Notes on Probability in Coin Tossing

1. Introduction to Probability:

- Probability is a branch of mathematics that deals with the likelihood of events occurring in a random experiment.
- In the context of coin tossing, probability refers to the chance of obtaining a particular outcome (heads or tails) when flipping a fair coin.

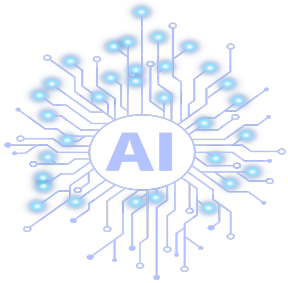
2. Fair Coin:

- A fair coin is one that has an equal chance of landing heads or tails on each toss.
- In a fair coin, the probability of getting heads is 0.5 (50%) and the probability of getting tails is also 0.5 (50%).

3. Basic Probability Concepts:

- The probability of an event ranges from 0 to 1, where 0 means the event is impossible, and 1 means the event is certain.
- The sum of probabilities for all possible outcomes in a given experiment is always equal to 1.

4. Coin Toss Probabilities:



- Probability of getting heads (H): P(H) = 0.5 or 50%
- Probability of getting tails (T): P(T) = 0.5 or 50%

5. Probability of Multiple Tosses:

- When tossing a fair coin multiple times, each toss is independent of the others.
- The probability of obtaining a specific sequence of outcomes (e.g., HHTHT) is equal to the product of individual probabilities. For instance, P(HHTHT) = P(H) * P(H) * P(T) * P(H) * P(T).

6. Trust Table:

- The trust table is a probability distribution table that summarizes the probabilities of different outcomes for a specific random experiment, such as coin tossing. It presents the probabilities of each possible outcome in a clear and organized format.

9. Conclusion:

- Understanding probability in coin tossing helps us make informed decisions in various scenarios and is a fundamental concept in probability theory and statistics. Whether for games, experiments, or real-life applications, probability calculations are invaluable tools for predicting outcomes in coin toss experiments.