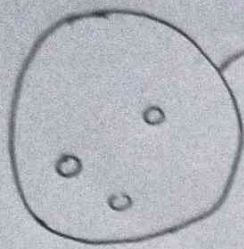


Population vs sample



[look people]

Say you need to collect weights for all people

Say I take 10k sample \rightarrow we do tests and deduce the weight of population

Population $\longrightarrow N$

Sample $\xrightarrow{\text{Notation}} n$

Measure of central tendency - N (population) n (sample)

① Mean

$$\mu = \frac{\sum_{i=1}^N x_i}{N}$$

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n}$$

② Median

Step 1 \rightarrow Sort the value

Step 2 \rightarrow get central element \rightarrow
even number of element \rightarrow
Take avg. of middle 2
odd number of element
Take middle element

③ Mode

Select element which has max frequency

eg: $\{4, 3, 2, 4, 3, 1, 7, 4, 5\}$

mode is 4

if 2 element has highest frequency
both of them are considered mode