



LECTURE TWO

Addressing Mode & INTERRUPTS IN 8085 MICROPROCESSOR

BY:

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Instruction for Interrupts:-

1. Enable Interrupt (EI):-

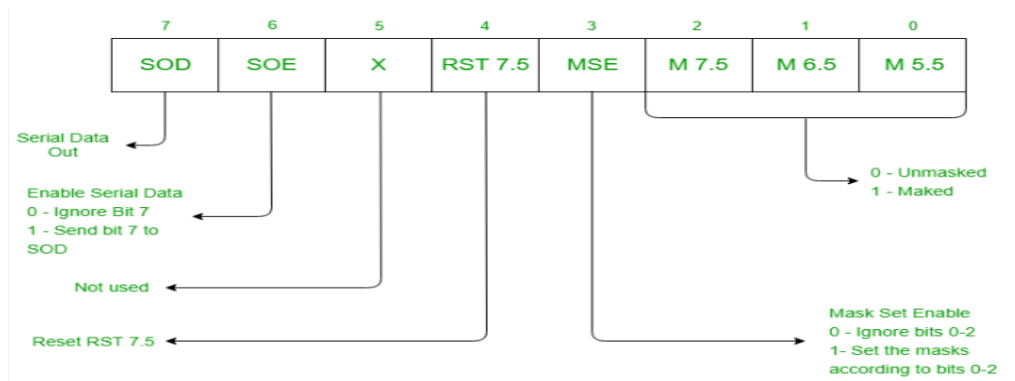
The interrupt enable flip-flop is set and all interrupts are enabled following the execution of next instruction followed by EI. No flags are affected. After a system reset, the interrupt enable flip-flop is reset, thus disabling the interrupts. This instruction is necessary to enable the interrupts again (except TRAP).

2. Disable Interrupt (DI):-

This instruction is used to reset the value of enable flip-flop hence disabling all the interrupts. No flags are affected by this instruction.

3. Set Interrupt Mask (SIM):-

It is used to implement the hardware interrupts (RST 7.5, RST 6.5, RST 5.5) by setting various bits to form masks or generate output data via the Serial Output Data (SOD) line. First the required value is loaded in accumulator then SIM will take the bit pattern from it.



Addressing modes in 8085 microprocessor

The way of specifying data to be operated by an instruction is called addressing mode. In 8085 microprocessor there are 5 types of addressing modes:

1. Immediate Addressing Mode:

In immediate addressing mode the source operand is always data. If the data is 8-bit, then the instruction will be of 2 bytes, if the data is of 16-bit then the instruction will be of 3 bytes.



Examples:

MVI B 45 (move the data 45H immediately to register B)

LXI H 3050 (load the H-L pair with the operand 3050H immediately)

JMP address (jump to the operand address immediately)

2. Register Addressing Mode:

In register addressing mode, the data to be operated is available inside the register(s) and register(s) is (are) operands. Therefore the operation is

Examples:

MOV A, B (move the contents of register B to register A)

ADD B (add contents of registers A and B and store the result in register A)

INR A (increment the contents of register A by one) performed within various registers of the microprocessor.



3. Direct Addressing Mode:

In direct addressing mode, the data to be operated is available inside a memory location and that memory location is directly specified as an operand. The operand is directly available in the instruction itself.

Examples:

LDA 2050 (load the contents of memory location into accumulator A)

LHLD address (load contents of 16-bit memory location into H-register pair)

IN 35 (read the data from port whose address is 01).

4. Register Indirect Addressing Mode:

In register indirect addressing mode, the data to be operated is available inside a memory location and that memory location is indirectly specified by a register pair.

Examples:

MOV A, M (move the contents of the memory location pointed by



the H-L pair to the accumulator).

LDAX B (move contents of B-C register to the accumulator)

LXIH 9570 (load immediate the H-L pair with the address of the location 9570).

5. Implied/Implicit Addressing Mode

In implied/implicit addressing mode the operand is hidden and the data to be operated is available in the instruction itself.

Examples:

CMA (finds and stores the 1's complement of the contents of accumulator A in A)

RRC (rotate accumulator A right by one bit)

RLC (rotate accumulator A left by one bit).