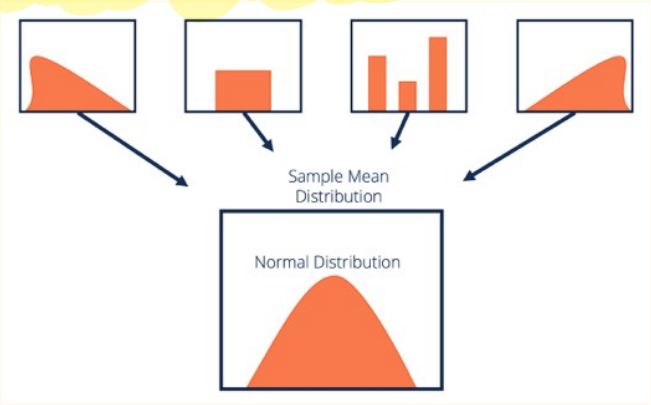
Central Limit Theorem:



Statement: Given a dataset with unknown distribution, the sample means of the dataset will approximate to Normal.

Conditions:

1. sample size (n) should be sufficiently large ($n \geq 30$)
2. samples should be independently & identically distributed. (iid)
   - ↳ random variables
3. population distribution should have a finite variance.

Notation:

$$\bar{X} \sim N\left(\mu, \frac{\sigma}{\sqrt{n}}\right)$$

$\bar{X}$ = sample mean
n = sample size
μ = population mean
σ = population std

$n < 10\%$ population size

Ex: exit polls of election.