

5.7.1 Requirements of I/O System

- The I/O system is nothing but the hardware required to connect an I/O device to the bus. It is also called **I/O interface**. The major requirements of an I/O interface are :
 - Control and timing
 - Processor communication
 - Device communication
 - Data buffering
 - Error detection
- The important blocks necessary in any I/O interface are shown in Fig. 5.7.1.

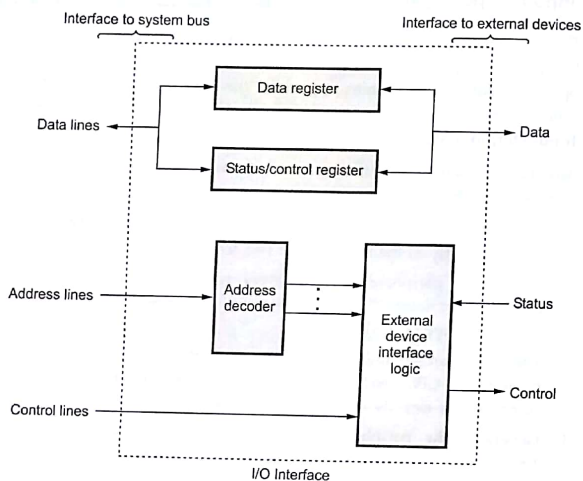
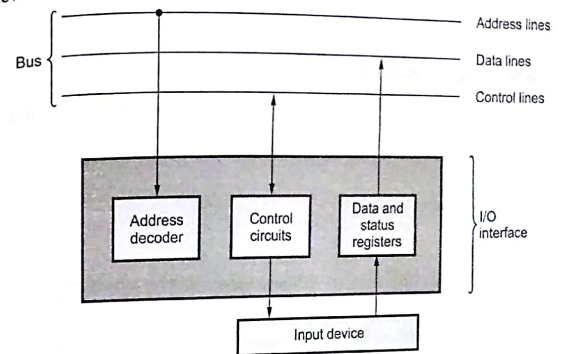


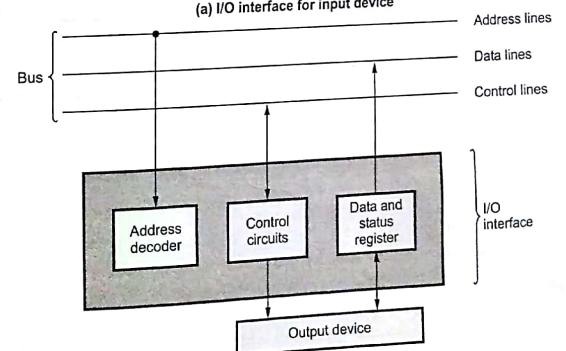
Fig. 5.7.1 Block diagram of I/O interface

- As shown in the Fig. 5.7.1, I/O interface consists of data register, status/control register, address decoder and external device interface logic.
- The data register holds the data being transferred to or from the processor.

control lines and status signals from the I/O device and generates control signals to control the direction and speed of data transfer between processor and I/O devices.



(a) I/O interface for input device



(b) I/O interface for output device
Fig. 5.7.2