Bernoulli Distribution

→ single trial

→ The trial can result in one of 2 possible outcomes (success & failure)

→ $p(\text{success}) = p$

→ $p(\text{Failure}) = 1-p$

$$P(X = x) = p^x (1-p)^{1-x}$$

$\mu = p$ → Mean

$\sigma^2 = p(1-p)$ → Variance

Binomial Distribution

→ There are n independent trials

→ Each trial can result in 2 possible outcomes.

$$P(X = x) = \binom{n}{x} p^x (1-p)^{n-x}$$

$$\mu = E[X] = np$$

$$\sigma^2 = np(1-p)$$