

## LAB MST

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**Branch: CSE**

**Semester: 4th**

**Subject Name: MPI Lab**

**UID: 20BCS1812**

**Section/Group: 607A**

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**Subject Code: 22E-20CSP-253**

### 1) Aim/Overview of the practical:

**Write an assembly language program to add two 8 bit numbers stored at address 2050 and address 2051 in 8085 microprocessor. The starting address of the program is taken as 2000.**

**Apparatus/Simulator used: 8085 simulator**

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**Algorithm:**

- 1. LXI H,2050H loads 2050 in H-L pair**
- 2. MOV A,M moves the first operator to A from memory.**
- 3. INX H increments the H-L pair.**
- 4. MOV B,H moves the second operator to B .**
- 5. MVI C,00 intialized the register C with 00H.**
- 6. ADD B adds B with A.**
- 7. JNC 00D jumps to the address 00DH if there is no carry.**
- 8. INR C increments register C**
- 9. INX H increments the H-L pair.**
- 10. MOV M,A moves results from register A to memory.**
- 11. INX H increments the H-L pair.**
- 12. MOV M,C moves carry from register C to memory**
- 13. HLT end of the execution.**

**Steps for experiment/practical/Code:**

**// NAME: RAJIV PAUL**

**// UID: 20BCS1812**

**# BEGIN 2000H**

**LXI H,2050**

**MOV A,M**

**INX H**

**MOV B,M**

**MVI C,00**

**ADD B**

**JNC 000D**

**INR C**

**INX H**

**MOV M,A**

**INX H**

**MOV M,C**

**HLT**

**# ORG 2050H**

**# DB 07H,09H**

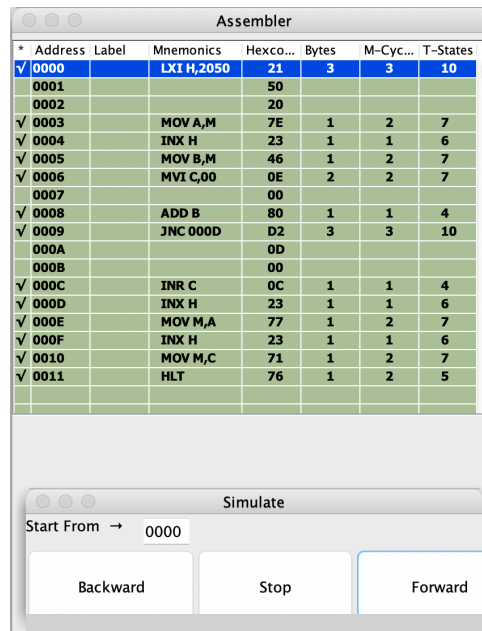
## Simulation:

### 1. CODE IN EDITOR WINDOW:



```
// NAME: RAJIV PAUL
// UID: 208CS1812
# BEGIN 2000H
    LXI H,2050
    MOV A,M
    INX H
    MOV B,M
    MVI C,00
    ADD B
    JNC 000D
    INR C
    INX H
    MOV M,A
    INX H
    MOV M,C
    HLT
# ORG 2050H
# DB 07H,09H
```

### 2. ASSEMBLER WINDOW:



* Address	Label	Mnemonics	Hexco...	Bytes	M-Cyc...	T-States
✓ 0000		LXI H,2050	21	3	3	10
0001			50			
0002			20			
✓ 0003		MOV A,M	7E	1	2	7
✓ 0004		INX H	23	1	1	6
✓ 0005		MOV B,M	46	1	2	7
✓ 0006		MVI C,00	0E	2	2	7
0007			00			
✓ 0008		ADD B	80	1	1	4
✓ 0009		JNC 000D	D2	3	3	10
000A			0D			
000B			00			
✓ 000C		INR C	0C	1	1	4
✓ 000D		INX H	23	1	1	6
✓ 000E		MOV M,A	77	1	2	7
✓ 000F		INX H	23	1	1	6
✓ 0010		MOV M,C	71	1	2	7
✓ 0011		HLT	76	1	2	5

Simulate

Start From → 0000

Backward Stop Forward

### 3. REGISTERS:

Registers :

Register	Value	7	6	5	4	3	2	1	0
Accumulator	10	0	0	0	1	0	0	0	0
Register B	09	0	0	0	0	1	0	0	1
Register C	00	0	0	0	0	0	0	0	0
Register D	00	0	0	0	0	0	0	0	0
Register E	00	0	0	0	0	0	0	0	0
Register H	20	0	0	1	0	0	0	0	0
Register L	50	0	1	0	1	0	0	0	0
Memory(M)	07	0	0	0	0	0	1	1	1

Register	Value	S	Z	*	AC	*	P	*	CY
Flag Register	10	0	0	0	1	0	0	0	0

Type	Value
Stack Pointer(SP)	0000
Memory Pointer (HL)	2050
Program Status Word(PSW)	1010
Program Counter(PC)	0003
Clock Cycle Counter	189
Instruction Counter	28

SOD	SID	INTR	TRAP	R7.5	R6.5	R5.5
0	0	0	0	0	0	0

For SIM instruction

SOD	SDE	*	R7...	MSE	M...	M...
0	0	0	0	0	0	0

For RIM instruction

SID	I7.5	I6.5	I5.5	IE	M...	M...	M...
0	0	0	0	0	0	0	0

No. Converter Tool :

Hexadecimal    Decimal    Binary

### 4. MEMORY:

Registers    **Memory**    Devices

Memory Editor

Memory Range: 000    ----    FFFF

Memory Address	Value
0001	50
0002	20
0003	7E
0004	23
0005	46
0006	0E
0008	80
0009	D2
000A	0D
000C	0C
000D	23
000E	77
000F	23
0010	71
0011	76
2050	07
2051	09
2052	10

☐ Show entire memory content  
☒ Show only loaded memory location  
☐ Store directly to specified memory location



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## RESULT

### BEFORE EXECUTION:

2050H: 07

2051H: 09

### AFTER EXECUTION:

2052H: 10

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**Learning outcomes (What I have learnt):**

- 1.Learnt about 8085 simulator**
- 2. Learnt how to perform 8 bits addition.**
- 3.**
- 4.**
- 5.**

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**Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):**

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			