Multiplicacion Rule {Independent and dependent events}

2 events are independent if they do not affect one another.

Example: Tossing a Coin {H and the Tails}

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

Example: Rolling a dice

Pr(1) = 1 / 6 Pr(2) = 1 / 6

Dependent events

2 events are dependent if they effect each other.

Example
Take a king from the deek and then the queen card from the deek.

Number of the card 52

Pr(k) = 4 / 52 Pr(Q) = 4 / 51

Multiplication Rule

Independent event {Tossing a coin}

$$Pr(H \text{ and } T) = Pr(H) * Pr(T)$$

$$= \frac{1}{2} * \frac{1}{2} = \frac{1}{4}$$

Dependent Event

Conditional probability

$$Pr(K \text{ and } Q) = P(K) * Pr(Q/K)$$

$$= \frac{4}{52} \times \frac{4}{51}$$