**Descriptive Statistics**

**1. What is the Purpose of Descriptive Statistics?**

Descriptive statistics are used to summarize and describe essential features of a dataset.

The primary purpose is to provide a clear and concise summary that helps in understanding the main characteristics of the data.

**2. Can you explain the difference between Mean, Median, and Mode?**

**Mean** The mean is the average of all values in a dataset. It is calculated by summing up all values and then dividing by the number of observations.

**Median** The median is the middle value when the data is sorted in ascending or descending order. If there is an even number of observations, the median is the average of the two middle values.

**Mode** The mode is the value that appears most frequently in a dataset. A dataset may have no mode, one mode, or multiple modes.

**3.How do you Interpret Standard Deviation of a dataset?**

The standard deviation measures the amount of variation or dispersion in a set of values. A higher standard deviation indicates greater variability from the mean, while a lower standard deviation suggests that values are closer to the mean.

**4.Describe the concept of Skewness in Statistics.**

Skewness measures the asymmetry of a probability distribution. A dataset is positively skewed if the tail on the right side is longer or fatter than the left side, and vice versa for negative skewness. A skewness of 0 indicates a perfectly symmetrical distribution.

**Inferential Statistics**

**5.What is the Main Goal of Inferential Statistics?**

The main goal of inferential statistics is to make predictions or inferences about a population based on a sample of data drawn from that population. It involves generalizing findings from a sample to the larger population.

**6. Explain the difference between Population and Sample.**

Population The entire group of individuals or instances about whom the study is concerned.

Sample A subset of the population that is selected for the actual study. Ideally, the sample should be representative of the entire population.

**7. What is Confidence Interval, and how is it useful in inferential statistics?**

A confidence interval is a range of values derived from a sample that is used to estimate the range within which the true population parameter is likely to fall. It provides a measure of the uncertainty or margin of error associated with the estimate.

**8. Define P-Value.**

The p-value is a measure that helps determine the significance of an observed effect or result in a statistical hypothesis test. A lower p-value suggests stronger evidence against the null hypothesis, leading to the rejection of the null hypothesis in favor of the alternative hypothesis. Typically, a significance level (e.g., 0.05) is chosen to decide whether the result is statistically significant.