

Addressing Mode

To perform any operation using microprocessors, user has to give following instruction-

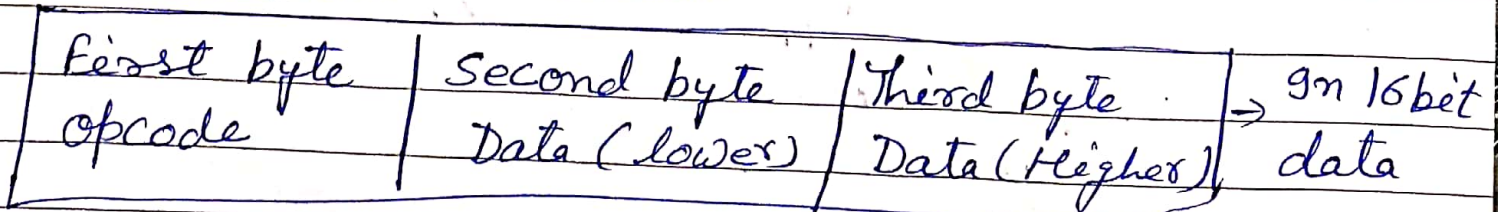
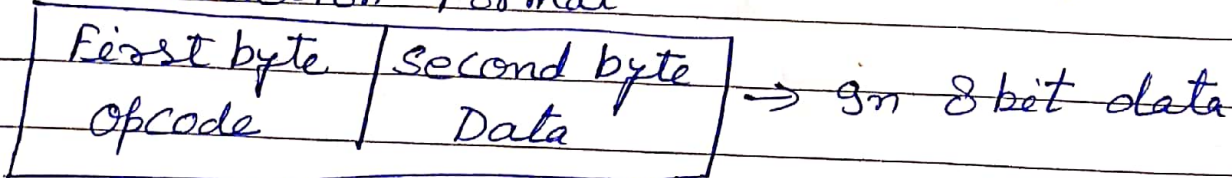
- i) operation to be performed.
- ii) Address of source of data
- iii) Address of destination of result.

"The method by which address of source of data or address of destination of result is given in the instruction is called addressing mode."

There are five types of addressing modes in microprocessor 8085.

1- Immediate addressing mode - In this mode data is present in the instruction. or The 8/16 bit data is given directly along with the instruction. mostly the instructions with letter I (Immediate) fall under this category. The length of the instruction is two or three bytes.

Instruction Format



eg. MVI E, ABH → ABH will be moved or copied to the register E.

E ← ABH
↓ operand

Direct addressing Mode - In this mode the address of data is directly specified with instruction.

In this the data is present in memory. Now this address (16 bit) may be address of source of data or address of destination of result. Byte 2 and 3 contains the address of data. The length of the instruction is three byte.

eg.

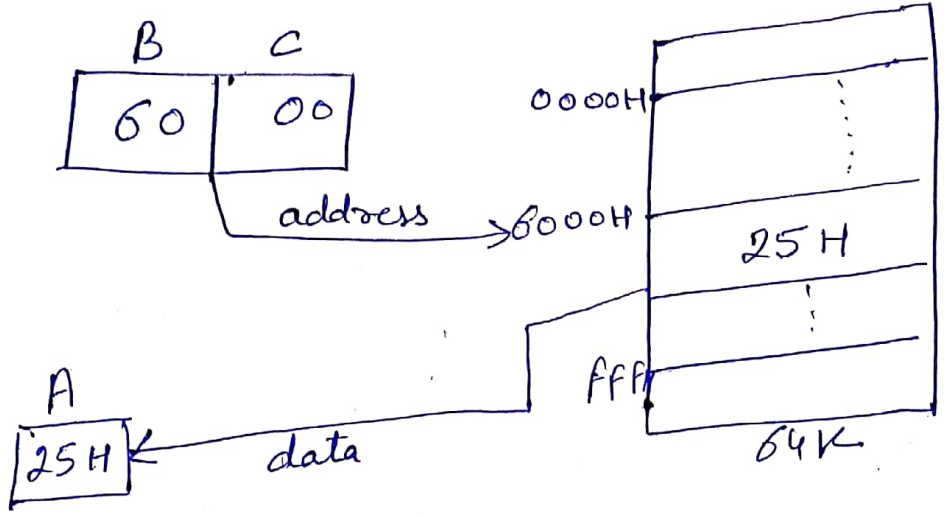
I. LDA 5000H → This instruction loads the contents of specified memory location (5000H) in accumulator.

II. STA 2500H → This instruction stores the content of accumulator in specified memory location 2500H.

Register Indirect or Indirect addressing Mode:-

In this mode the data required for executing the instruction is present in memory location. The 16 bit address of this memory location is present in 16 bit register pair and name of this 16 bit register pair is given along with instruction. OR the memory address is specified indirectly by the content of register pair. The length of instruction is one byte.

I. LDAX B - This instruction load the contents of memory location whose address is in the register pair BC, into accumulator.



(ii) MOV M, A

5. Implied Addressing Mode or Implicit Addressing Mode :-

of address of source of data as well as address of destination of results are fixed, then there is no need to give any data/operand along with the instructions and such instructions are called Implied addressing mode instructions. Actually the location of data is contained within the opcode itself. Generally, in this mode, operations are performed on the contents of accumulator. The length of the instruction is one byte.

- eg. CMA - complement Accumulator
- DAA - Decimal adjust accumulator
- RAL -