

## Topic 2: set, instruction, stored, computer, program

- Programs are stored in ROM data stored in Features Interface easily with keyboards and displays
- Computer could get instruction by reading them from memory and a program could be set or altered by setting the values of a portion of memory
- Such machines are also known as stored program computer
- The main purpose is to sequence the execution of the program
- It has a set of instructions designed to manipulate data and communicate
- It can be programmed to perform specific task by selecting necessary instruction from its set
- It reads one instruction at a time matches it with instruction set and performs the data manipulation as indicated by the instruction

## Topic 0: memory, address, data, bus, carries

- Uses a single memory to hold both the instruction and data
- The memory of the Neumanns machine consists of storage location called words each capable of storing bits
- The storage location of the control unit and ALU are called register
- Memory Address Register (MAR) located in the CPU connected to the address lines
- Specifies the address in memory
- Memory Buffer Register (MBR) Located in the CPU connected to the data lines
- Harvard Architecture Consists of separate memory for program and data
- Each memory has its own address and data buses
- Consists of separate data and address buses for program and data memory
- The data memory address bus carries the memory address of data whereas program memory address bus carries the memory address of the instruction
- Similarly program memory data bus carries the instruction and data memory data bus carries the data required to perform the operations

## Topic 3: chip, cpu, microprocessor, single, binary

- Acts as an interface between the CPU and memory
- Hence it requires separate block of RAM chip
- Microprocessor A P is a programmable clock driven electronic device designed with registers flip flops timing elements that reads binary instruction from a storage device called memory

accept binary data as input and process data according to those instruction and provide the results as output

- The CPU of computer consists of an ALU CU and memory
- If all these components can be organized on a single silicon chip by means of LSI VLSI technology then such structure is called P
- So the microprocessor is CPU in a single chip

#### Topic 4: fetched, instruction, register, memory, counter

- Instruction Register (IR ) When the instruction is fetched from the memory it is loaded in the instruction register
- Program Control (PC) Contains the address of next byte to be fetched from the memory
- The contents of the program counter are copied to the memory address register before an instruction is fetched from memory
- When the instruction is fetched the control unit updates the program counter to point to the next instruction which is to be fetched
- Both the instruction and data can be fetched from memory concurrently