Addition of Two 16 bit Number

Student Name: UID:

Branch: CSE Section/Group:

Semester: 4th Date ofPerformance:

Subject Name: MPI LAB Subject Code: 20CSP-253

1. Aim/Overview of the practical:

Add two 16 bit number.

2. Task to be done:

We have to add two 16 bit number and store them in a memory.

3. Apparatus/Simulator used (For applied/experimental sciences/materials based labs):

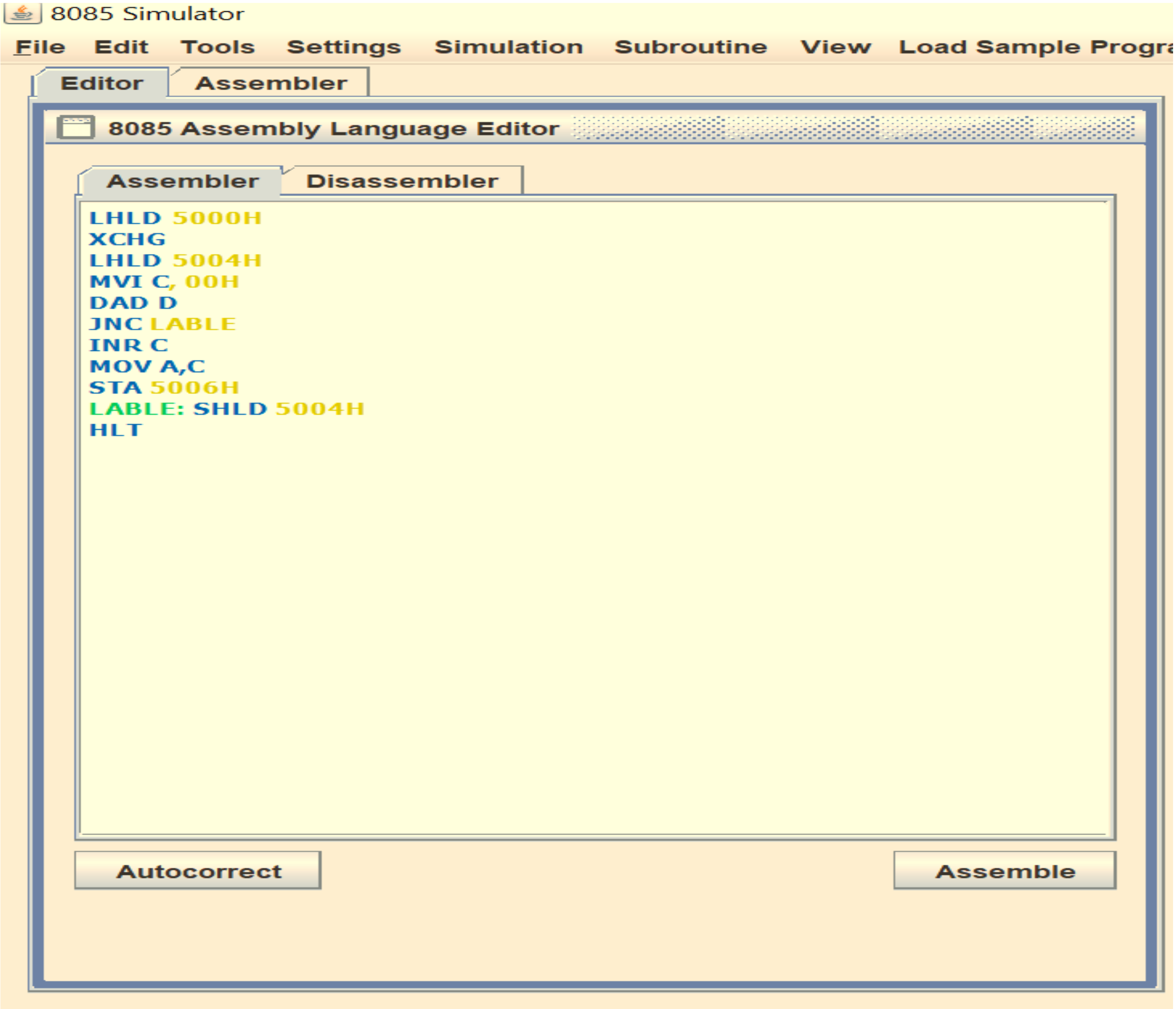
1. JUBIN
2. JAVA

4. Algorithm/Flowchart (For programming based labs):

```
 LHLD 5000H                    //LOAD THE DATA FORM MEMORY PAIR
XCHG                          // EXCHANGE THE DATA OF HL WITH DE
LHLD 5004H                     // LOAD DATA FROM THE MEMORY PAIR IN HL
MVI C, 00H           // MOVE 00HH TO C
DAD D                         // ADD THE NUMBERS
JNC LABLE            // IF THERE IS NO CARRY THEN JUMP TO THE LABLE
INR C                        // IF ANY CARRY IS THERE THE INC THE CARRY
```

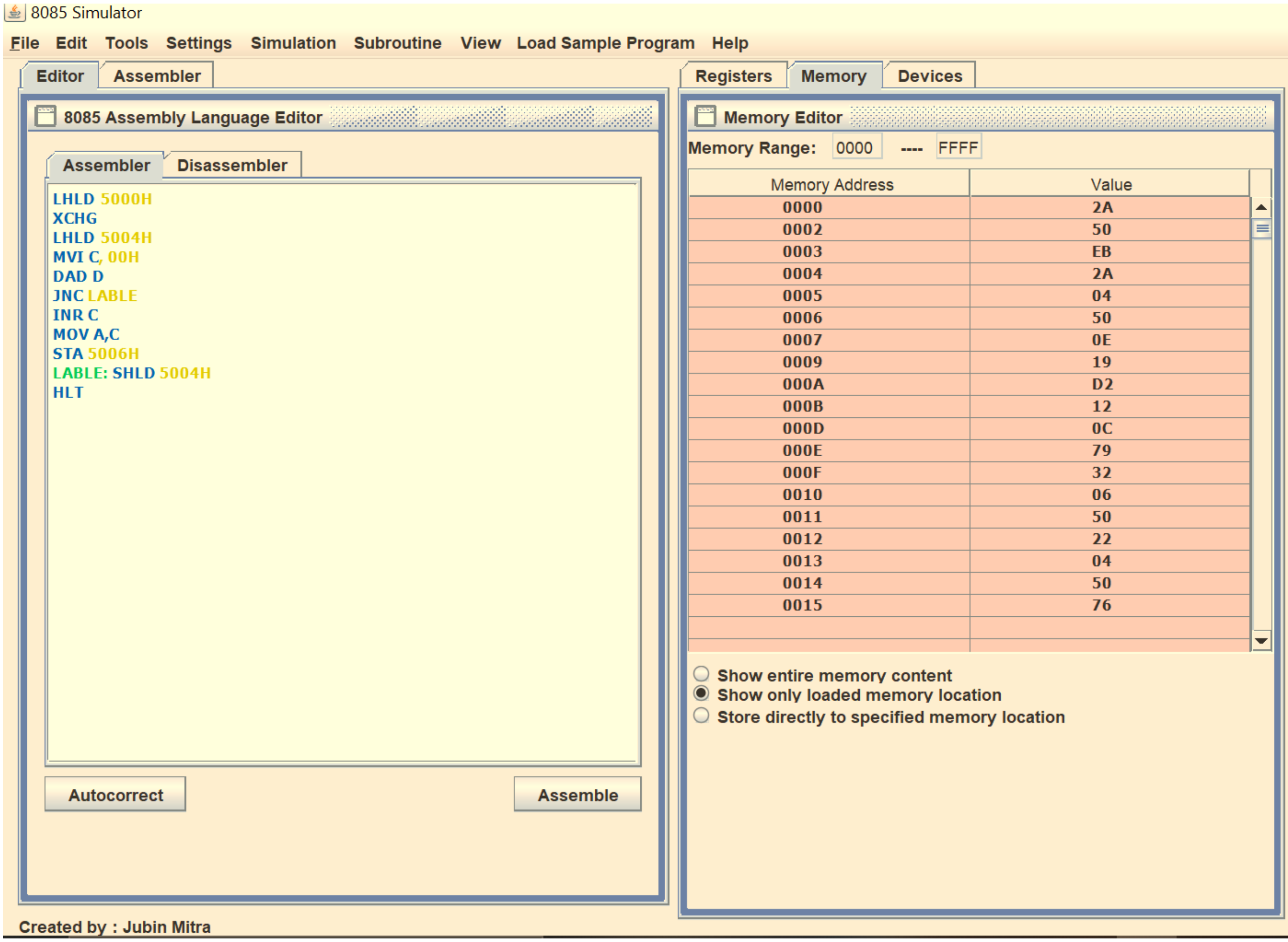
```
MOV A,C                         // MOVE CARRY TO THE ACCUMULATOR
STA 5006H            // STOR THE ACCUMULATOR VALUE AT 1006h
LABLE: SHLD 5004H           // STORE THE ANS AT 1004H
HLT                    //STOP TO CHECK FURTHUR INSTRUCTIONS
```

5. Description/ Code:



```
LHLD 5000H
XCHG
LHLD 5004H
MVI C, 00H
DAD D
JNC LABLE
INR C
MOV A,C
STA 5006H
LABLE: SHLD 5004H
HLT
```

6. Result/Output/Writing Summary:

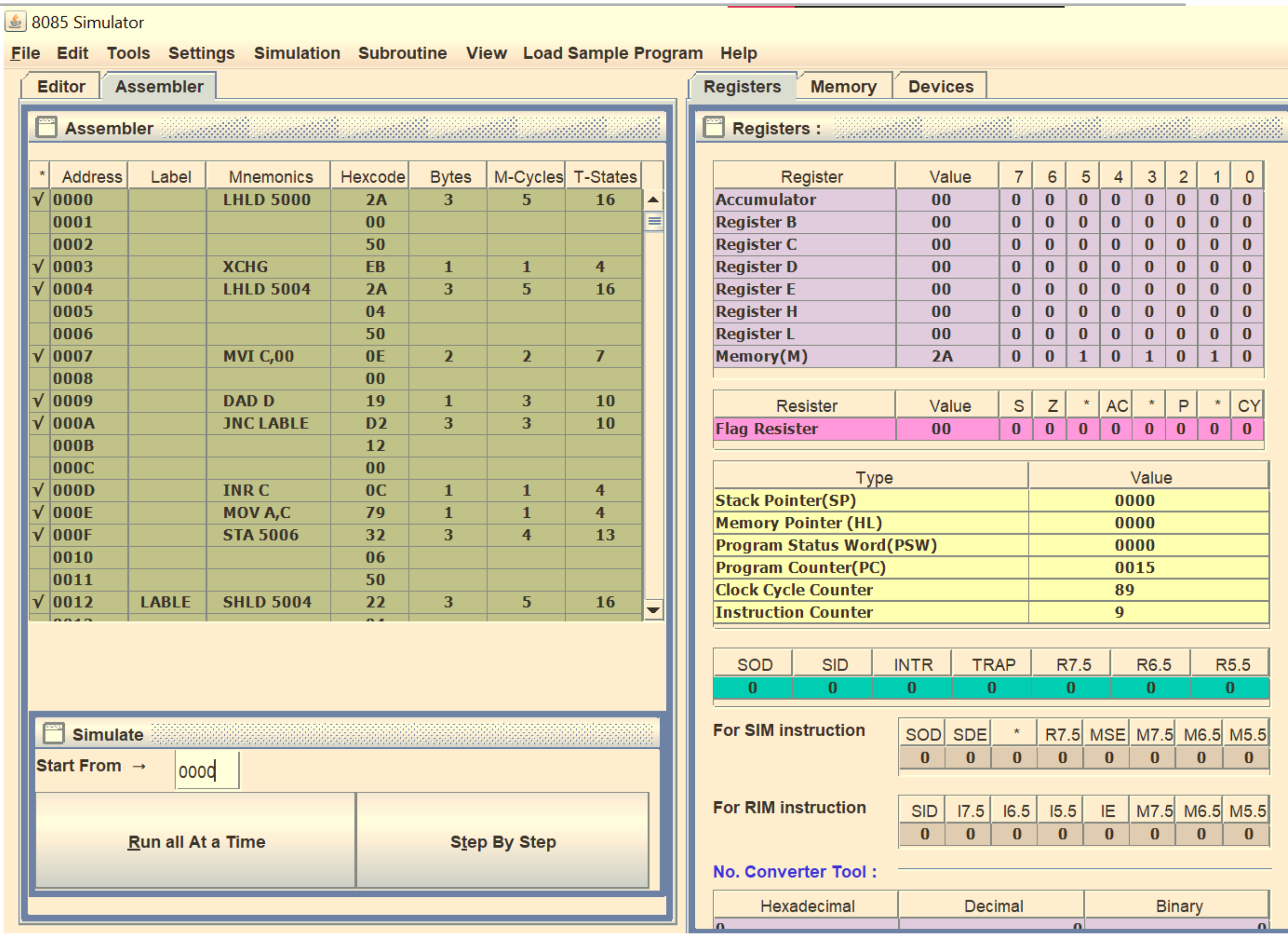


```
LHLD 5000H
XCHG
LHLD 5004H
MVI C, 00H
DAD D
JNC LABLE
INR C
MOV A,C
STA 5006H
LABLE: SHLD 5004H
HLT
```

Memory Range: 0000 ---- FFFF

Memory Address	Value
0000	2A
0002	50
0003	EB
0004	2A
0005	04
0006	50
0007	0E
0009	19
000A	D2
000B	12
000D	0C
000E	79
000F	32
0010	06
0011	50
0012	22
0013	04
0014	50
0015	76

○ Show entire memory content
● Show only loaded memory location
○ Store directly to specified memory location



*	Address	Label	Mnemonics	Hexcode	Bytes	M-Cycles	T-States
√	0000		LHLD 5000	2A	3	5	16
	0001			00			
	0002			50			
√	0003		XCHG	EB	1	1	4
√	0004		LHLD 5004	2A	3	5	16
	0005			04			
	0006			50			
√	0007		MVI C,00	0E	2	2	7
	0008			00			
√	0009		DAD D	19	1	3	10
√	000A		JNC LABLE	D2	3	3	10
	000B			12			
	000C			00			
√	000D		INR C	0C	1	1	4
√	000E		MOV A,C	79	1	1	4
√	000F		STA 5006	32	3	4	13
	0010			06			
	0011			50			
√	0012	LABLE	SHLD 5004	22	3	5	16

Start From → 0000

Register	Value	7	6	5	4	3	2	1	0
Accumulator	00	0	0	0	0	0	0	0	0
Register B	00	0	0	0	0	0	0	0	0
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	00	0	0	0	0	0	0	0	0
Register L	00	0	0	0	0	0	0	0	0
Memory(M)	2A	0	0	1	0	1	0	1	0

Resister	Value	S	Z	*	AC	*	P	*	CY
Flag Resister	00	0	0	0	0	0	0	0	0

Type	Value
Stack Pointer(SP)	0000
Memory Pointer (HL)	0000
Program Status Word(PSW)	0000
Program Counter(PC)	0015
Clock Cycle Counter	89
Instruction Counter	9

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

For SIM instruction

SOD	SDE	*	R7.5	MSE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

For RIM instruction

SID	I7.5	I6.5	I5.5	IE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

No. Converter Tool :

Hexadecimal	Decimal	Binary

Learning outcomes (What I have learnt):

1.

2.

3.

4.

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.			