

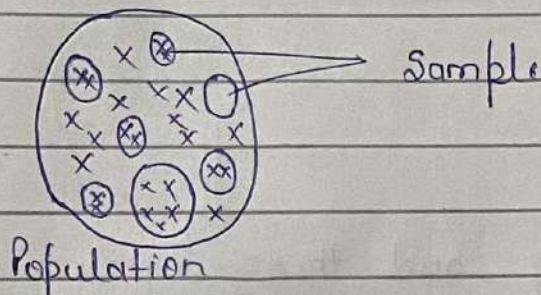
## Population and Sample

→ Population is the group that we are interested in studying. It is represented by  $N$ .

→ A sample is the subset of population. It is represented by  $n$ .

Eg: \* EXIT POLL {Media} → which party will win?

STATE A



\* Average height in a state.

\* Sampling Techniques :

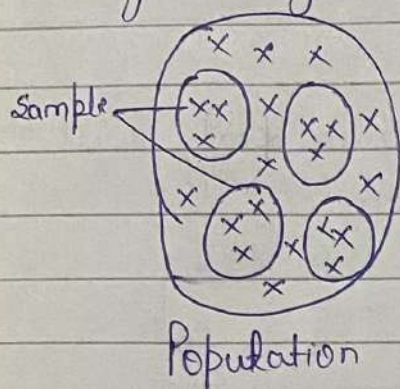
The goal of sampling is to create a sample that is representative of entire population.



→ Types of sampling :

① Simple Random Sampling

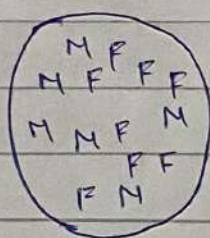
when performing simple random sampling every member of population ( $N$ ) has an equal chance of being selected.



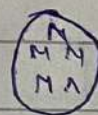
It is randomly sampling from the population.

② Stratified Sampling

Stratified means layering and these layerings are non-overlapping groups.



Stratified  
Sampling



Sample 1



Sample 2

Population

③ Systematic Sampling :

Suppose conducting a survey standing outside a mall and asking every  $n^{\text{th}}$  person for a survey.



④ Convenience Sampling : Voluntary Response sampling  
If I want to survey on Data science,  
then in this case, I will ask those person  
who are expert in the field of data science.

\* Scenarios to use particular sampling Technique.

- ① EXIT POLL → Random sampling
- ② Disease Information → ~~stratified~~ convenience sampling
- ③ Household expenses → stratified sampling