

INTRODUCTION TO INFORMATION & COMMUNICATION TECHNOLOGIES.

(Computer Definitions & Basics)

Lecture # 01

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An abstract graphic design featuring several large orange circles of varying sizes. A vertical band on the left side contains a repeating geometric pattern in a light orange color. On the right side, there is a small rectangular inset photograph showing a person's arm and hand, wearing a white long-sleeved shirt and a patterned wristband, resting on a light-colored, textured surface. The overall background is white.



THE DIGITAL REVOLUTION

What is computer literacy?

Computer literacy is the knowledge about computer, If you are computer literate, you have knowledge and understanding of computers and their uses.



WHAT IS COMPUTER?

Definition 1:

- Computer is an electronic device which takes some *input*, *process it*, and *produces output*.

Definition 2:

- Electronic machine operating under the control of instructions stored in its own memory.
- Accepts data
- Manipulates data
- Produces results
- Stores results

These instructions tell the machine what to do.

- Generally, the term is used to describe a collection of devices that function together as a system.

What Is a Computer?

**An electronic machine,
operating under the
control of instructions
stored in its own memory
accepts data
manipulates the data
according to specified
rules
produces results
stores the results for
future use.**



What are data and information?

Data

Collection of raw unprocessed facts, figures, and symbols.

Information

Data that is organized, meaningful, and useful

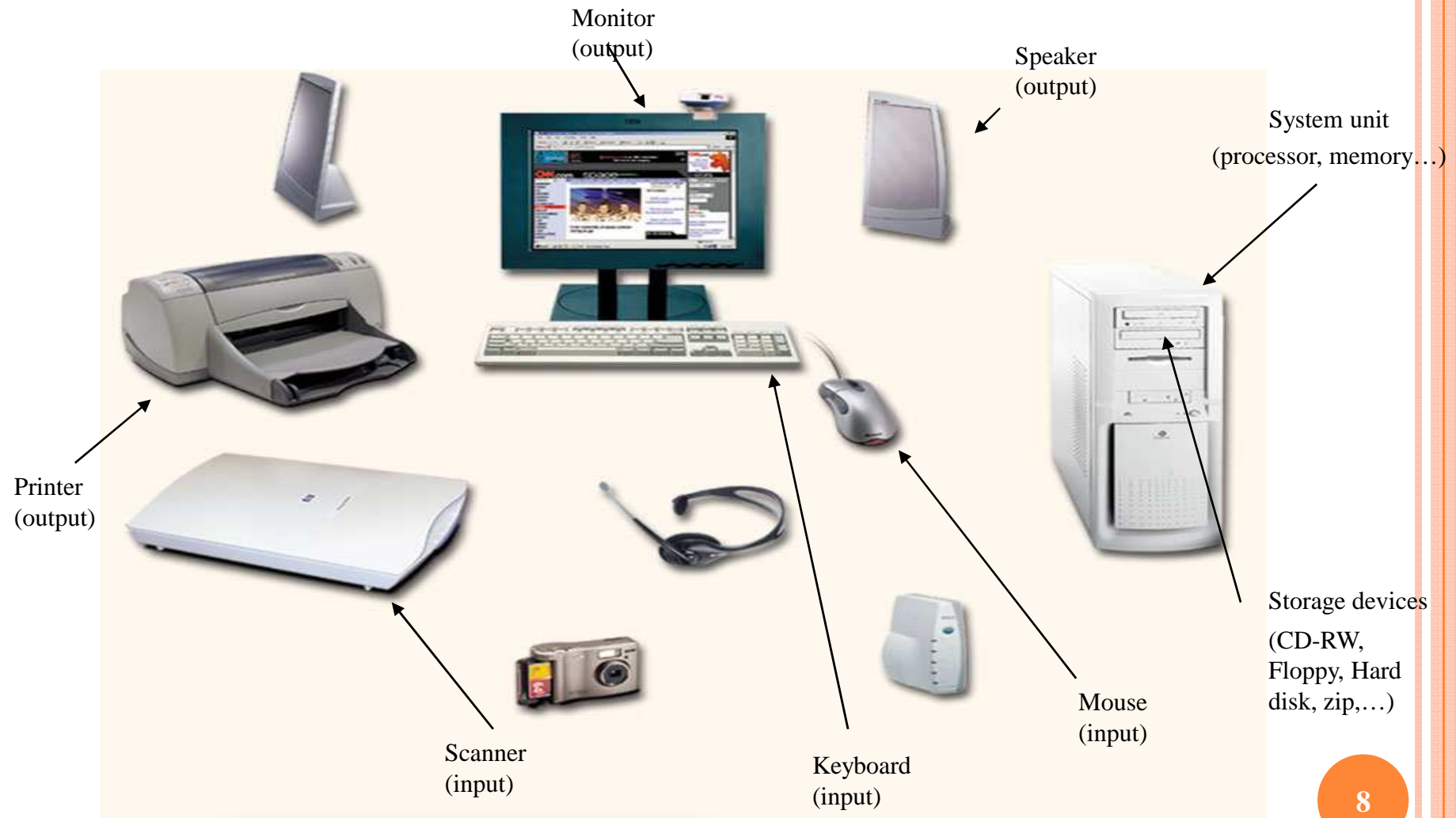


WHO IS USER?

- **Someone that communicates with a computer.**
- **Someone who uses the information it generates.**

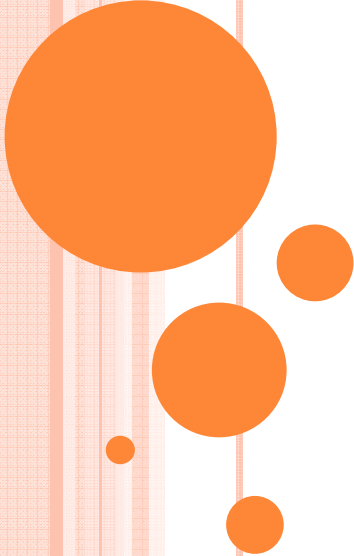


DEVICES THAT COMPRISE A COMPUTER SYSTEM



WHAT DOES A COMPUTER DO?

Computers can perform four general operations, which comprise the information process cycle.

- 
- 1) Input
 - 2) Process
 - 3) Output
 - 4) Storage

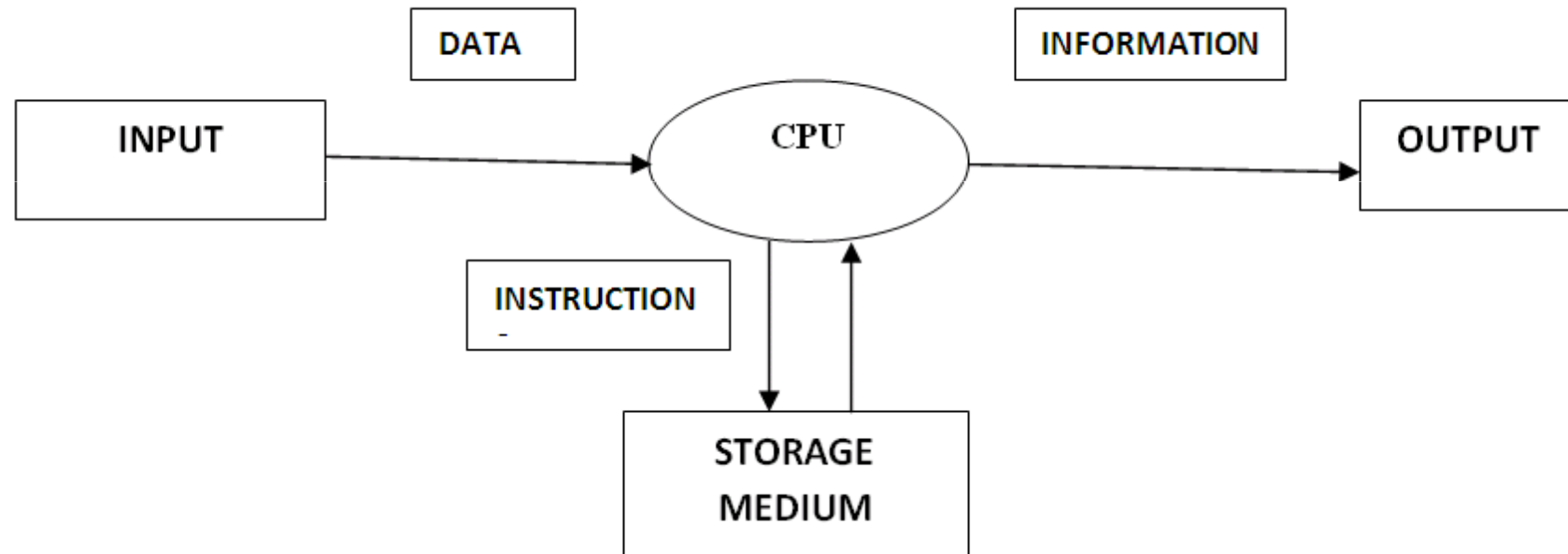
INFORMATION PROCESS CYCLE.

- Computer process data (input) into information (output).
- A Computer often holds data, information, and instruction in storage for future use.
- “The series of input, process, output and storage activities is the information process cycle”.

INFORMATION PROCESS CYCLE (CONT.)

- The sequence of events in processing information, which includes:
 1. **Input**—entering data into the computer.
 2. **Processing**—performing operations on the data.
 3. **Output**—presenting the results.
 4. **Storage**—saving data, programs, or output for future

GRAPHICAL REPRESENTATION OF INFORMATION PROCESS CYCLE



INFORMATION PROCESS CYCLE (CONT.)

1. INPUT

- Input is any data or instructions entered to the computer.
- Input can be in the form of audio, video and graphics instructions.
- Instructions can be
 - Programs
 - Commands
 - User response

INFORMATION PROCESS CYCLE (CONT.)

1. INPUT WITH INSTRUCTION CYCLE.

What are two types of inputs:

- Data

A collection of raw unprocessed facts, figures, and symbols.

- Instructions

- a) Programs
- b) Commands
- c) User responses



1. INPUT WITH INSTRUCTION CYCLE.(CONT.)

a) Programs

Program tells a computer what to do and how to do? These are written instructions in some specific language. (languages will be describe future) for example time card program installed in hard disk for student attendance / presence as shown in previous slide.

1. INPUT WITH INSTRUCTION CYCLE.(CONT.)

b) Commands

- Command causes a program to perform a specific action.
- Like Ctrl+P for taking Print of Time card entries in previous slide example or Ctrl+ S for saving a Ms.Word Document in computer.

c) User Response

- A user response is an action which is or can be done by answering any question from computer.
- like You want to save the entries in time card program? User have two options Yes or No, that is depend on the user what to response.

INFORMATION PROCESS CYCLE (CONT.)

2. PROCESS

- Computer data processing is any process that uses a computer program to enter data and summarize it analyze it or otherwise convert data into usable information.
- The process may be automated and run on a computer.

INFORMATION PROCESS CYCLE (CONT.)

2. PROCESS

- It involves recording, analyzing, summarizing, calculating, disseminating and storing data.
- Data is most useful when well-presented and actually *informative*,
- Data-processing systems are often referred to as information systems.
- In computer processing is done by CPU (Central Processing Unit)

INFORMATION PROCESS CYCLE (CONT.)

3. OUTPUT

- **Output** is the data that has been processed in to useful form.
- The computer takes the input from user process it and produced **output**.
- **Output** also can be text, Audio, Video or graphics .
- Output can be in two forms
 - a) Soft Copy
 - b) Hard Copy

INFORMATION PROCESS CYCLE (CONT.)

3. OUTPUT

a) Soft Copy.

- When you are writing a document, playing a game, watching a video clip, or reading the latest news.
- Soft copy is what you see on the monitor (Screen).
- Soft copy is temporary; after you have finished with it, there is nothing solid to hold.
- However you can transfer soft copy to a disk, to transport it

INFORMATION PROCESS CYCLE (CONT.)

3. OUTPUT

b) Hard Copy:

- Hard copy can be touched and carried.
- Hard copy is usually some form of paper output.
- It is especially helpful if you need to have a colleague look at your work or
- you need to give your work to a supervisor or teacher.

INFORMATION PROCESS CYCLE (CONT.)

4. STORAGE

- Storage refers to various techniques and devices for storing large amounts of data.
- **Examples**
- Hard disks
- Floppy Disks
- Optical storage (CD, CD-R, CD-RW, DVD or DVD-R)
- Flash Memory/USB

WHAT IS DATA?

Definition:

- “Raw facts, figures, events and transactions are called data”

Examples:

1. Researchers who conduct market research survey might ask member of the public to complete questionnaires about a product or a service. These completed questionnaires are data.

WHAT IS DATA?

(CONT.)

2. NADRA prepared CNIC of Pakistanis by collecting data of people who belongs to Pakistan.
3. Some candidates want to take admission in university they will fill admission forms.

Above all are unprocessed and unprepared which is needed to process and work more.

WHY WE NEED DATA?

- Facts, statistics used for reference or analysis.
- Numbers, characters, symbols, images etc., which can be processed by a computer.
- Data must be interpreted, by a human or machine, to derive meaning

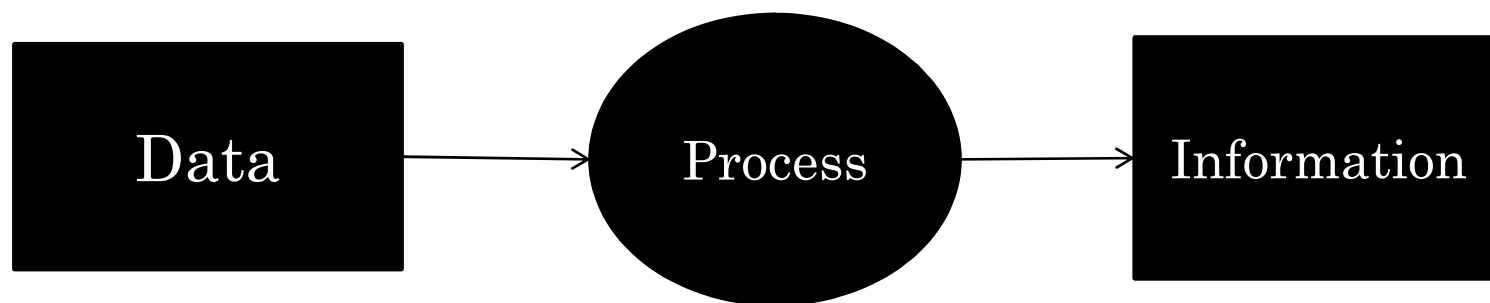
WHAT IS INFORMATION?

Definition:

- “Meaning full data is called information”
- “Processed data is called information”.

WHY WE NEED INFORMATION?

- Knowledge derived from study, experience (by the senses), or instruction.
- "Information is any kind of knowledge that is exchangeable amongst people, about things, facts, concepts, etc.,
- In some context, "Information is interpreted data"



WHY WE NEED INFORMATION? (CONTI.)

Detail Example:

- Some candidates want to take admission
- So they will fill an admission form containing data about their selves.
- When this data is organized and arranged by eligibility criteria and admission rules.
- A merit list will be formulated.
- This merit list is in the form of information of certain students which are eligible for admission.

WHY WE NEED INFORMATION? (CONTI.)

