**Addressing modes in 8085 microprocessor**

Prerequisite – [Addressing modes](https://www.geeksforgeeks.org/addressing-modes/)   
The way of specifying data to be operated by an instruction is called addressing mode.

**Types of addressing modes –**   
In 8085 microprocessor there are 5 types of addressing modes: 

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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)

1. **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 performed within various registers of the microprocessor.

**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)

1. **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-L register pair)   
IN 35 (read the data from port whose address is 35)

1. **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)

1. **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)