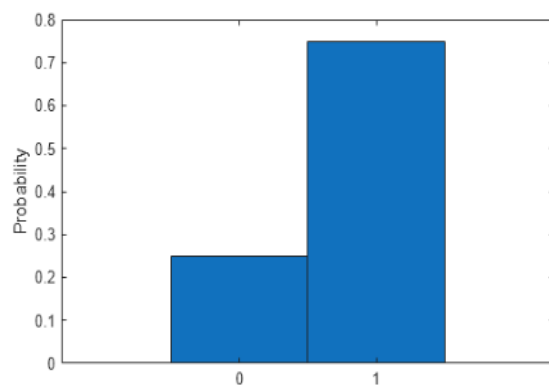


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1. Bernoulli Distribution

- It is the simplest form of discrete Probability distribution and models a random experiment with exactly 2 outcomes.
- Success is denoted by P
- Failure is denoted by $1-P$
- Only one trail



2. Binomial Distribution

- It generalizes the Bernoulli Distribution to multiple trials.
- It models the number of success in a fixed number of independent and identical Bernoulli trials.
- Formula:

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

Where:

- $P(X = k)$: Probability of exactly k successes.
- $\binom{n}{k}$: The number of combinations of n trials taken k at a time.
- p : Probability of success in a single trial.
- $1 - p$: Probability of failure in a single trial.
- n : Total number of trials.
- k : Number of successful trials.

3. Poisson Distribution

- It is used to model the number of events that occur in a fixed time interval.
- Space can occur independently the parameters.
- λ represents the avg number of event in the interval.
- K is the no of arguments.
- Formula:

$$P(X = k) = \frac{\lambda^k e^{-\lambda}}{k!}$$