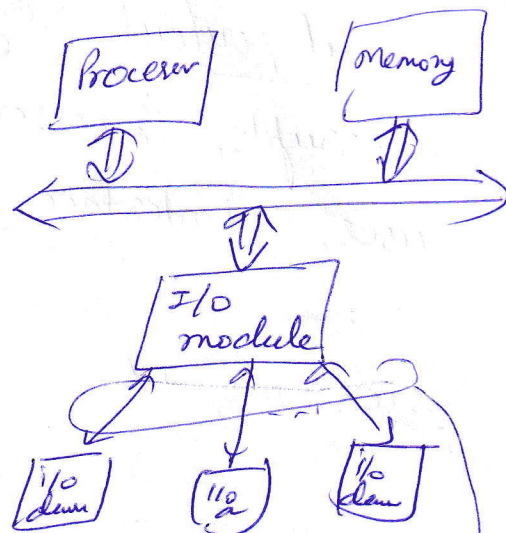


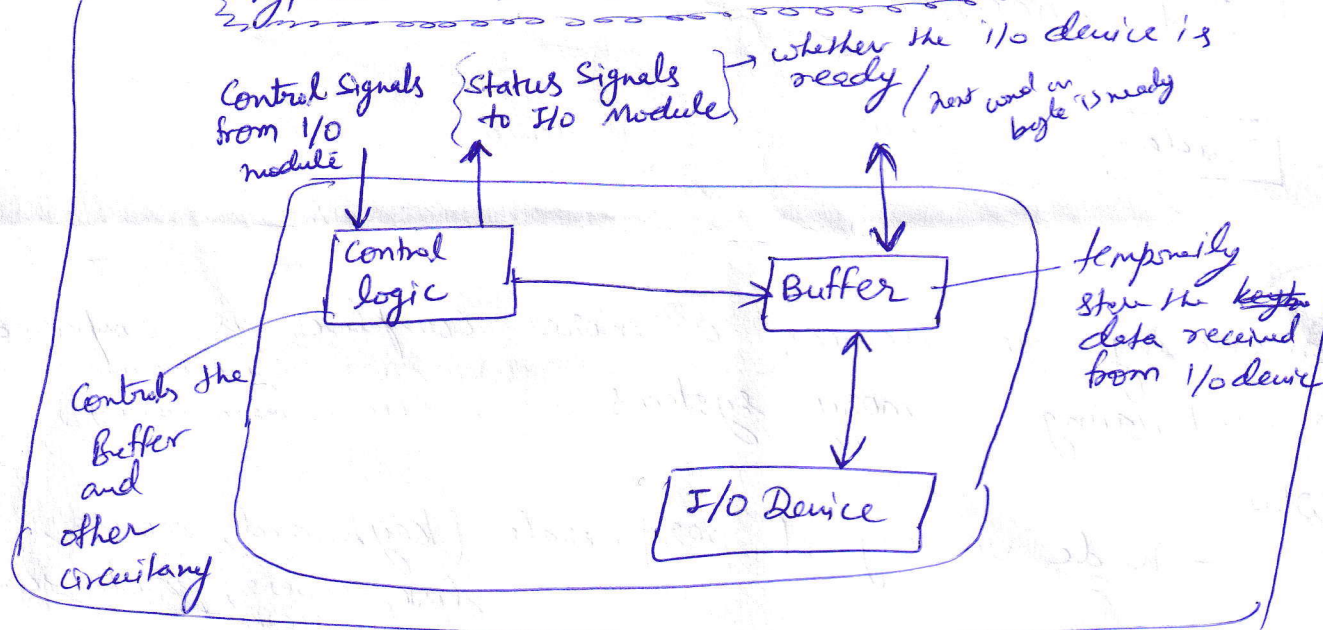
# Input/output Interface

→ To handle different types of I/O devices, we need a programmable I/O interface or I/O module.

- Interfaces to processor and memory on one side
- Interfaces to one or more peripheral devices on the other side.

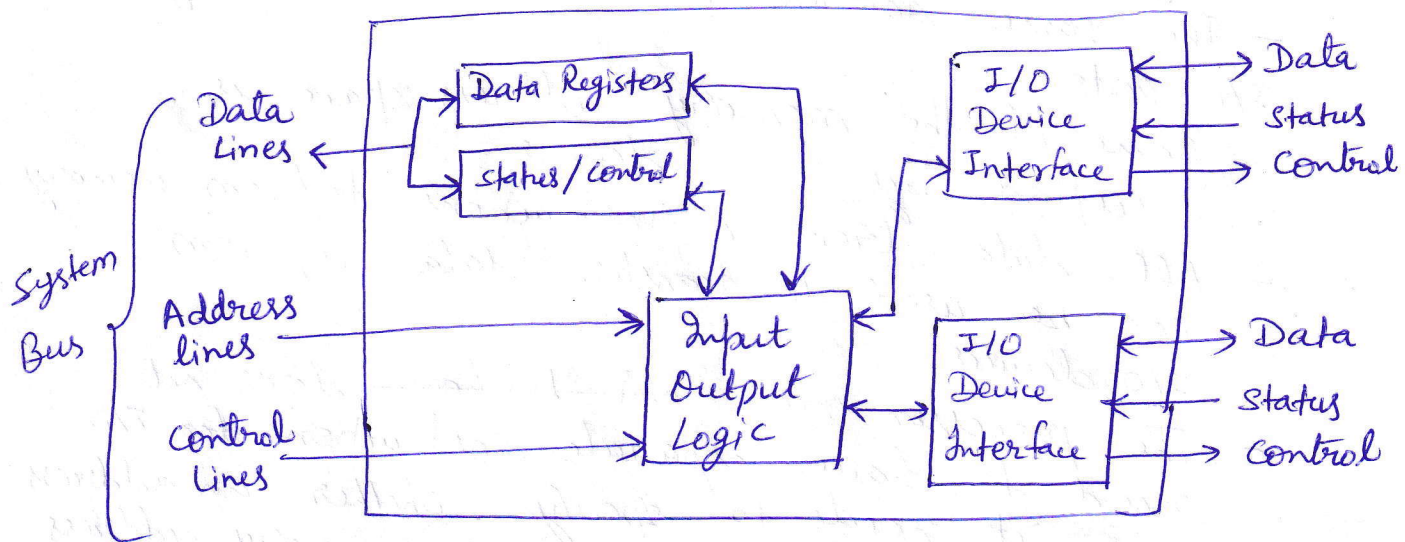


## Typical I/O Device Interface



# I/O module schematic

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## Typical Steps During I/O

- Processor requests the I/O module for device status.
- I/O module returns the status to the processor.
- If the device is ready, processor requests data transfer.
- I/O module gets data from device (say, input device).
- I/O module transfers data to the processor.
- Processor stores the data in memory.

How are I/O devices

typically interfaced?

→ Through input and output ports.

→ Output port:

- Basically a PIPO register that is enabled when a particular output device address is given
- The register inputs are connected to the data bus, and the register outputs are connected to the ~~data bus~~ output device

buffer - cheap simpler hardware

→ Input port:

- Basically a parallel bistate bus driver that is enabled when a particular input device address is given
- The driver outputs are connected to the data bus

