SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

19ECT221 – MICROPROCESSORS AND MICROCONTROLLERS

II YEAR - IV SEM

UNIT 4– INTERFACING MICROCONTROLLER

Topic-8- Comparison of Microprocessor and Microcontroller

Microprocessor

- A microprocessor is a computer processor for which the data processing logic and control is included on a single integrated circuit (IC), or a small number of ICs.
- The microprocessor contains the arithmetic, logic, and control circuitry required to perform the functions of a computer's central processing unit (CPU).

Microcontroller

- A microcontroller (MC, UC, or µC) or microcontroller unit (MCU) is a small computer on a single integrated circuit.
- A microcontroller contains one or more CPUs (processor cores) along with memory and programmable input/output peripherals.

Comparison of Microprocessor and Microcontroller

MICROPROCESSOR	MICROCONTROLLER
Center of a computer system.	Center of embedded system.
Memory and I/O components are external to it.	Memory and I/O components are internal to it.
Large Circuit	Smaller Circuit
Not compatible with compact systems	Compatible with compact systems.
Higher cost	Lower Cost
High Power Consumption	Low Power Consumption
Mostly don't have power features	Mostly have power features.
Mainly present in personal computers.	Mainly present in washing machines, music players, and embedded systems.
Less number of registers.	More number of registers.
Follows Von Neumann model	Follows Harvard architecture
Made on a silicon-based integrated chip.	Byproduct microprocessors and peripherals.
RAM, ROM, and other peripherals are absent.	RAM, ROM, and other peripherals are present.
Has an external bus to interface with devices.	Uses an internal controlling bus for communication.
Has a high speed.	Speed depends on the architecture.
Ideal for general purpose to handle more data.	Ideal for the specific applications.
Complex and Expensive	Simple and affordable
Requires more instructions	Requires less instructions

References

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