

CHAPTER ONE

Basic Concepts

Introduce several basic vocabulary words used in studying statistics: *statistic, population, variable*.

- **Statistic:** is the science of collecting studies to collect, organize, summarize, analyze, and draw conclusions from data.
- A **variable** is a characteristic or attribute that can assume different values.
- **Data:** are the values that a variable can assume.
- **Random Variable:** variables whose determined by chance.
- **Data set:** Collection of data values.

Branches of statistics

There are two branches:

- 1- **Descriptive Statistic:** consists of the collection, organization, summarization, and presentation of data. For example the average age of the student is 14 years.
- 2- **Inferential statistics:** consists of generalizing from samples to populations, performing estimations and hypothesis testing, determining predictions. For example the relation between smoking and lung cancer.

➤ **Population**

A population: consists of all subjects (human or otherwise) that are being studied.

➤ **Sample**

A sample: is a group of subjects selected from a population.

➤ **Discrete variable**

Discrete variable: Assume values that can be counted.

Examples: number of students present or students' grade level

➤ **Continuous variable**

Continuous variable: can assume all values between any two specific values. They are obtained by measuring.

Examples: height of students in class, weight of students in class, time it takes to get to school, or distance traveled between classes.

➤ **Computer in Statistics:**

