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key points on population & sample:

- Populations are larger than samples.
- Samples should be representative of population.
- Samples allow for easier, faster & less costly data collection.

* Sampling Techniques:

1. Simple Random Sampling -

In population all the records have same probability to become a sample.

- Every member of population (N) has an equal chance of being selected for sample (n).

Ex: Avg. height of Indian people

2. Stratified Sampling -

Where the population (N) is split into non-overlapping groups (strata).

Ex: Avg. height of Indian men & women.

gender \leftarrow male
female

Ex: 0-20 21-40 41-60 61-80

3. Systematic Sampling -

(suitable for continuous data)

From population we will collect every n^{th} sample.

(N) $\rightarrow n^{\text{th}}$ individual

Ex: In mall people doing survey on modernisation so far every 8th person, they saw their details are collected.

4. Convenience Sampling -

Collecting data of only domain expertise.

Ex: We are doing survey on data science means we will collect data from data scientist, data science expertise and who have knowledge of