Random Variables

$\hookrightarrow$ variables that can take different values depending upon the outcome of any experiment

→ Discrete Random Variables $\nearrow$ Rolling a dice

→ Continuous Random Variables
$\downarrow$
temp of a room

Probability Distribution function

PDF

* Probability

→ Density function

Continuous RV

{
  * Normal Distribution
  * Log Normal Distribution
}

PMF

Probability

Mass

function

Discrete RV

{
  → Bernoulli Distribution
  → Binomial Distribution
}

PDF

$$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

→ Normal Distribution

$\mu \rightarrow$ mean

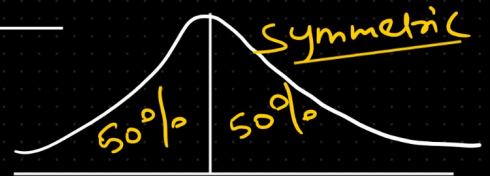$\sigma \rightarrow$ Standard deviation

Age

24 _____

27 _____

23 _____   Normal →

34 _____   Distribution

47 _____

Normal Distribution

symmetric

50% 50%

mean =

median =

mode

Empirical Rule ← detect the outliers

68-95-99.7 Rule

68.27%

95.45%

99.73%

Population (μ

σ

Sample ($\bar{x}$

(S
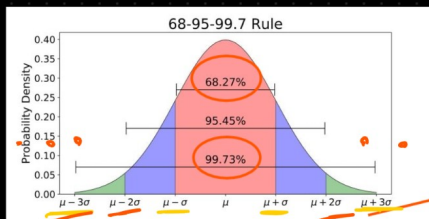
Z-score

Population

Sample Short
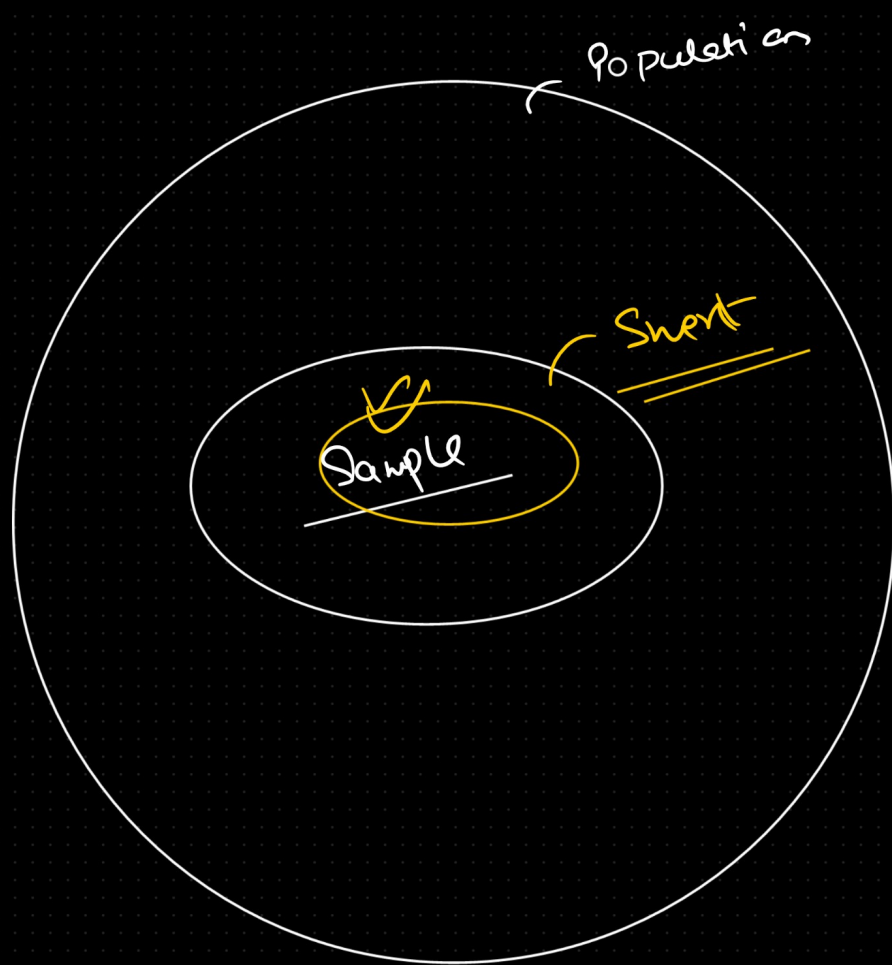
→ Population & Sample

→ CLT

→ Hypothesis Testing