DICE
DEPARTMENT OF INTERDISCIPLINARY COURSES IN ENGINEERING

CHITKARA UNIVERSITY

TOPIC:

Computer Organization and Architecture

Introduction to Input-Output Interface

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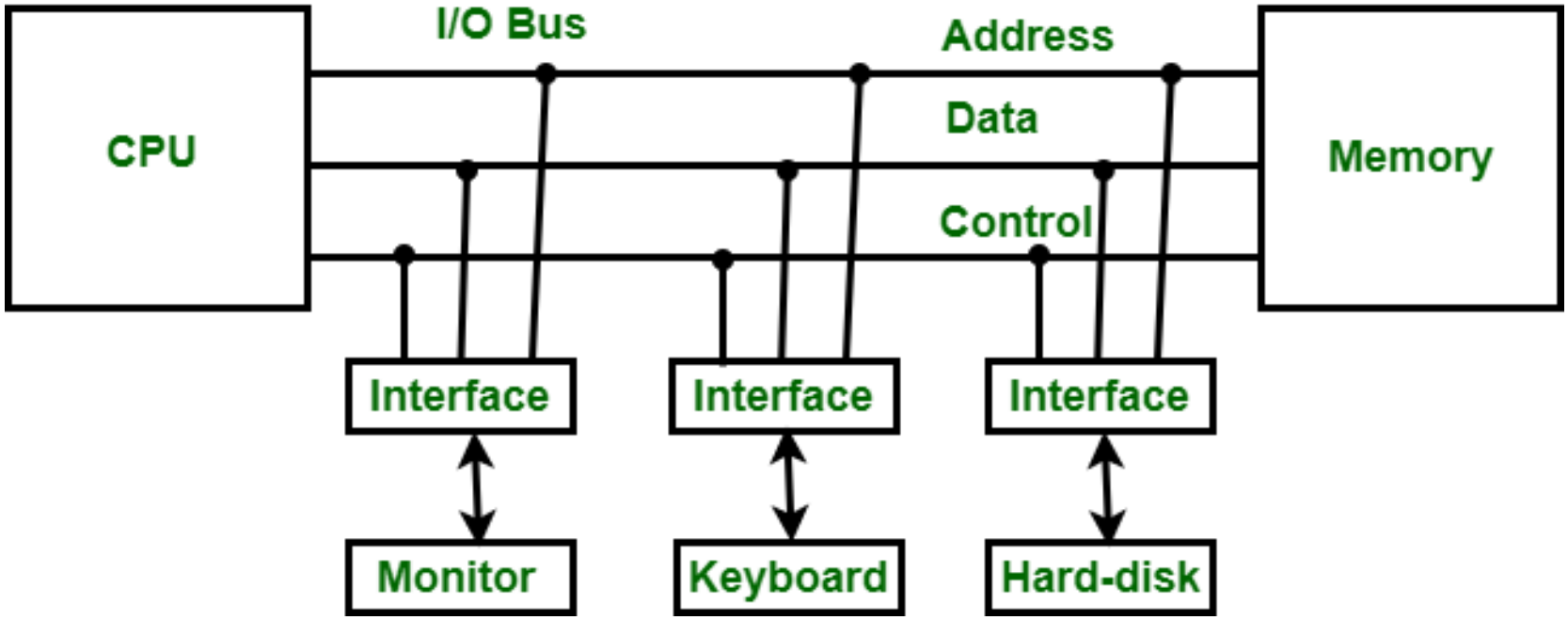
Input-Output Interface

- Input-Output Interface is used as an method which helps in transferring of information between the internal storage devices i.e. memory and the external peripheral device . A peripheral device is that which provide input and output for the computer, it is also called Input-Output devices.
- For Example: A keyboard and mouse provide Input to the computer are called input devices while a monitor and printer that provide output to the computer are called output devices. Just like the external hard-drives, there is also availability of some peripheral devices which are able to provide both input and output.



Input-Output Interface

In micro-computer base system, the only purpose of peripheral devices is just to provide **special communication links** for the interfacing them with the CPU. To resolve the differences between peripheral devices and CPU, there is a special need for communication links.

The major differences are as follows:

- The nature of peripheral devices is electromagnetic and electro-mechanical. The nature of the CPU is electronic. There is a lot of difference in the mode of operation of both peripheral devices and CPU.
- There is also a synchronization mechanism because the data transfer rate of peripheral devices are slow than CPU.
- In peripheral devices, data code and formats are differ from the format in the CPU and memory.
- The operating mode of peripheral devices are different and each may be controlled so as not to disturb the operation of other peripheral devices connected to CPU.

There is a special need of the additional hardware to resolve the differences between CPU and peripheral devices to supervise and synchronize all input and output devices.

Functions of Input-Output Interface:

- It is used to synchronize the operating speed of CPU with respect to input-output devices.
- It selects the input-output device which is appropriate for the interpretation of the input-output device.
- It is capable of providing signals like control and timing signals.
- In this data buffering can be possible through data bus.
- There are various error detectors.
- It converts serial data into parallel data and vice-versa.
- It also convert digital data into analog signal and vice-versa.

Thank You !!!