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1) Microprocessor : Main Component of any computing device that consists of ALU Registers - Control unit used to execute some instruction.

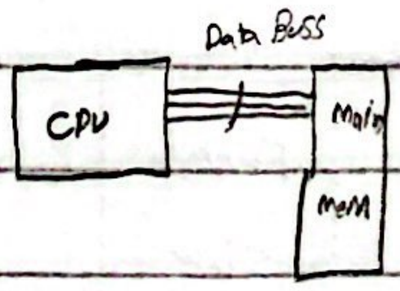
2) Micro controller : it is computing device "Microprocessor + Memory + Peripherals" that is used in embedded system To do specific task.

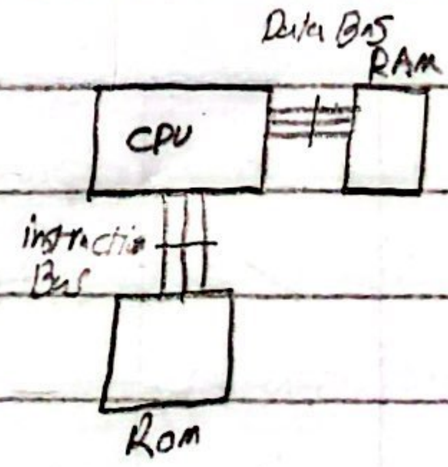
3) Embeded System : Electrical system that use microcontroller device to do single purpose target and it is constrained by limited resource "Power - size, computing power".

4) Mechatronic system : system that integrate between input devices like sensors and Embedded System To make decisions and output device like Actuators to take an action.

5) n-bit Microprocessor : size of Registers and Busses in microprocessors that is used to manipulate Data in one clock cycle.

	"Micro processor"	"Micro Controller"
Purpose	General	Single
Component	Alu, Registers, Control unit	Microprocessor + Memory + Embedded Phriphieral
	"Von-Numen"	"Harvard"
Pipeing	Not Support	Support
Busses	one Buse "Data"	"More than one Data"





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Memory in Computers

1) Secondary Storage: Hard Desk , CD ,

2) primary Storage:

1) RAM " Volatile - Hi Speed - Hi Cost - transistors - Read write"

1) DRAM : " Dynamic - low Cost - transistor + MosFet - Hi Power - PC - big "

2) SRAM : "static - Hi Cost - Transistors + Capacitor - low Power - Embedded - small "

2) RoM " NuN - Volatile - low Speed - low Cost - Gate Mosfet Floating Read "

1) Masked ; By Manufacturer - one time
2) PRoM : By user - one time — OTP one time programming. "
3) EPRom : By user - many Times - used UV to ~~Write~~.

3) HYBRID " Nun Volatile - Medum Speed - medum Cost - Read write "

1) E-EProm : By user - many times - used Electricity to write.
2) Flash : like E.EProm But New technology.
3) N-VRaM : SRAm + EERRom + Battary Conflict between Ram + Rom.

→ Why I Can write on Read only Memory's ?

- I Can write on Rom By an special device like Burners. However, IF I want to write on it using CPU Y'll need special configuration to Access it.

	Volatile	write	Erase size	Limit Erase Cycles	Cost	Speed
SRAM	✓	✓	Byte		Hi	Fast
DRAM	✓	✓	Byte		low	slow
MASKed RoM	X	one time	—		low	Fast
E PRoM	X	✓	All		Medum	Fast R
EEPRoM	X	✓	Byte		Hi	Fast R
NV RAM	X	✓	Byte		Hi	Fast