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Introduction

- Definition of a Microcontroller
- Difference with a Microprocessor
- Microcontroller is used where ever
Definition

• It is a single chip
• Consists of Cpu, Memory
• I/O ports, timers and other peripherals
Difference

Micro Controller
• It is a single chip
• Consists Memory,
• I/o ports

Micro Processor
• It is a cpu
• Memory, I/O Ports to be connected externally

![Diagram of Micro Controller and Micro Processor differences]
Where ever

• Small size
• Low cost
• Low power
Architecture

- Harvard university

The Architecture given by Harvard University has the following advantages:
1. Data Space and Program Space are distinct
2. There is no Data corruption or loss of data

Disadvantage is:
1. The circuitry is very complex.
Features

- 8 bit CPU
- 64k Program memory (4k on chip)
- 64k Data memory
- 128 Bytes on chip
- 32 I/O
- Two 16 bit timers
- Full duplex UART
- 6 Source/5 Vector interrupts with two level priority levels
- On chip clock Oscillator.
Memory Architecture

- EA = 0 (EXTERNAL)
- EA = 1 (INTERNAL)

PSEN

0000

00

FFFFH:

0000H:

RD

WR
SFR Map
Internal Memory

- 7FH: Scratch Pad
- 30H: Bit Memory
- 20H: Bank 3 (R0-R7)
- 18H: Bank 2 (R0-R7)
- 10H: Bank 1 (R0-R7)
- 08H: Bank 0 (R0-R7)
Pin connections