

Poisson Distribution

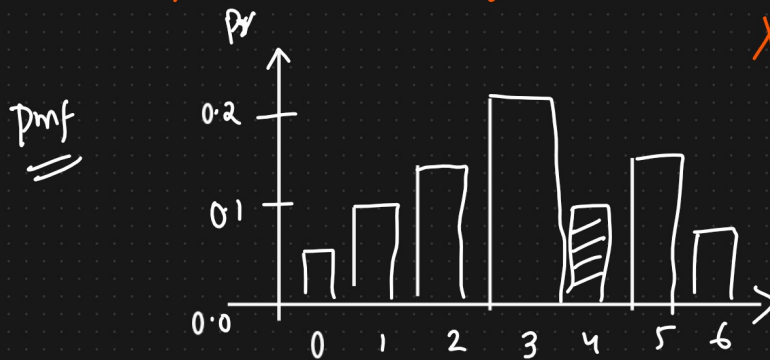
① Discrete Distribution (pmf)

② Describes the number of events occurring in a fixed time interval

Eg: No. of people visiting hospital every hour

No. of people visiting banks every hour

No. of people visiting airport every hour



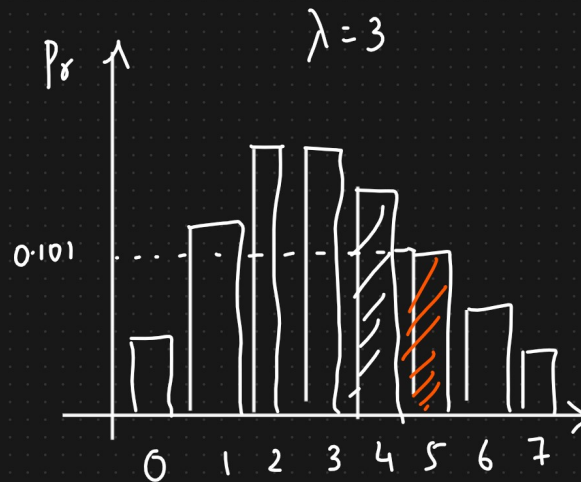
$\lambda = 3 \Rightarrow$ Expected ^{No. of} event to occur at every time interval

pmf

$$P(X=5) = \frac{e^{-\lambda} \lambda^x}{x!}$$

$$= \frac{e^{-3} 3^5}{5!} = 0.101$$

$$\approx 10.1\%$$



$$P(X=4) + P(X=5) = \underline{\hspace{2cm}}$$

Mean And Variance

$$\text{Mean} \Rightarrow E(x) = \mu = \lambda * t$$

$$\text{Variance} \Rightarrow E(x) = \mu = \lambda * t$$

λ = Expected No. of events to occur at every time interval

t = Time Interval