

AMIE NBCAFE VIDEO TUTORIAL ON ADDRESSING MODES IN MICROPROCESSOR 8085



What is Addressing Modes in Microprocessor 8085?



How many types of Addressing Modes in Microprocessor 8085?



Details of different types of Addressing mode with Example.

Lecture by Subham Dutta

See at www.amienbcafe.blogspot.com

© to Subham Dutta

WHAT IS ADDRESSING MODES IN MICROPROCESSOR 8085?

- In microprocessor 8085 every instruction which indicates an operation to be performed on certain data inside a Microprocessor. Now there are some methods to specify the data for the instructions, known as 'Addressing modes'. Remember that the Execution Unit (EU) of a Microprocessor can access all registers and data which is stored in registers or immediate operands but it cannot access data on memory address. So we need some special methods to access data from memory location, which is called Addressing Methods.



HOW MANY TYPES OF ADDRESSING MODES IN MICROPROCESSOR 8085?

- In 8085 microprocessor, there are mainly five addressing modes. These are:
 - Direct addressing
 - Register addressing
 - Register indirect addressing
 - Immediate addressing
 - Implicit addressing.



DETAILS OF DIFFERENT TYPES OF ADDRESSING MODE WITH EXAMPLE.

- **Direct Addressing:** In this mode, the operand is specified within the instruction itself . That means in instruction we can find the source and destination where data is being access because address is given in Operand. Examples of this type are:

Example LDA 4000H, STA 5513H, etc.

- **Register Addressing:** In this mode of addressing, the operand is in the general purpose registers and data operation done between the register.

Examples are: MOV A, B ; ADD D, etc.



DETAILS OF DIFFERENT TYPES OF ADDRESSING MODE WITH EXAMPLE.

- **Register Indirect Addressing:** MOV A, M; ADD M are examples of this mode of addressing. These instructions utilize 1-byte. In this mode, instead of specifying a register, a register pair is specified to accommodate the 16-bit address of the operand. Look in the instruction MOV A,M where m is a register but it contain data of address which is initialize in HL pair. Say HL pair initialize with address C050. So in MOV A,M instruction data of address C050 is being transfer to Accumulator .
- **Immediate Addressing:** MVI A, 07; ADI 0F are examples of Immediate Addressing mode. The operand is immediately specified in the instruction in this mode. Here, the operand address is not specified but directly work with DATA.



DETAILS OF DIFFERENT TYPES OF ADDRESSING MODE WITH EXAMPLE.

- **Implicit Addressing:** In this mode of addressing, the operand is fully absent. Examples are RAR, RAL, CMA, etc. look in instruction RAR (Rotate Accumulator Right) is used to rotate the binary bit position of data which is present in Accumulator.
- Let Accumulator contain 07h in binary 0000 0111
- Now if we perform RAR instruction then accumulator data will be 1000 0011 means 83h.



THANK YOU

- Visit www.amienbcafe.blogspot.com for more video tutorial

