INTRODUCTION TO STATISTICS FOR DATA SCIENCE

What is Statistics?

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Steps to learn from data

- Defining the problem

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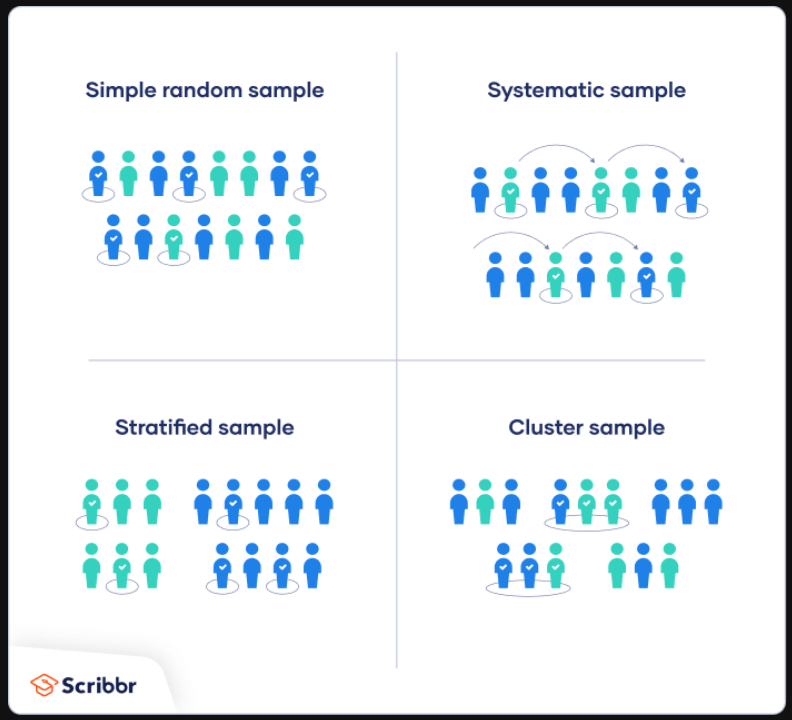
Steps to learn from data

- Defining the problem
- Collecting the data
- Summarizing the data
- Analyzing the data, interpreting the analyses, and communicating the results.

Population and Sample

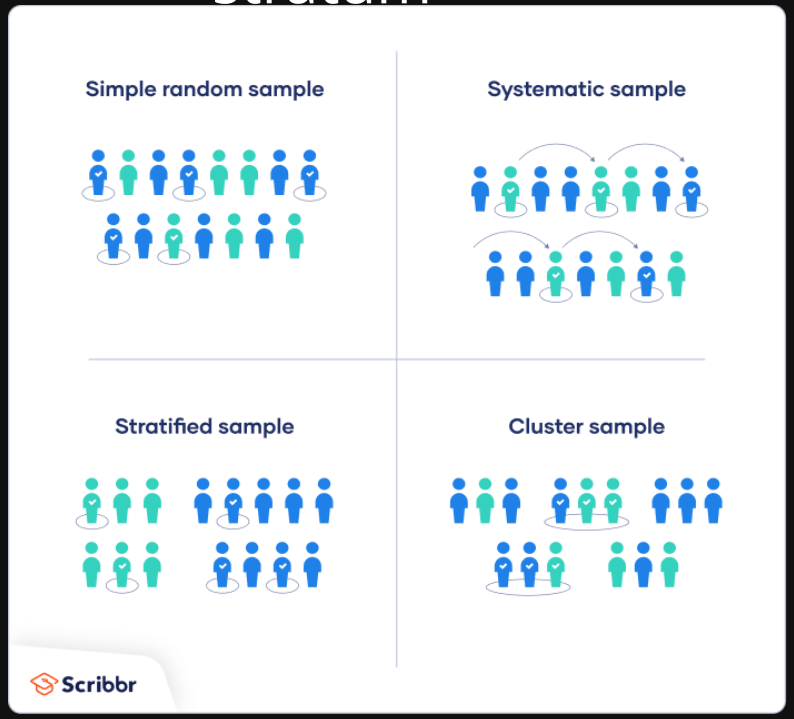
Types of Sampling

1. Simple random sampling: Each case is equally likely to be selected



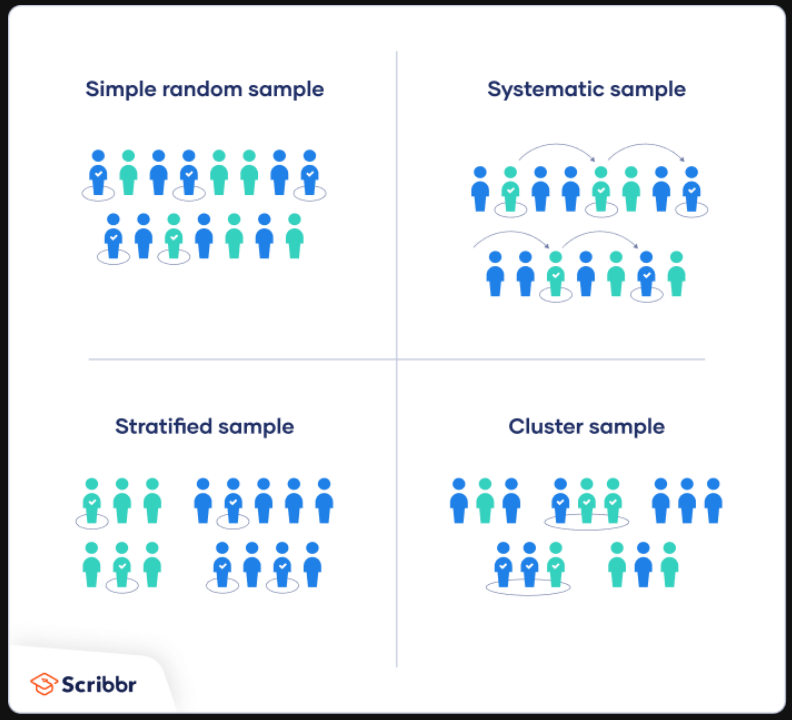
Types of Sampling

2. Stratified Sampling: Divide the population into homogeneous strata. Then, randomly sample from within each stratum



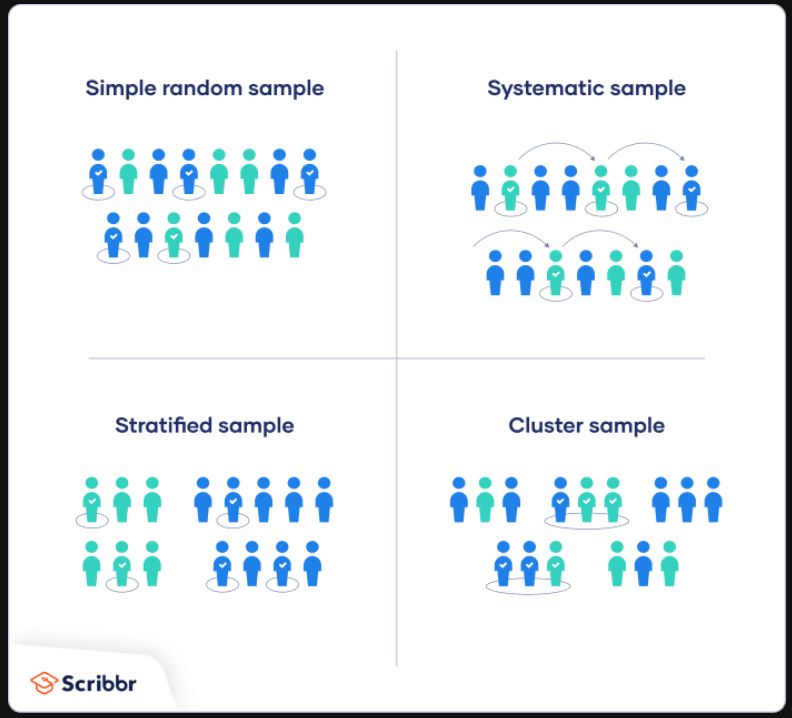
Types of Sampling

3. Cluster sampling: Divide the population into clusters. Then, randomly sample a few clusters and sample all observations within these clusters



Types of Sampling

4. Systematic Sampling: Select observation at a regular interval determined in advance.



Types of Statistics

- Descriptive Statistics
- Inferential Statistics

Data Collection Process

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  - Continuous: take on an infinite number of values within some given range(amount of water in a container)
  - discrete: take on a specific set of numeric values (num of subscribers)

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  - Nominal: Gender
  - Ordinal: Level of Education