



**SUBJECT: MICROPROCESSOR ARCHITECTURE  
AND PROGRAMMING**

**TOPIC : ADDRESSING MODES OF 8085**

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**TOPIC:**

**ADDRESSING MODES OF 8085**



# Addressing modes of 8085

- The different ways by which the address of the data to be operated upon may be specified in an instruction is called addressing modes

# 5 types of addressing modes

- Direct addressing
- Register addressing
- Register indirect addressing
- Immediate addressing
- Implicit addressing

# Direct addressing

- In this, the address of operand is explicitly specified within the instruction itself
- All such instructions are 3 bytes long with only exception with the IN and OUT instructions each of which is 2 byte long

- Example:
- LDA 8000H : transfer the contents of memory location 8000H to accumulator
- STA 8000H: Store the contents of accumulator in memory location 8000H

# Register addressing



- The instruction specifies the register or register pair in which data is located
- In 8085 instruction using register addressing are typically one byte instructions

- Example:
- `MOV A,B` : move the contents of register B to accumulator.
- `ADD B` : Add contents of register B to Accumulator



# Register indirect

- The instruction specifies a register pair which contains the memory address where the data is located
- The high order bits of address are in the first register and low order bits in the second

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- Example
  - LDAX B: Load the accumulator with contents of a memory location, addressed by B,C register pair

# Immediate addressing

- In this the operand is specified in the instruction itself
- Data will be either in 8 bit or in 16 bit .least significant bit first, most significant bit second



- Eg:

- MVI A,62 : move data 62 to Accumalator



# Implicit addressing

- In this, op code does not specify operand explicitly but, it is implied is known as implied addressing mode.
- There are certain instructions that operate only on one operand. such instructions assume that the operand is in accumulator address specification



- Eg

- CMA :compliment the content of Accumulator

