Probability

1) Introduction
2) Addition Rule (For mutually exclusive event)
3) Addition Rule (For non mutually exclusive event)
4) Multiplication Rule (Independent & dependent events)

Probability

It is about determining the likelihood of can even.

Example Toss a coin {H, T}

Pr(H) = 1/ 2 = 50%
Pr(T) = 1/2 = 50%

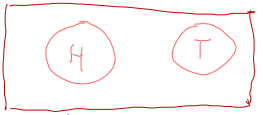
Rolling a dice {1,2,3,4,5,6,7}

Pr(x=1) = 1/ 6 = 0.1666

Mutual exclusive event

Two events are mutually exclusive if they cannot ocurres of the same

Example
Toasing a coin
You only get H or T, not both at the same time.



$Pr(H \text{ or } T) = Pr(H) + Pr(T)$ {additive rule for mutual exclusive events

$Pr(H) = \frac{1}{2} \quad Pr(T) = \frac{1}{2} \quad Pr(H \text{ or } T) = \frac{1}{2} + \frac{1}{2} = 1$

Rolling a dice $\{1, 2, 3, 4, 5, 6\}$

$Pr(1 \text{ or } 5)$ $\quad Pr(1) = \frac{1}{6} \quad Pr(5) = \frac{1}{6}$

$Pr(1 \text{ or } 5) = \frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$

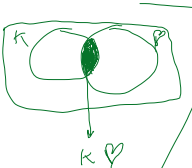
2) No mutual exclusive events
Which are two or more events that can happen at the same time and share common outcomes.

Examples: Taking a car from the deek

total cards 52

$Pr(K \text{ or } ♥) = Pr(K) + Pr(♥) - P(K \text{ and } ♥)$

$= \frac{4}{52} + \frac{13}{52} - \frac{1}{52}$



$= \frac{16}{52}$

$Pr(K \text{ or } ♥)$ → Non mutual exclusive event