Micro controller

Differences between micro controller and micro processor

* Micro processor is a CPU on chip whereas a micro controller is a computer on chip.

Micro controller contains 1 or more CPUs along with memory and programmable input and output peripherals.

* Micro processor are flexible and versatile

In micro processor whatever the memory required that memory can be interfaced but in micro controller the memory is fixed. If we need extra memory that memory need to be interfaced using system bus in micro controller

* Micro processor are general purpose devices but micro controllers are designed for a particular application.
* In micro processor power consumption is high

Due to external components, the entire power consumption is high.

Most of the micro processor do not have power saving features whereas most of the micro controller have power saving modes like idle mode and power saving mode, this helps to reduce power consumption even further.

* Micro processor has a smaller number of registers so more operations are memory based, micro controller has more registers hence the programs are easier to write.
* Micro processors are mainly used in personal computers and micro controllers are rarely used in washing machine,mp3 players etc….
* Micro processor can be called as a heart of computer system and micro controller can be called as heart of embedded systems.

Types of micro controllers

1.PIC – Peripheral Interface Controller

It is used in development of electronics,computer robotics and similar devices. It has a built in data memory, data bus and dedicated micro processor for preparing all input output purposes and methods. PIC is very popular due to its wide availability, low cost, large user base and serial programming capabilities.

2.ARM – Advanced RISC Machine

Most popular micro controlling programming in digital embedded system world.Most of the industries prefer ARM micro controllers as it consists of significant features to implement products with an excellent appearance. It doesn’t have on board flash memory. Application of ARM controller involves industrial instrument control systems, wireless networking and automotive body systems etc..

3.8051 Microcontroller

It is a 8 bit microcontroller. It is made with 40 pins DIP. ROM is of 4kb and 128 bytes of RAM. It consists of 4 parallel 8 but ports which are programmable as well as addressable as per specifications.

4.AVR – Alf and Vegards RISC Processor

In this program and data were stored in the separate physical memory system that appears in different address spaces.

SRAM, flash and EEPROM all are Incorporated to single chip thereby eliminating the requirement of any other external memory in maximum devices.

5.MSP – Mixed Signal Process

It is from TEXAS instrument. It is built around a 16 bit CPU and is mainly designed for low cost and low power dissipation. It also allows shorter, denser programming code for fast performance due to decreased instructions set.