ADDRSSING MODES

The term addressing modes refers to the way in which the operand of an instruction is specified.

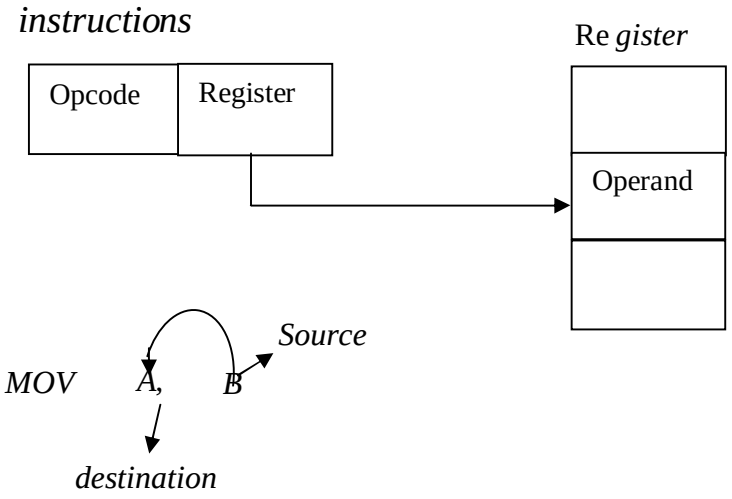
Types of Addressing Modes

The process of identifying the operands for a particular instruction can be carried out in several ways.

- Immediate addressing mode
- Direct addressing mode
- Register addressing mode
- Indirect addressing mode
- Implicit addressing mode

Resister Addressing Modes

1. The source and destination operands are general purpose registers.
2. The register addressing mode instructions are generally of one byte i.e. it has opcode only.
3. The opcode specifies the operations and registers to be used to perform the operation.



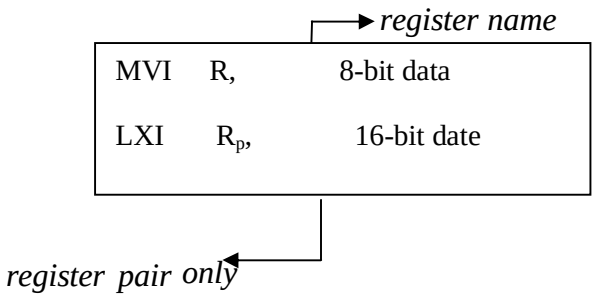
Ex. :-

1. MOV B,C (this instructions will move the content of the register C into the register B)
2. ADD B (this instruction will add the content of the register B with the content of accumulator A and the result is scored in A)
3. PCHL (this instruction will transfer the content of HL register pair in into the program counter)

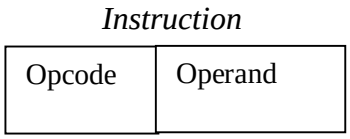
Immediate Addressing Mode:

The data (8/16-bit) is specified in the instructions itself.

They are instructions of either 2 byte or 3 byte long.



The instructions containing the letter 'I' indicate the immediate addressing mode.

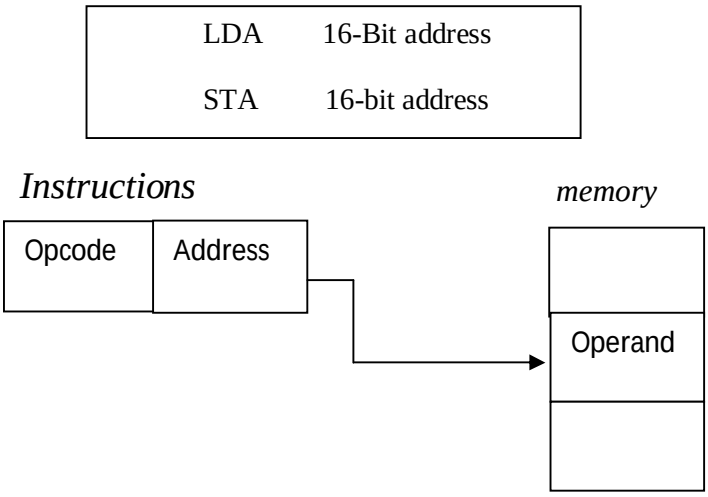


1. MVI B, 10H : this instruction will move the immediate data 10 H into the register B.
2. LXI H, 4050 H: this instruction will transfer the immediate date of 4050 H into the memory to(M) which is pointed by H-L register pair.

Direct Addressing Mode:

The 16 bit address of the operand is given within the instruction itself.

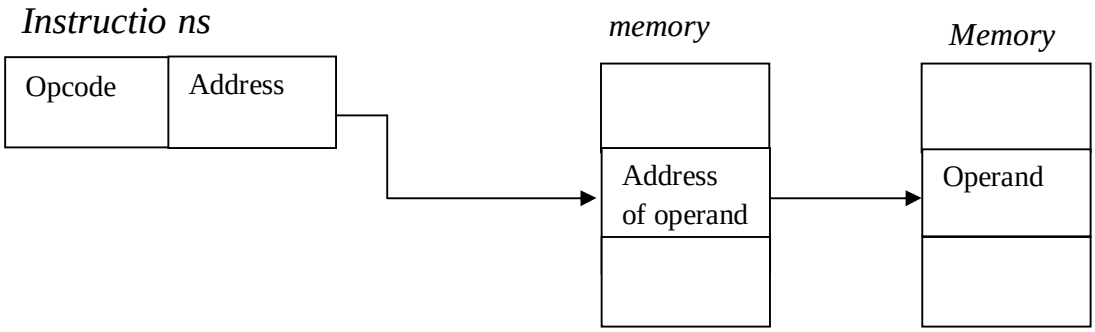
They are 3-byte instruction



1. LDA 2010 H : This instruction will load accumulator directly from the memory location 2010H.
2. STA 4000H : This instructions store the contents of accumulation into the specified memory location i.e. 4000H.

Indirect Addressing Mode:

The instruction reference the memory thorough resister pair i.e. the memory address where the operand is located is specified by the content of register pair.



1. 3 byte
2. MOV B, M: this instruction will the move the contents of the specified memory location (M) pointed by HL register pair into the register B.
3. MOV M, B - this instruction will be contents of register be into the specified memory location M pointed by HL register pair.

Implied /Implicit

1. The implied addressing mode does not require any operand
2. The data is specified within the opcode itself, they are 1-byte instructions
3. The data is supposed to be present generally in the accumulator
4. Ex. CMA, RAL, RLC, RRC, RAR, CMC, STC, XGHG, is the examples of it.