

The Poisson Distribution

(Part E - Probability Distributions)

- The Poisson Distribution is a statistical distribution showing the frequency probability of specific events when the average probability of a single occurrence is known.
- The Poisson distribution is a discrete probability distribution.
- Application of the Poisson distribution enables managers to introduce optimal scheduling systems.
- For example, if the average number of people that rent movies on a friday night at a single video store location is 400, a Poisson distribution can answer such questions as, "What is the probability that more than 600 people will rent movies?".
- One of the most famous historical practical uses of the Poisson distribution was estimating the annual number of Prussian cavalry soldiers killed due to horse-kicks.
- Other modern examples include estimating the number of car crashes in a city of a given size; in physiology, this distribution is often used to calculate the probabilistic frequencies of different types of neurotransmitter secretions.