COMPUTER ORGANIZATION

MM PG COLLEGE FATEHABAD

Class:- B.A.

Year:- 1st

Sem. :- 1st

Computer fundamentals

- Function unit in computer(figure 1)
- Input units
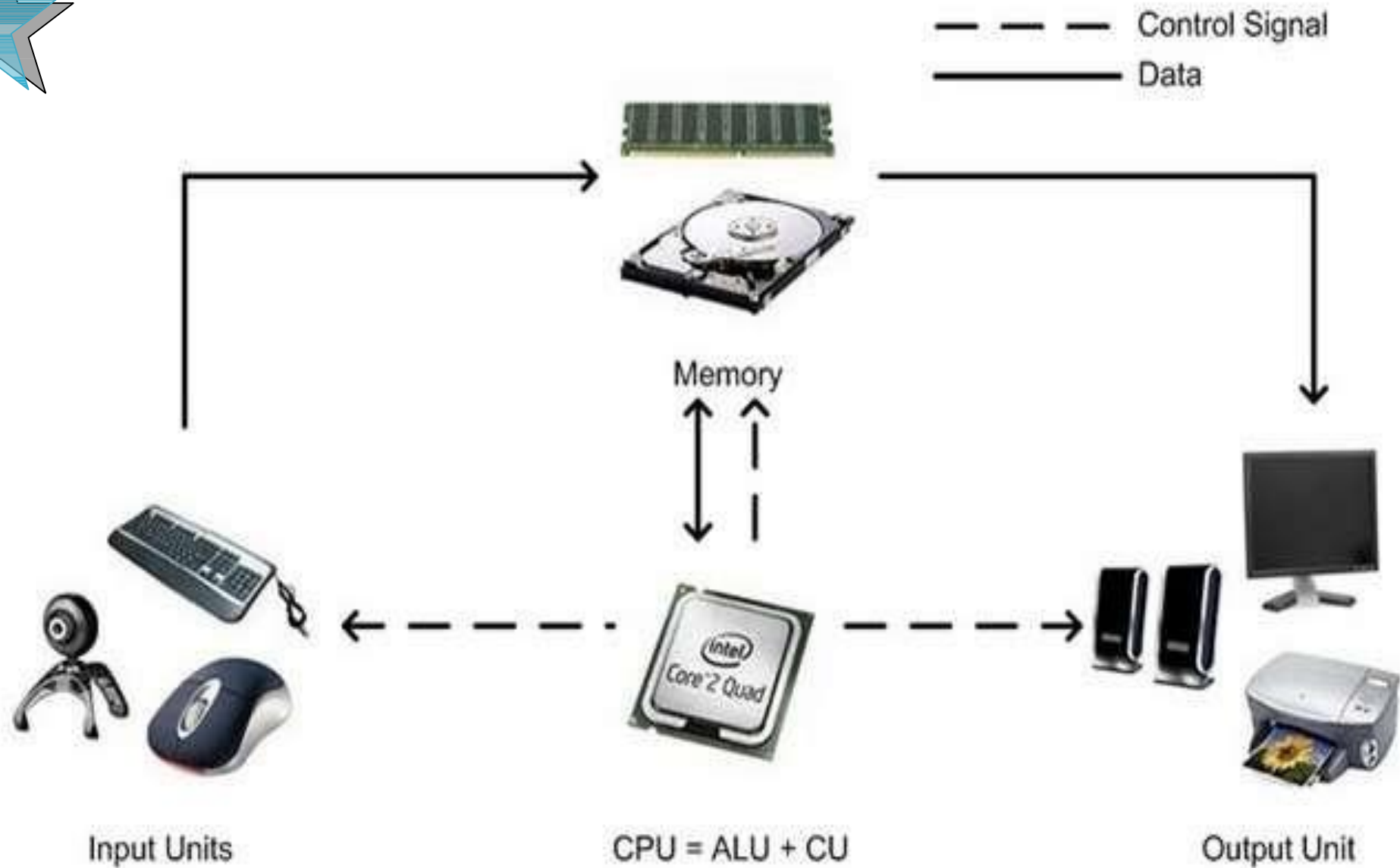- Memory units
- Storage concept
- ALU
- Output units

Figure1: Function unit in computer

Input unit

- Data and instructions must enter the system before any computation can be performed on the supplied data

- this task is performed by the input unit that links the external environment with the computer system

- Data and instructions enter input units in forms that depend upon the particular device used

- For example, data are entered from a keyboard in a manner similar to typing, and this differs from the way in which data are entered through a scanner, which is another type of input device
- all input devices must provide a computer with data that are transformed into the binary codes that the primary memory of a computer is designed to accept. This transformation is achieved by units called *input interfaces*
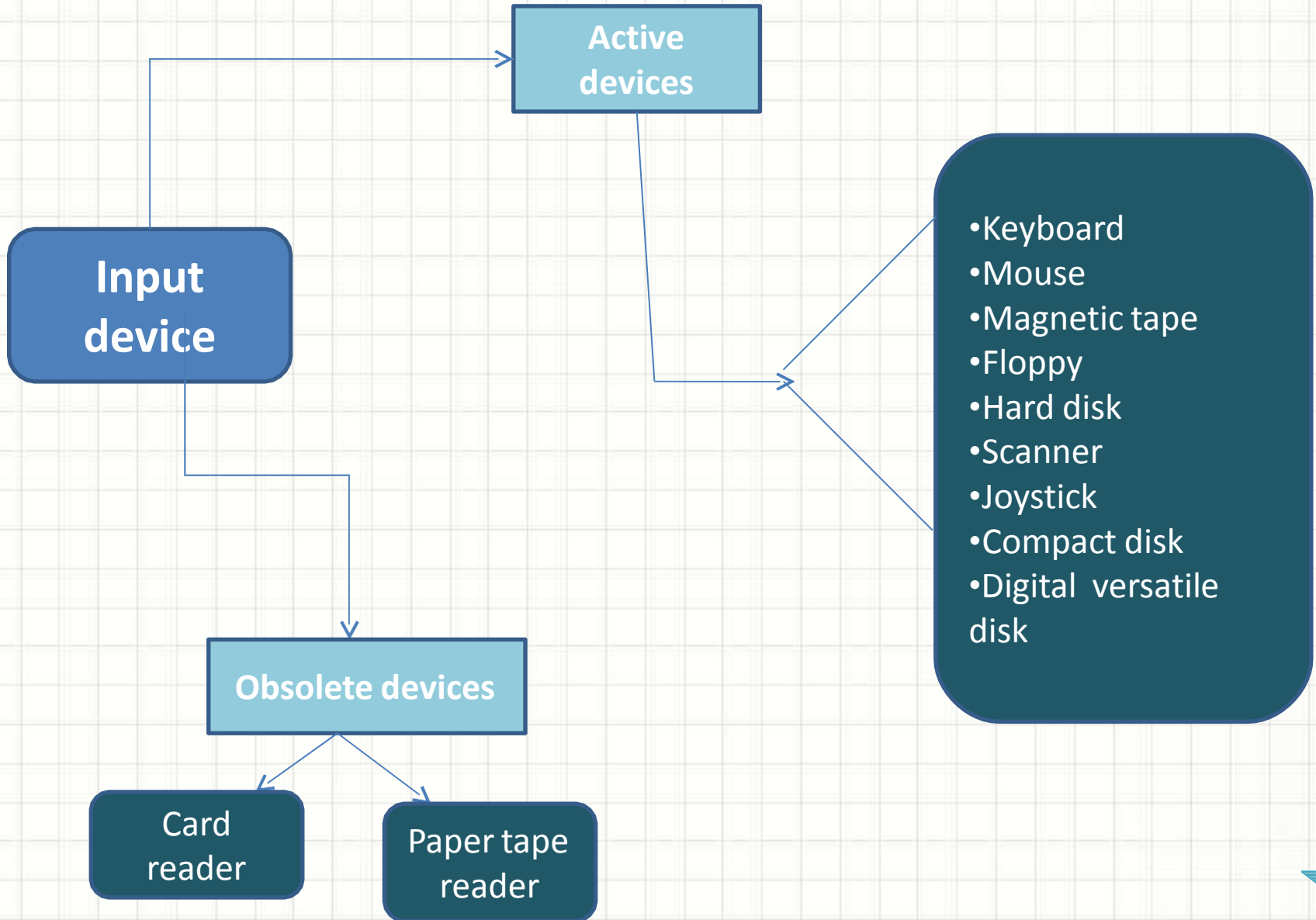
- the following functions are performed by an input unit:
- It accepts (or reads) the list of instructions and data from the outside world
- It converts these instructions and data in computer acceptable form
- It supplies the converted instructions and   data to the computer system for further processing.

Input devices

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Input device → Active devices → 
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Active devices

Input device

Obsolete devices

Card reader

Paper tape reader

- Keyboard
- Mouse
- Magnetic tape
- Floppy
- Hard disk
- Scanner
- Joystick
- Compact disk
- Digital versatile disk

Memory units

- The data and instructions that are entered into the computer system through input units have to be stored inside the computer before the actual processing starts

- Similarly, the results produced by the computer after processing must also be kept somewhere inside the computer system before being passed on to the output units

Memory unit

- Moreover, the intermediate results produced by the computer must also be preserved for ongoing processing

- The storage unit of a computer system is designed to cater to all these needs

- It provides space for storing data and instructions, space for intermediate results, and also space for the final results

Memory unit

The specific functions of the storage unit are to hold (store):

* All the data to be processed and the instructions required for processing (received from input devices).

* Intermediate results for processing.

* Final results of processing before these results are released to an output device.

Storage concept

- The **primary storage**, also known as *main memory,* is used to hold pieces of program instructions and data, intermediate results of processing, and recently produced results of processing of the job(s) that the computer system is currently working on

- the primary storage can hold information only while the computer system is on. As soon as the computer is switched off or reset, the information held in the primary storage disappears

Storage concept

- The **secondary storage**, also known as *auxiliary storage*, is used to take care of the limitations of the primary storage

- That is, it is used to supplement the limited storage capacity and the volatile characteristics of primary storage

- secondary storage is much cheaper than primary storage and it can retain information even when the computer system is switched off or reset

- It is normally used to hold the program instructions, data, and information of those jobs on which the computer system is not working on currently
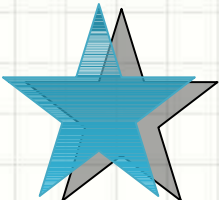
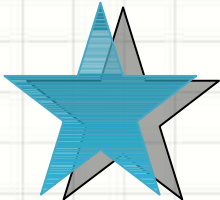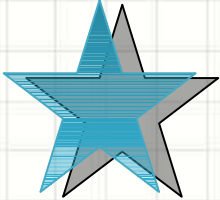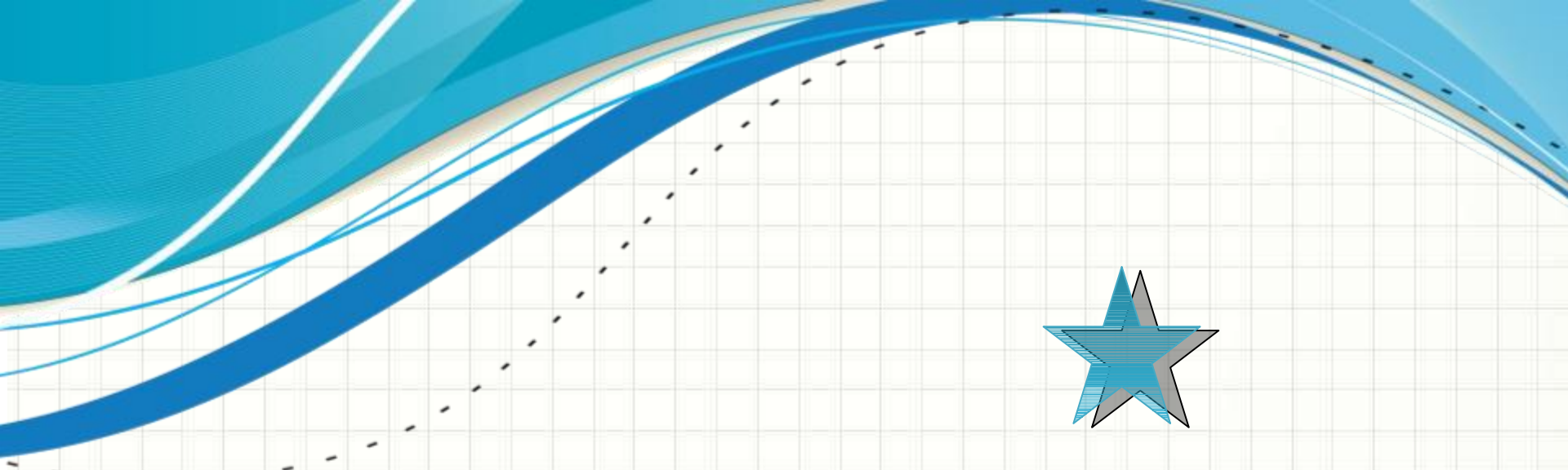# ALU (Arithmetic Logical Unit)

- The arithmetic logical unit (ALU) of a computer system is the place where the actual execution of the instructions takes place during the processing operation

- The type and number of arithmetic and logic operations that a computer can perform is determined by the engineering design of the ALU

- almost all ALUs are designed to perform the four basic arithmetic operations (add, subtract, multiply, and divide), and logic operations or comparisons such as less than, equal to, and greater than.

Output Unit

- The job of an output unit is just the reverse of that of an input unit

- It supplies the information obtained as a result of data processing to the outside world

- computers work with binary code, the results produced are also in the binary form.Hence, before supplying the results to the outside world, it must be converted to human acceptable (readable) form. This task is achieved by units called *output interfaces*

Output unit

- the following functions are performed by an output unit:

- It accepts the results produced by the computer, which are in coded form and hence cannot be easily understood by us.

- It converts these coded results to human acceptable (readable) form.

- It supplies the converted results to the outside world

THANK YOU