Aim

To understand about 8085 Instructions sets - Data Transfer and Arithmetic Instructions.

Practice Assignments

1. Analyze the different Data transfer instructions by checking the usage on the 8085 simulator.
    - MOV
    - MVI
    - LDA
    - STA

- Ans:

    1. MOV
        - Syntax: `MOV DESTINATION, SOURCE`
        - Working: Copy data from source address to destination address
        - Source and Destination addresses can be of registers or memory
    2. MVI
        - Syntax: `MVI DESTINATION, VALUE`
        - Working: Move imidiate data to a register or memory location
    3. LDA
        - Syntax: `LDA SOURCE`
        - Working: Load accumulator from the given 16 bit address
    4. STA
        - Syntax: `STA DESTINATION`
        - Working: Set the value of the given memory location with the value of the accumulator

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1. Analyze the different Arithmetic instructions by checking the usage on the 8085 simulator.
    - ADD
    - ADC
    - ADI
    - ACI
    - SUB
    - SBB
    - SUI
    - SBI

- Ans:

- **Note:** All these store the answer to the accumulator register

1. ADD
    - Syntax: `ADD SOURCE`
    - Working: Simple addition
2. ADC
    - Syntax: `ADC SOURCE`
    - Working: Addition with carry
3. ADI
    - Syntax: `ADI SOURCE`
    - Working: Addition with imidiate value
4. ACI
    - Syntax: `ACI SOURCE`
    - Working: Addition with imidiate value, carry edition
5. SUB
    - Syntax: `SUB SOURCE`
    - Working: Simple subtraction
6. SBB
    - Syntax: `SBB SOURCE`
    - Working: Subraction with borrow
7. SUI
    - Syntax: `SUI SOURCE`
    - Working: Subtraction with immidiate value
8. SBI
    - Syntax: `SBI SOURCE`
    - Working: Subtraction with immidiate value, borrow edition

LAB ASSIGNMENT

QUE-1

- Write an Assembly language program to perform addition of two 8 bit numbers. Constraint: The numbers should be such that the result is limited to 8 bits.

1. Both numbers are stored at Memory Locations.

```
MVI B , 20H
MVI C , 00H
MVI H , 40H
MVI L , 00H
MVI M , 10
ADD M
MOV H , B
MOV L , C
MVI M , 10
ADC M
HLT
```

2. First number has to be present in Register and second number has to be present at memory location (2000H).

```
MVI B , 10
MVI H , 20H
MVI L , 00H
MVI M , 10
ADD B
ADC M
HLT
```

QUE-2

- Write an Assembly language program to perform the subtraction of two 8-bit numbers.

```
MVI B , 20
MVI C , 10
ADD B
SUB C
HLT
```

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