Hypothesis testing

Hypothesis testing is a form of statistical inference that uses data from a sample to draw conclusions about a population.

Steps:

- Make Initial Assumptions
- Collect evidence through experiment.
- Reject or accept null Hypothesis

Example: Coin is fair or not

- Null Hypothesis (Ho): Coin is fair
- Alternate Hypothesis (H1): Coin is not fair
- Experiment: Toss the coin for 100 times

Terms:

- **Confidence Interval or Decision Boundary**:
- **Significant value**:
- **P value**: It is the probability for null hypothesis to be true

$$Z = \frac{\hat{p} - p0}{\sqrt{\frac{p0(1-p0)}{n}}}$$

Where,

- $\hat{p}$ =Sample Proportion
- P0 = assumed population proportion in the null hypothesis
- N = sample size