**Common Definitions**

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1. **Random Data VS Sample Data**
   1. **Random Data** is values taken or produced with no specific pattern or order.
   2. **Sample Data** is a group of data collected for the population and help us make predictions or inferences about a group of people
   3. The are three types of random sampling methods: **Simple** Random Sampling, **Stratified** Random Sampling, and **Multistage** Random Sampling. Simple Randon Sampling gives each member of the population an equal chance of being surveyed. With Stratified Random Sampling, the population is divided into groups with similar features. Then, candidates are selected randomly from each of these groups. Lastly, Multistage Sampling is the use of two or more simple sampling methods combined.
2. **Descriptive Vs Inferential Data:**
   1. **Descriptive** data **describes features in a dataset** and present it using graphs, pie charts, etc to better understand and **visualize the data**. **Mean, median, and mode** metrics are used to measure central tendencies, while **range, variance and standard deviation** are used to measure variability.
   2. **Inferential** data uses **sample data** to draw conclusions or generalizations about a population. To measure how confident we are about the correctness of the conclusions, **probability and margin of errors** are used.
3. **Qualitative Vs Quantitative Data:**
   1. **Qualitative data** describes characteristics of something and cannot be measured numerically. Colors, shapes, and location of places are examples of qualitative data.
   2. **Quantitative data** is numerical measurements that can be used in calculation such as weight, height and age. It is categorized into discrete and continuous.
4. **Parameter Vs Statistic:**
   1. **Parameteric** is a numerical value representing a population characteristic or feature.
   2. **Statistic** data is a numerical value of a simple characteristic. It is calculated from sample data and used to estimate parameters.
5. **Ordinal Vs Nominal:** Both ordinal and nominal are qualitative types of data.
   1. **Ordinal data** is data where categories can be ordered or ranked. The intervals between the categories may not be equal. Examples include clothes size: Small, Medium and Large.
   2. **Nominal data** is data where the categories do not have a natural order such as a list of countries.
6. **Continuous Vs Discrete:** Both are types of quantitative data.
   1. **Continuous data** is data that can have any value within a given range and can be measured while having an infinite possible values within the specified range. Examples include time, height, and weight.
   2. **Discrete data** is a type of data where there can only be specific, separate values with no intermediate values inside a given range. Number of students in a class is one example of discrete data.