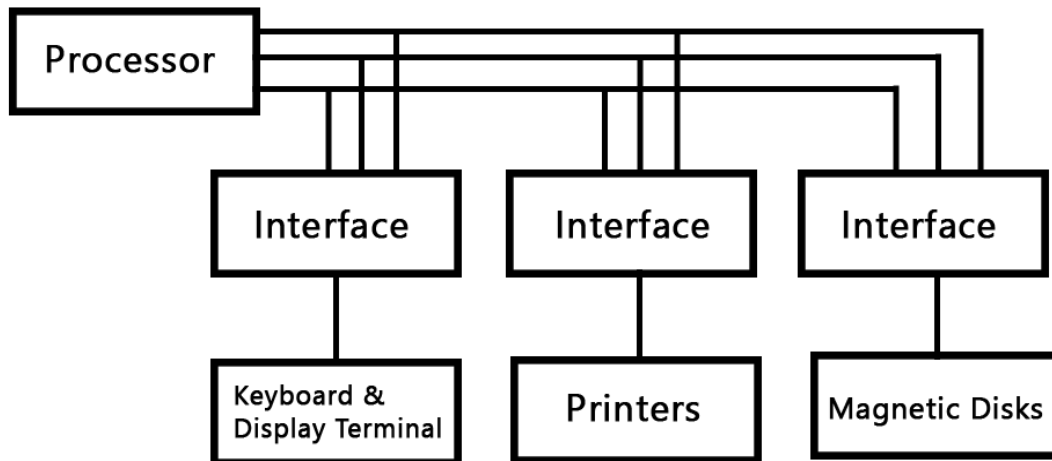


I/O BUS AND INTERFACE MODULES



Communication Link between Processor and Peripherals

The data bus, address bus and control bus that arise out of the processor and are intended to communicate with I/O devices are called I/O bus. The communication link between the processor and several peripherals is shown in the given figure. The I/O bus is connected to all peripheral interfaces. To communicate with a particular device, the processor places a device address on the address bus. Each interface attached to the I/O bus contains an address decoder that monitors the address lines. When the interface detects an address to be its own, it activates the path between the bus and the device that it controls. All other peripherals are disabled. At the same time, a function code is provided to the control bus which is called I/O command. The types of I/O commands that are given out by the processor are:

1. **Control Commands:** This is the function code that activates the corresponding peripherals and informs them about what to do.
2. **Status Commands:** A status command is used to test various status conditions in the interface and the peripheral devices like BUSY, ERROR, data available or not in the buffer etc .
3. **Data Output Command:** A data output command causes the interface to respond by transferring the data from the processor to the peripheral. The data is sent from the CPU to the buffer of interface after this command is provided.

4. **Data Input Command:** This command is sent by the CPU if the data is to be read from the peripheral. After this command is issued, the data of peripheral are extracted into the buffer of the interface and are read by the CPU.