

III Statistics - Notes

1. What is Statistics?

- **Definition:** Statistics is the branch of mathematics that deals with the collection, organization, analysis, interpretation, and presentation of data.
 - **Purpose:** Helps in making informed decisions based on data.
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2. Types of Variable

1. Nominal
 2. Ordinal
 3. Numerical
 4. Categorycal
 5. Interval
 6. Ratio
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3. Population and Sample

a. Population

- The complete set of individuals or items under study.
- **Example:** All students in a university.

b. Sample

- A subset of the population selected for analysis.
 - **Example:** 100 students selected from the university for a survey.
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4. Sampling Techniques with Definitions

a. Random Sampling

- Every member has an equal chance of being selected.
- *Example:* Lottery method.

b. Systematic Sampling

- Select every k th member from a list.
- *Example:* Every 10th person on a student list.

c. Stratified Sampling

- Population divided into subgroups (strata), then sampled from each group.
- *Example:* Selecting students from different departments.

d. Cluster Sampling

- Population divided into clusters; entire clusters are randomly selected.
 - *Example:* Randomly selecting classrooms, then surveying all students in those classes.
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