



SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution)

COIMBATORE-35

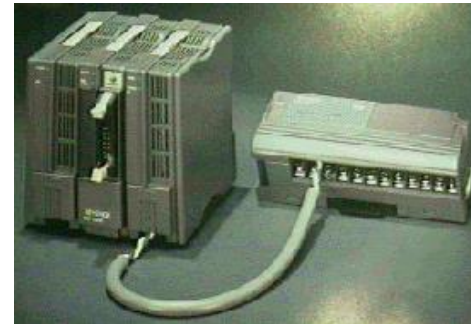
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UNIT IV: INDUSTRIAL AUTOMATION



TOPIC: **PLC**





TOPIC OUTLINE



- **Introduction**
- **Block Diagram**
- **Characteristics**
- **Types**
- **Advantages**
- **Disadvantages**
- **Applications**



Types of control

- Temporal -- control based in time
- State -- control based in state level
- Hybrid – both temporal and state



PURPOSE OF Programmable Logic Controllers (PLCs)

- Initially designed to replace relay logic boards
 - Sequence device actuation
 - Coordinate activities
- Accepts input from a series of switches
- Sends output to devices or relays



FUNCTIONS OF CONTROLLERS

- 1) on-off control,
- 2) sequential control,
- 3) feedback control, and
- 4) motion control.



CONTROL DEVICES

- 1) mechanical control - cam, governor, etc.,
- 2) pneumatic control - compressed air, valves, etc.
- 3) electromechanical control - switches, relays, a timer, counters, etc,
- 4) electronics control - similar to electromechanical control, except uses electronic switches.
- 5) computer control.



PROGRAMMABLE LOGIC CONTROLLER

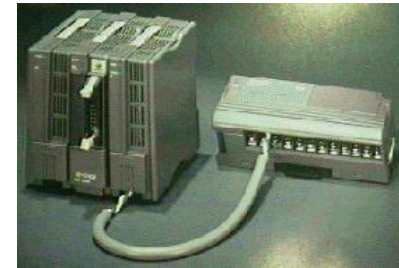
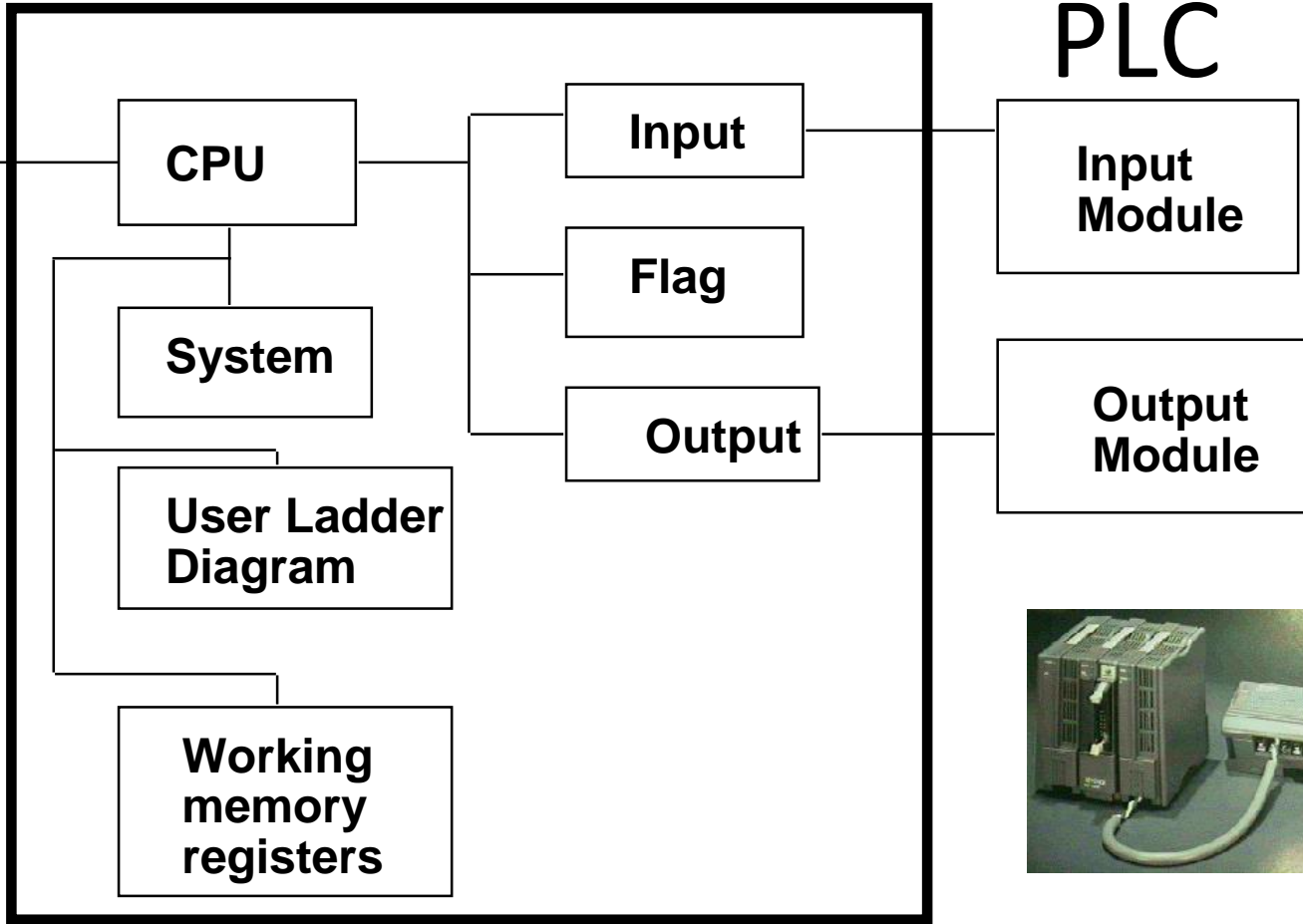


Invented in 1968 as a substitute for hardwired relay panels.

"A digitally operating electronic apparatus which uses a programmable memory for the internal storage of instructions by implementing specific functions such as logic sequencing, timing, counting, and arithmetic to control, through digital or analog input/output modules, various types of machines or processes. The digital computer which is used to perform the functions of a programmable controller is considered to be within this scope. Excluded are drum and other similar mechanical sequencing controllers."

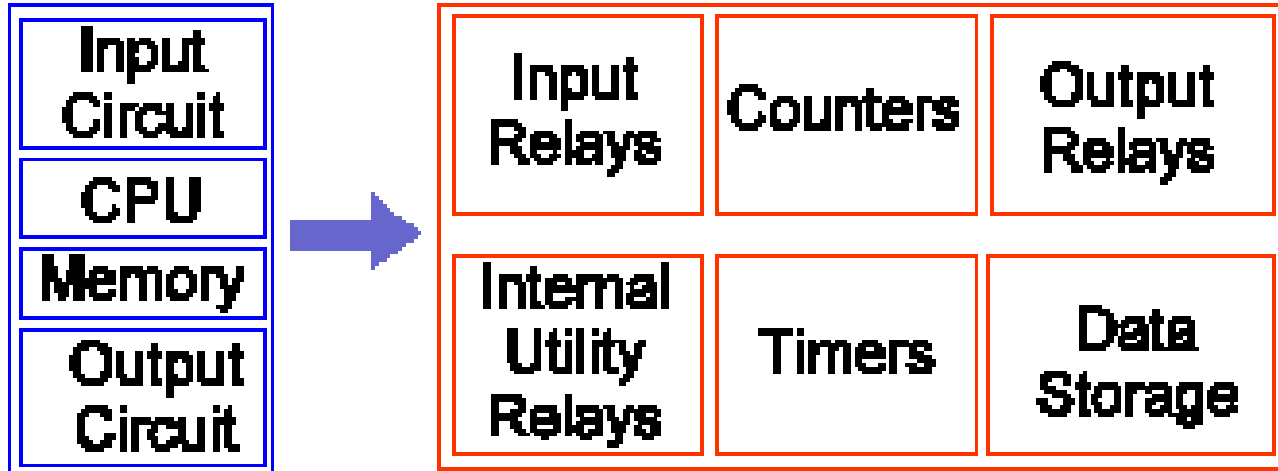


PLC





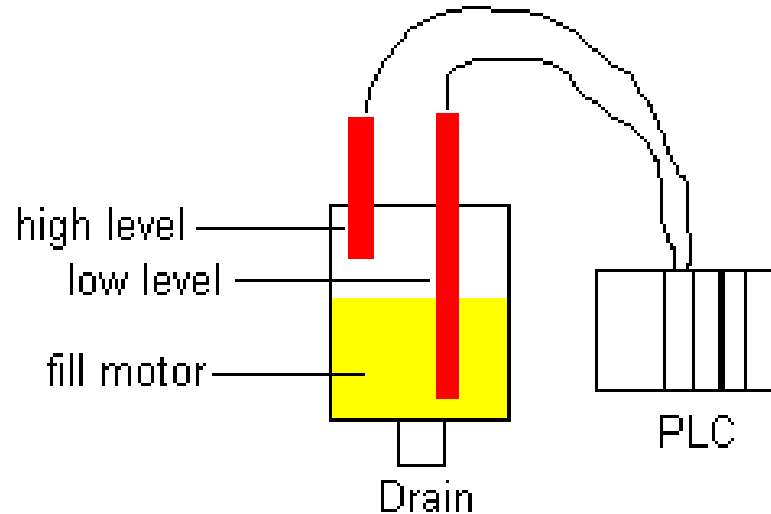
PLC Configuration





Programming a PLC

Oil is consumed randomly.
The tank needs to be refilled
by turning on a pump. Two
hydrostatic switches are
used to detect a high and
low level.



Dispensing oil from a tank



RECAP....



...THANK YOU