SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
COIMBATORE-35
Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

19EEE305 / EMBEDDED SYSTEMS
III YEAR / VI SEMESTER

UNIT-II: HARDWARE ARCHITECTURE OF EMBEDDED SYSTEM

INPUT / OUTPUT PORTS

A Port

- A port is a device to receive the bytes from external peripherals for reading them later using instructions executed on the processor (or) to send the bytes to external peripheral or device or processor using instructions executed on processor
- A part connects to the processor using address decoder and system buses. The processor uses the addresses of the port registers for programming the port functions or modes, reading port status and for writing or reading bytes.

Example:

- Serial Peripheral Interface (SPI) in 68 HCII.
- Ports PO, P1, P2 and P3 in 8051.
- COM1 & COM2 ports in an IBM PC.

Types of Serial Ports

- Synchronous Serial input
- Synchronous Serial output
- Asynchronous serial UART input
- Asynchronous serial UART output
- Both as Input and as output. Example: Modem

Types of Parallel ports

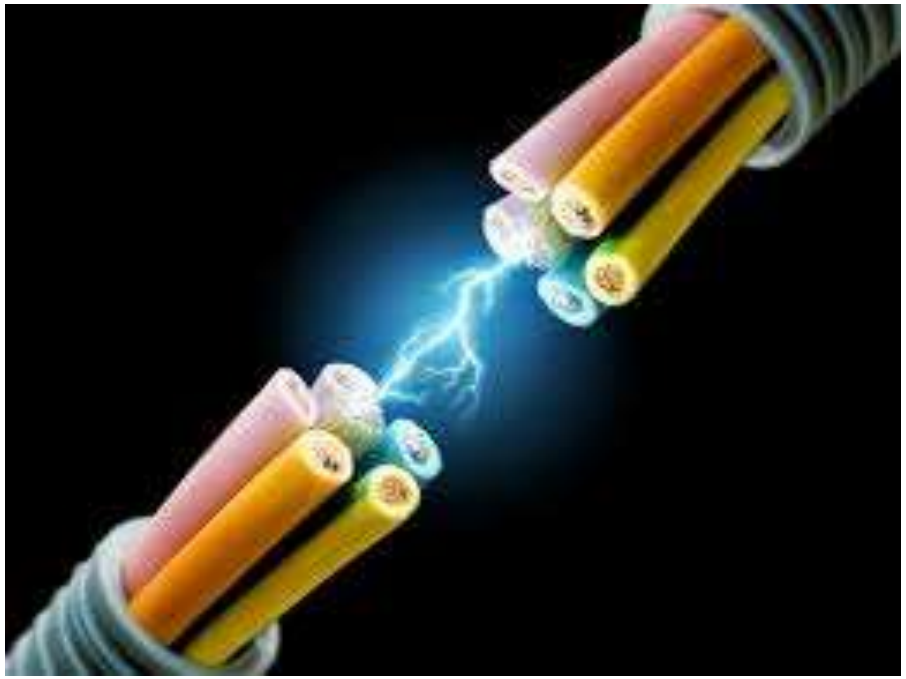
- ***1. Parallel port one bit Input: Example: Filling of a liquid up to a fixed level***
- ***2. Parallel port one bit output: Example:***
- PWM output for a DAC.
- Pulses to an external circuit.
- Control signal to an external circuit.
- ***3. Parallel port Multi bit input: Example:***
- ADC Input from Liquid level measuring sensor or temperature sensor (or) pressure sensor (or) Speed Sensor.
- Encoder inputs for bits for angular position of a rotating shift or a linear displacement of an object.

Types of Parallel ports

- ***4. Parallel port Multi bit output: Example:***
- Print controller output
- Stepper Motor coil driving bits.

- ***5. Parallel port input - output: Example:***
- PPI 8255
- Touch Screen in Mobile Phone.

RECAP….



…THANK YOU