
    └─────────────────┘           └─────────────────┘
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Descriptive Statistics

It Consist of Organizing and Summarizing Data.

Inferential Statistics

It is a technique where we use data to form conclusions

Example of Descriptive Statistics:

- Marks of students in class with respect to percentage

  { 72, 82, 71, 64, 52....}

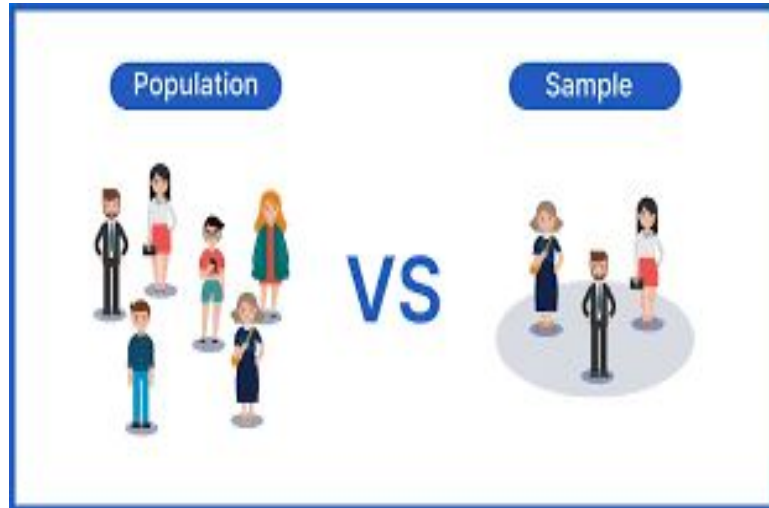Q) What Type of Question comes in your mind with respect to Descriptive Statistics?
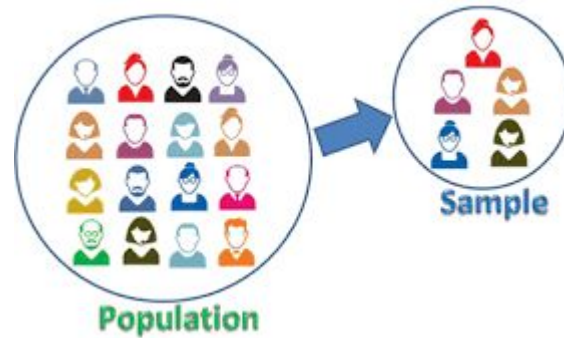
Question

Q) What Type of Question comes in your mind with respect to Inferential Statistics?

Population and Sample

Suppose there are Five different classrooms in the college and we have taken the data from any one classroom, So, 5 is my Populationa and 1 is my Sample

.

Population

Sample

Elections in Karachi

In Every Scenario we will collect sample randomly??

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Types Of Sampling

- Simple Random Sampling
- Stratified Sampling
- Systematic Sampling
- Convenience Sampling

Simple Random Sampling

Every member of a population has an equal chance of being selected for the sample.

Stratified Sampling

It is a technique where the population is split into groups

Systematic Sampling

From the population we pick **nth** individual for the sample

Convenience Sampling

Domain Expert Survey

What type of Sampling we can use for Election exit poll??

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We are conducting surveys on basis of Gender (male and female). What kind of sampling technique we can use?

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We want to test a medicine what kind of sample techniques we can use?

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Suppose we are doing survey regarding different roles of Data Science in which we will do survey only with Data Scientist then what kind of technique we will use??