What is Data distribution ?

- Data distribution is a function that specifies all possible values for a variable and also quantifies the relative frequency (probability of how often they occur).
- Distributions are considered any population that has a scattering of data.
- It's important to determine the kind of distribution that population has so we can apply the correct statistical methods when analyzing it.

Why we use Data distribution ?

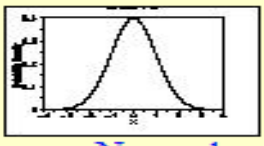
- The basic advantage of data distribution is to estimate the probability of any specific observation in a sample space.
- Probability distribution is a mathematical model that calculates the probability of occurrence of different possible outcomes in a test or experiment. Used to define different types of random variables (Typically discreet or continuous) to make the decision depends on these models.
- Based on random variable category one can use mean, mode, range, probability or other statistical methods.

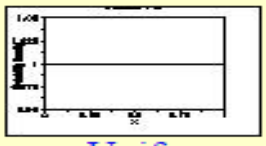
Types of Data distribution :-

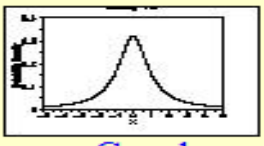
- See Link for details of each type
- Link : *https://www.itl.nist.gov/div898/handbook/eda/section3/eda366.htm*

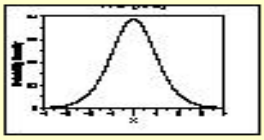
Summary of Data distribution Types :-

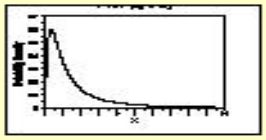
Continuous Distributions

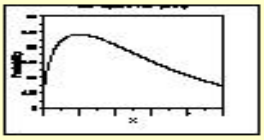

Normal Distribution

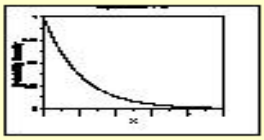

Uniform Distribution

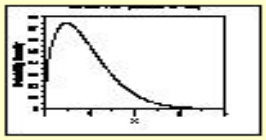

Cauchy Distribution

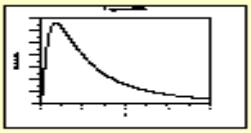

t Distribution

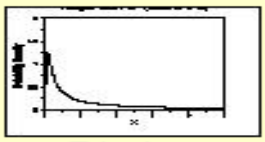

F Distribution

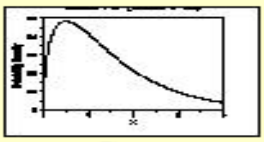

Chi-Square Distribution

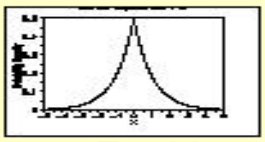

Exponential Distribution

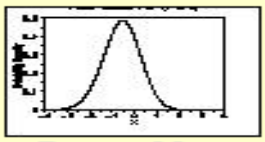

Weibull Distribution

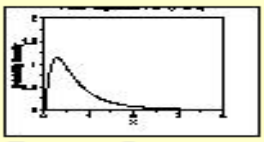

Lognormal Distribution

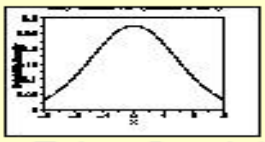

Birnbaum-Saunders (Fatigue Life) Distribution

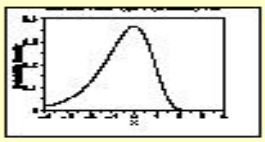

Gamma Distribution

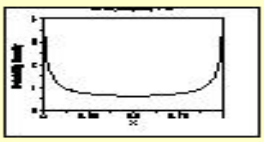

Double Exponential Distribution


Power Normal Distribution

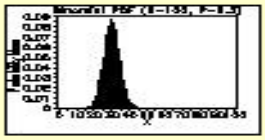

Power Lognormal Distribution

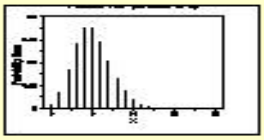

Tukey-Lambda Distribution


Extreme Value Type I Distribution


Beta Distribution

Discrete Distributions


Binomial Distribution


Poisson Distribution