

“INTRODUCTION TO COMPUTER”

INSTRUCTOR: Ms. HAFSA ZAHRA



Learning Objectives

In this Lecture, you will learn about:

- **Computer**
- **Data**
- **Data processing**
- **Information**
- **Characteristics of computer**



Computer

- The word computer comes from the word “compute”, which means, “to calculate”
- Thereby, a computer is an electronic device that can perform arithmetic operations at high speed
- A computer is also called a *data processor* because it can store, process, and retrieve data whenever desired

Computer

- ❖ Computer is an electronic device that accepts data (as input),
- ❖ perform operations on data in Data Processing System,
- ❖ produces the results in the form of information (as output).



1. DATA

“Data is a collection of raw facts, figures, statistics related to an object”.

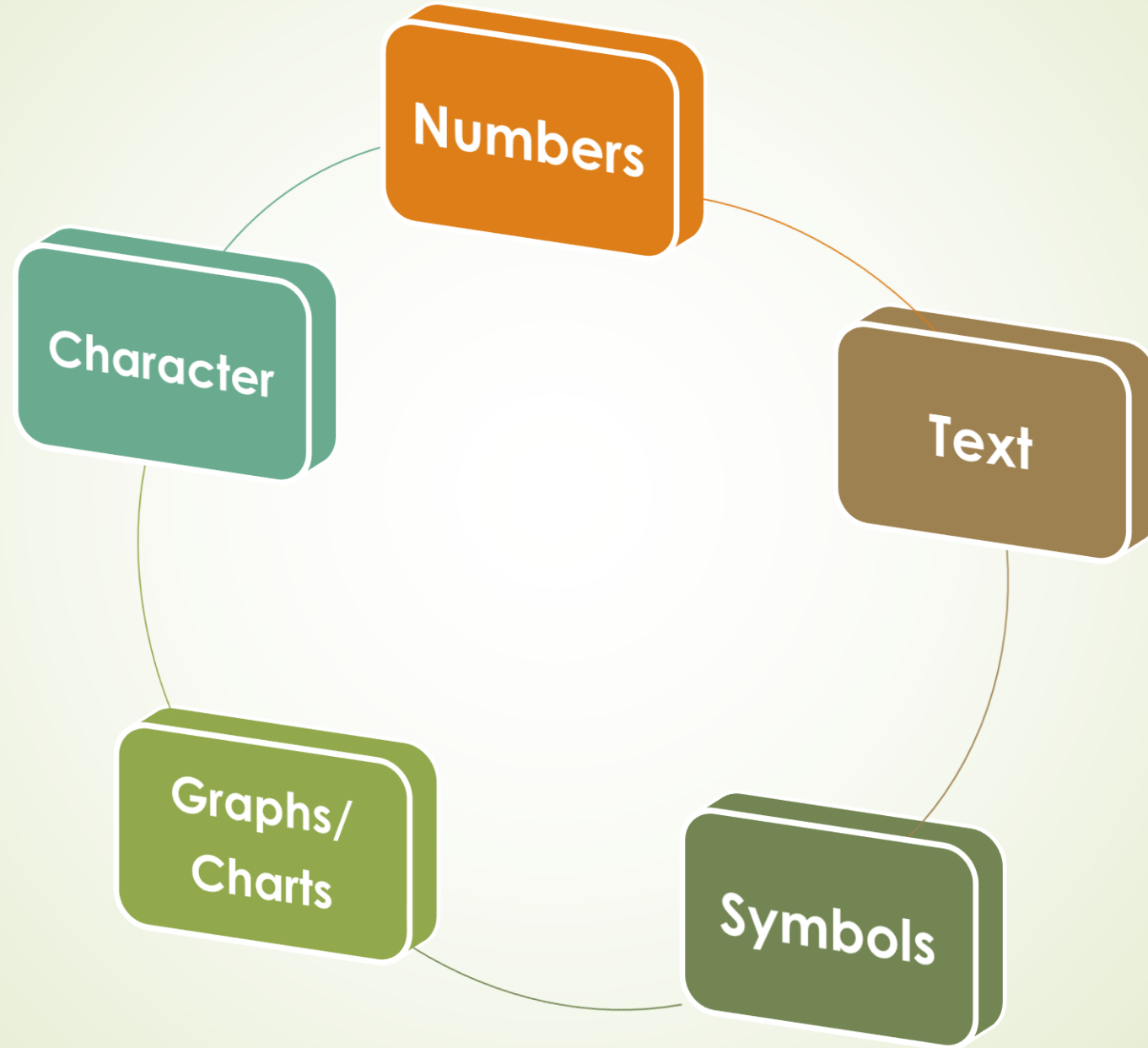
- ➔ **Raw** ➔ unprepared/unprocessed
- ➔ **Figures** ➔ Charts and Graphs
- ➔ **Statistics** ➔ data collection including surveys and experiments.
- ➔ **Facts** ➔ proven with an any evidence.

e.g.: “The earth revolves around the sun”

$$2+2=4$$

1 liter of water weighs 1kg.

Data can be in the form of:



Data is very important in the field of:



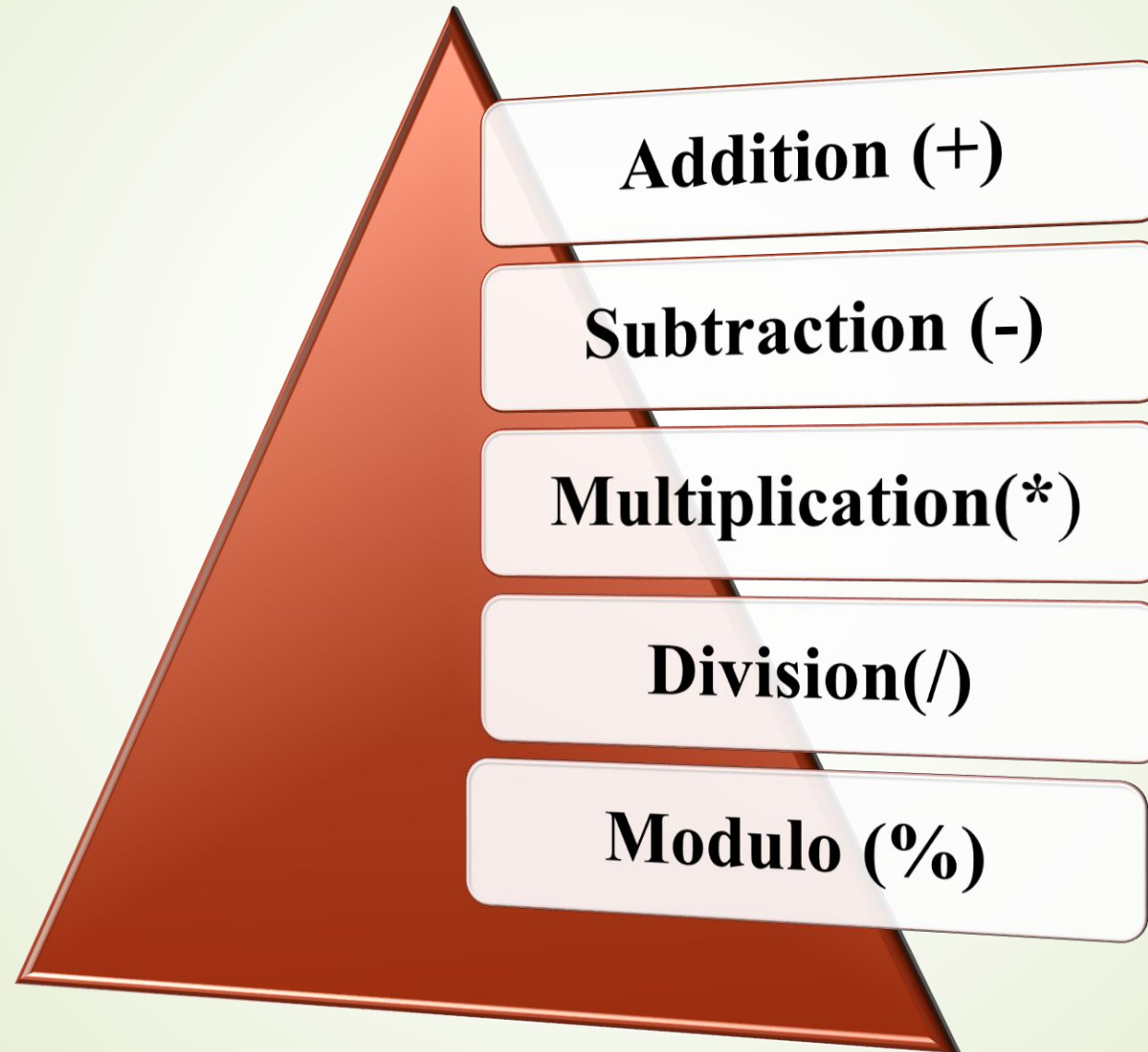
2. DATA PROCESSING

- Data Processing is also known as “Computing”.
- To convert the raw data into useful information by applying important operations on data to get the required output.

➤ Operations include:

1. {
 - ARITHMETIC OPERATIONS
2. {
 - LOGICAL OPERATONS

Arithmetic Operations



Logical operations

➤ Comparison between two values

$a > b$

$a \geq b$

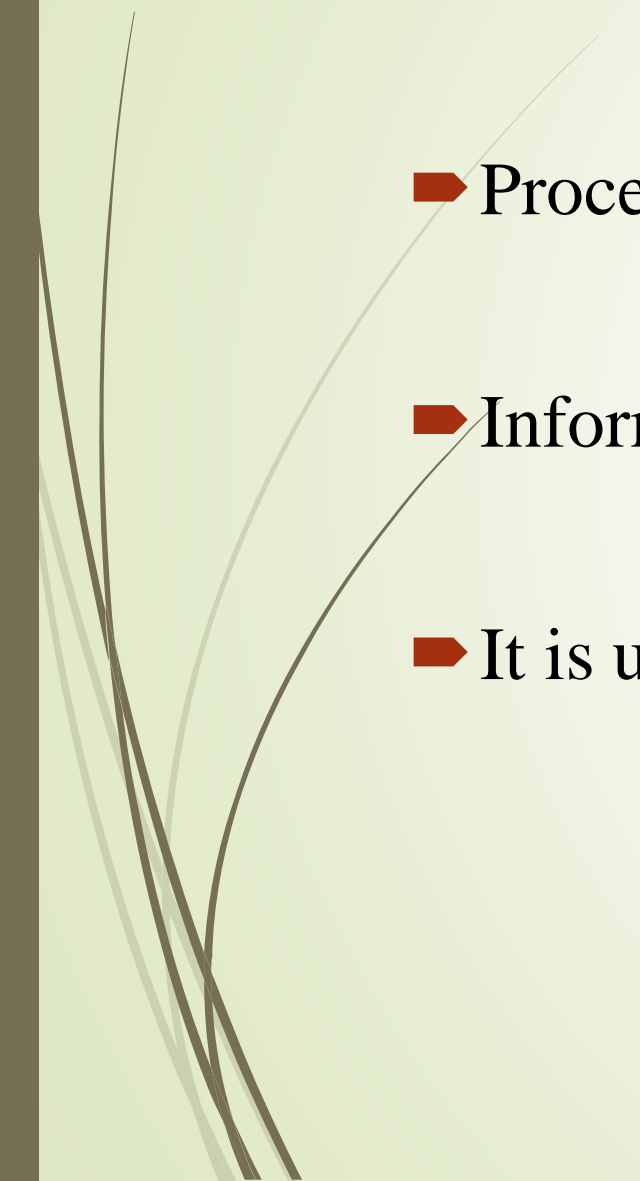
$a < b$

$a \leq b$

$a == b$



3. INFORMATION

- ➡ Processed data is called Information.
 - ➡ Information gives clear meanings.
 - ➡ It is used for decision making.
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Example of Data, Data Processing and Information

Reg#	Student's Name	English (100)	Computer (100)	Mathematics (100)	Total Marks	Obtained Marks	Percentage
1.	Alia	75	80	95	300	250	83%
2.	Haram	80	85	60	300	225	75%
3.	Maria	86	87	75	300	248	82%

Calculation:

$75+80+95=250$ (Addition Operator)

$250*100=2500$ (Multiplication Operator)

$2500/300= 83\%$ (Division Operator)

CHARACTERISTICS OF COMPUTER

- Speed
- Accuracy
- Versatility
- Storage Capability
- Diligence

CHARACTERISTICS OF COMPUTER

1) Automatic:

Given a job, computer can work on it automatically without human interventions

2) Speed:

Computer can perform data processing jobs very fast, usually measured in microseconds (10^{-6}), nanoseconds (10^{-9}) and picoseconds (10^{-12})

Because some calculations that would have taken hours and days to complete. Therefore, that calculations can be completed in a few seconds using the computer.

Example: Calculation and generation of salary slips of thousands of employees of an organization.

CHARACTERISTICS OF COMPUTER

3. Accuracy:

Accuracy of a computer is consistently high and the degree of its accuracy depends upon its design. Computer errors caused due to incorrect input data or unreliable programs

Computer can accurately give the result for given calculations.

e.g. $39+76=115$

4. Versatility:

Computer can perform different of task with the same moment.

e.g. At one moment, user can use the computer to prepare a document and in the next moment, user may play music or print a document.

CHARACTERISTICS OF COMPUTER

5) Power of Remembering:

Computer can store and recall any amount of information because of its secondary storage capability.

It forgets or loses certain information only when it is asked to do so.

6) Storage Capability:

Large volume of data can be stored in computer and also retrieved when required.

i. Primary Storage (Main Memory)

ii. Secondary Storage (Hard Disk, CD, DVD USB, Memory Card)

CHARACTERISTICS OF COMPUTER

7) Diligence:

Computer is free from monotony, tiredness, and lack of concentration. It can continuously work for hours without creating any error and without grumbling.

When used for a longer period of time, the computer does not get tired or fatigued.

It can perform long and complex calculations with the same speed and accuracy from start till the end.

8) No I.Q.: A computer does only what it is programmed to do. It cannot take its own decision in this regard.

9) No Feelings: Computers are devoid of emotions. Their judgements are based on the instructions given to them in the form of programs that are written by us (human beings)



READING ASSIGNMENT

- ➡ i) Who invented a Digital Computer?
- ➡ ii) Write down some well-known early computers?
- ➡ iii) Generation of Computers