Experiment 2.2

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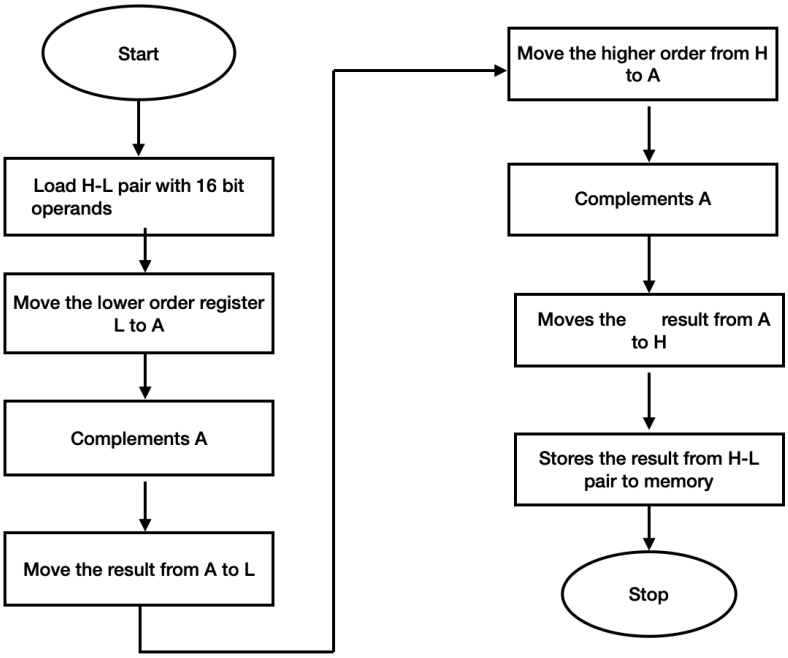
Branch: CSE **Section/Group:607A**
Semester: 4th **Date of Performance: 22/03/2022**
Subject Name:MPI Lab **Subject Code: 22E-20CSP-253**

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

a) 1's complement of 16 bit number.

Apparatus/Simulator used: 8085 simulator

Flowchart:


Start
Load H-L pair with 16 bit operands
Move the lower order register L to A
Complements A
Move the result from A to L
Move the higher order from H to A
Complements A
Moves the result from A to H
Stores the result from H-L pair to memory
Stop

Algorithm:

1. **LHLD 7050 loads H-L pair with data from 7050H memory location.**
2. **MOV A,L moves data from reg, L to A.**
3. **CMA compliments the accumulator.**
4. **MOV L,A moves result from A to reg. L.**
5. **MOV A,H moves data from reg. H to A.**
6. **CMA compliments the accumulator.**
7. **MOV H,A moves result from A to reg. H.**
8. **SHLD 7052 stores result at 7052H.**
9. **HLT end of the execution.**

Steps for experiment/practical/Code:

 # BEGIN 0000H

LHLD 7050

MOV A,L

CMA

MOV L,A

MOV A,H

CMA

MOV H,A

SHLD 7052

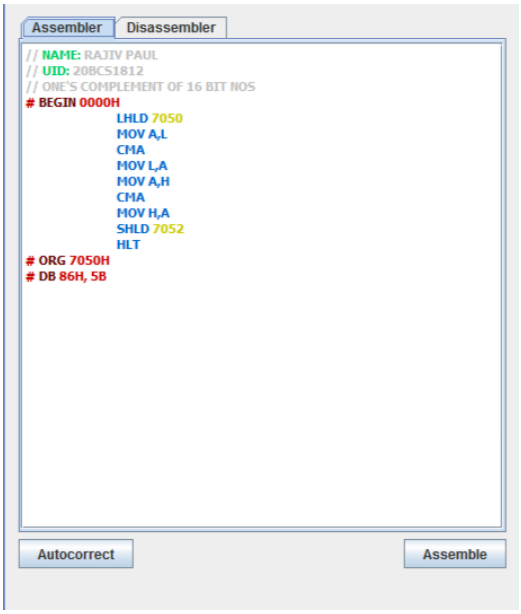
HLT

 # ORG 7050H

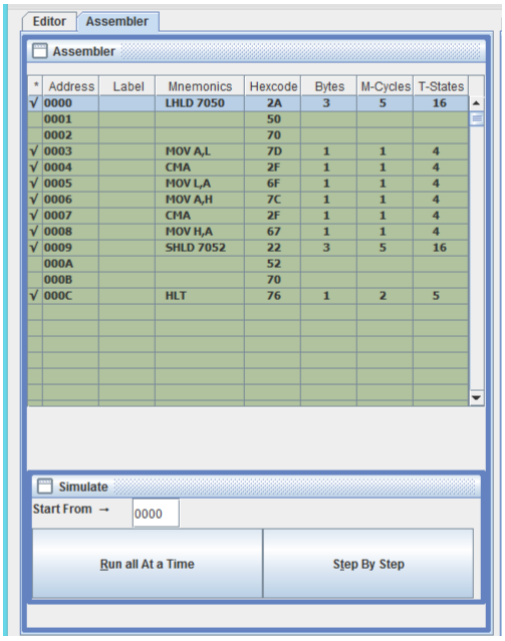
 # DB 86H, 5B

Simulation:

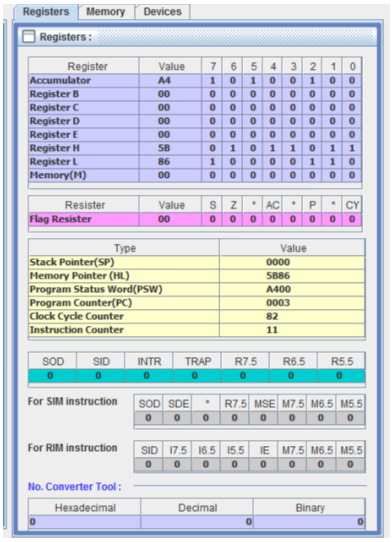
1. CODE IN EDITOR WINDOW:



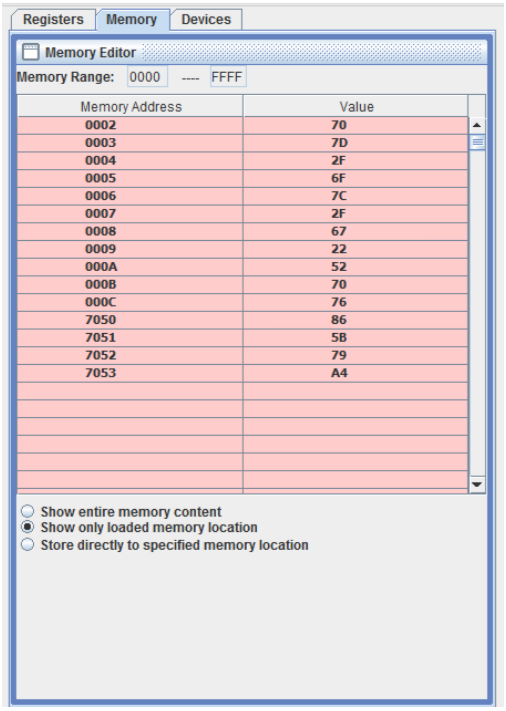
2. ASSEMBLER WINDOW:



3. REGISTERS:



4. MEMORY:



RESULT

BEFORE EXECUTION:

7050H: 86H
7051H: 5B

AFTER EXECUTION:

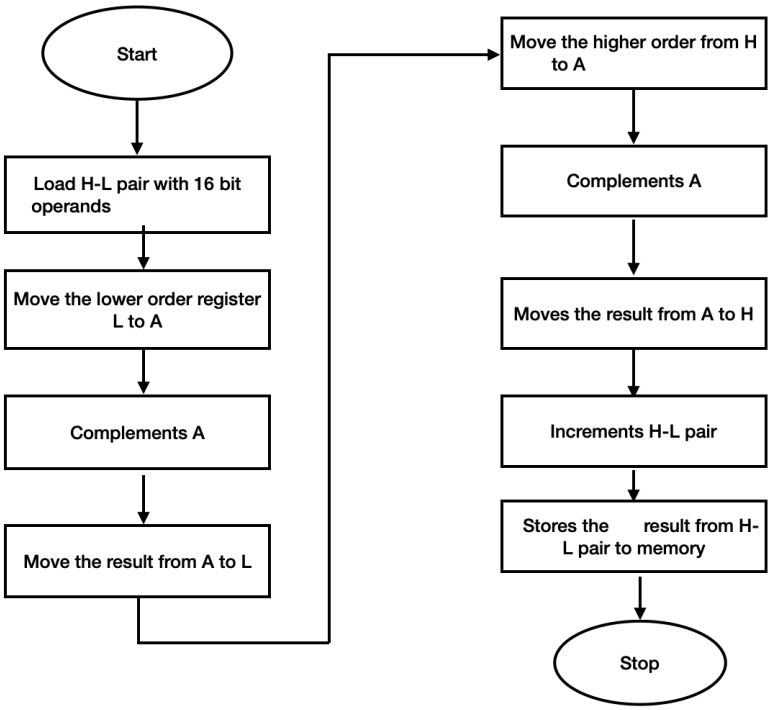
7053H: A4

Aim/Overview of the practical:

b) 2's complement of 16 bit number.

Apparatus/Simulator used: 8085 simulator

Flowchart:



Algorithm:

1. **LHLD 7050 loads H-L pair with data from 7050H memory location.**
2. **MOV A,L moves data from reg, L to A.**
3. **CMA compliments the accumulator.**
4. **MOV L,A moves result from A to reg. L.**
5. **MOV A,H moves data from reg. H to A.**
6. **CMA compliments the accumulator.**
7. **MOV H,A moves result from A to reg. H.**
8. **INX H increments the H-L pair by 1.**
9. **SHLD 7052 stores result at 7052H.**
10. **HLT end of the execution.**

Steps for experiment/practical/Code:

 # BEGIN 0000H

LHLD 7050

MOV AL

CMA

MOV LA

MOV A,H

CMA

MOV H,A

SHLD 7052

INX H

SHLD 7054

HLT

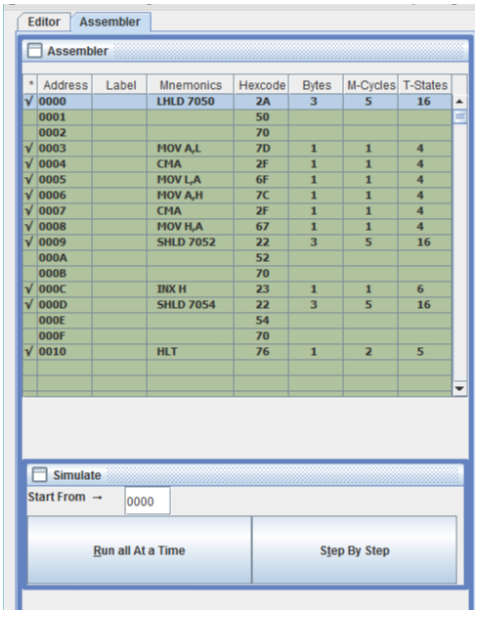
 # ORG 7050H

 # DB 86H, 5B

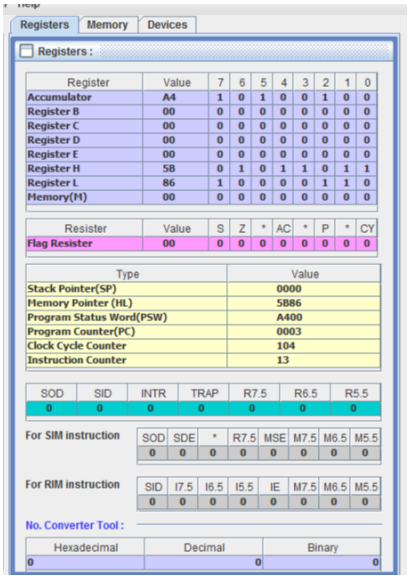
Simulation:

1. CODE IN EDITOR WINDOW:

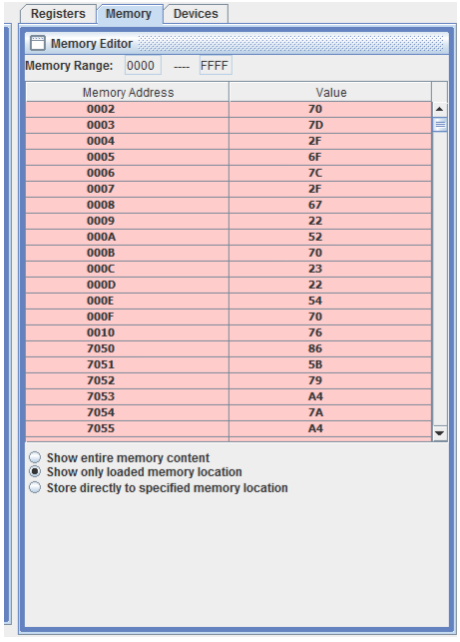
2. ASSEMBLER WINDOW:



3. REGISTERS:



4. MEMORY:



RESULT

BEFORE EXECUTION:

7050H: 86H
7051H: 5B

AFTER EXECUTION:

7053H: A4
7054H: 7A
7055H: A4

Learning outcomes (What I have learnt):

1.Learnt about 8085 simulator

2. Learnt how to 1's and 2's complements of 16bit number.

3. Learnt what LHLD works for.

4. Learnt about CMA and SHLD.

5.

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.			