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Batch-F6

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COA Lab-7

Question 1:

(a)

```
# BEGIN 000H
    LXI H,C050
    MOV A,M
    INX H
    ADD M
    STA C052
    HLT
# ORG 050
# DB 55H , 66H
```

The screenshot displays the 8085 Simulator interface. The main window is divided into several panes. On the left, the 'Assembler' pane shows a table of assembly instructions with columns for Address, Label, Mnemonics, Hexcode, Bytes, M-Cycles, and T-States. The instructions listed are: 0000 LXI H,C050, 0001, 0002 MOV A,M, 0003 INX H, 0004 ADD M, 0005 STA C052, 0006, 0007, 0008, and 0009 HLT. Below the assembler pane is a 'Simulate' section with a 'Start From' field set to 0000 and three buttons: 'Backward', 'Stop', and 'Forward'. On the right, the 'Registers' pane shows the status of various registers and flags. The registers are: Accumulator (00), Register B (00), Register C (00), Register D (00), Register E (00), Register H (00), Register L (00), and Memory(M) (21). The flags are: S (0), Z (0), AC (0), P (0), and CY (0). Below the registers, there are sections for 'Type' (Stack Pointer(SP), Memory Pointer(HL), Program Status Word(PSW), Program Counter(PC), Clock Cycle Counter, Instruction Counter) and 'Value' (0000, 0000, 0000, 0009, 5, 1). At the bottom, there is a 'No. Converter Tool' section with fields for Hexadecimal, Decimal, and Binary, all set to 0. The status bar at the bottom indicates 'Created by : Jubin Mitra' and the system time '10:25 PM Thu 17'.

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)	21	0	0	1	0	0	0	0	1

Register	Value	S	Z	AC	P	CY
Flag Register	00	0	0	0	0	0

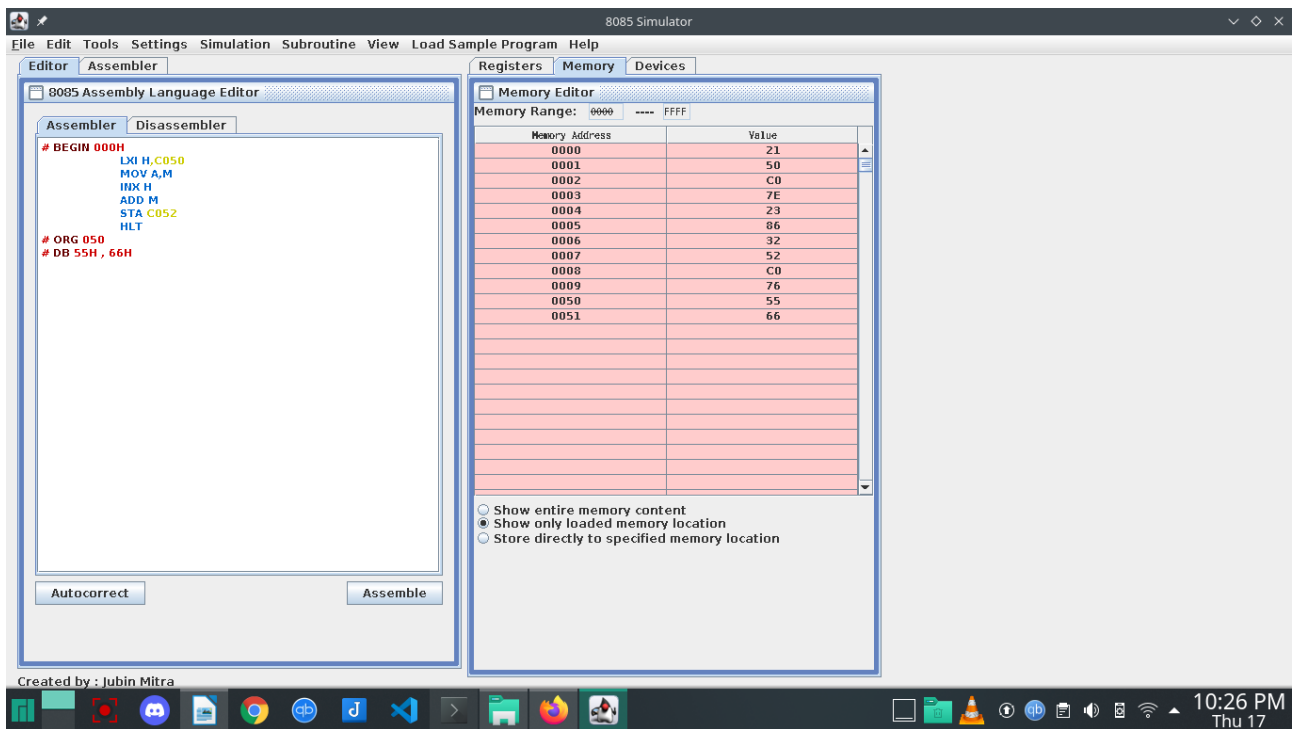
Type	Value
Stack Pointer(SP)	0000
Memory Pointer(HL)	0000
Program Status Word(PSW)	0000
Program Counter(PC)	0009
Clock Cycle Counter	5
Instruction Counter	1

S00	S10	INTR	TRAP	R7.5	R6.5	R5.5
0	0	0	0	0	0	0

For SIM instruction						
S00	S10	* R7.5	MSE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0

For RIM instruction						
S10	I7.5	I6.5	I5.5	IE	M7.5	M6.5
0	0	0	0	0	0	0

No. Converter Tool :		
Hexadecimal	Decimal	Binary
0	0	0



Question 1:

(b)

LHLD C052

XCHG

MVI C,00

DAD D

STA C056

SHLD C054

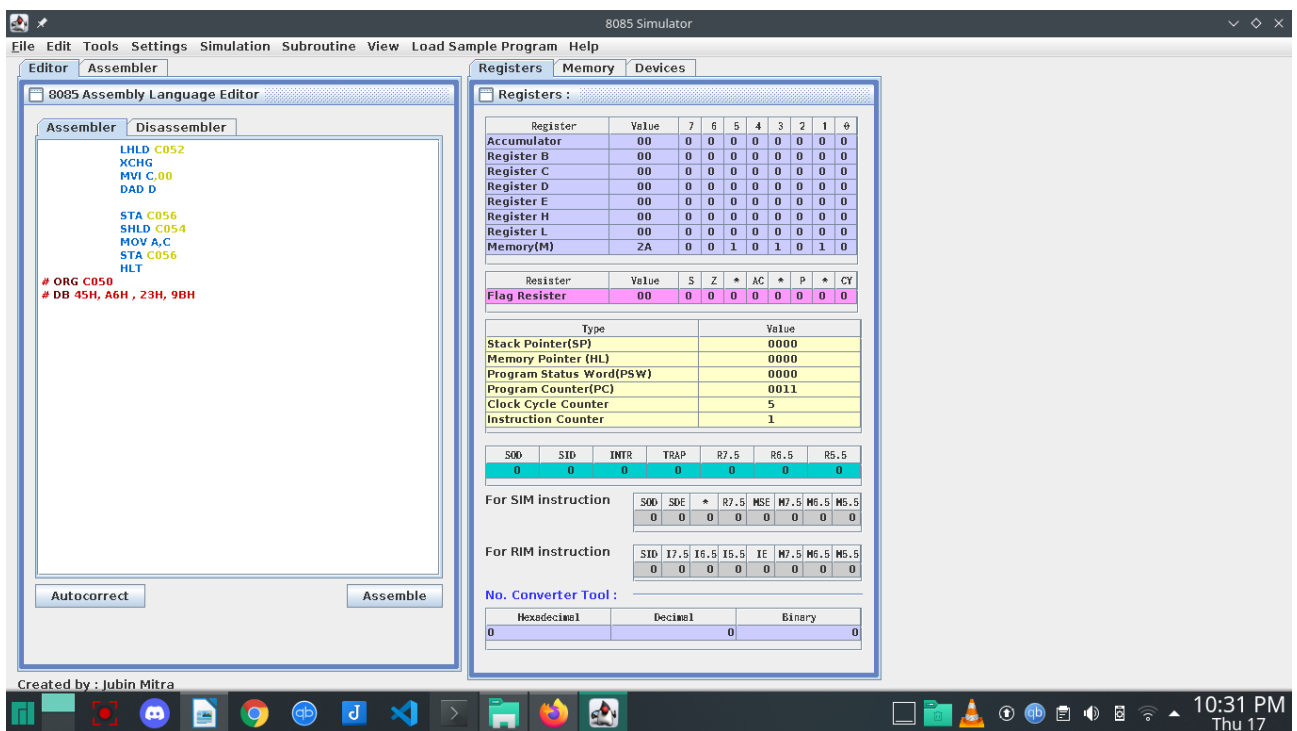
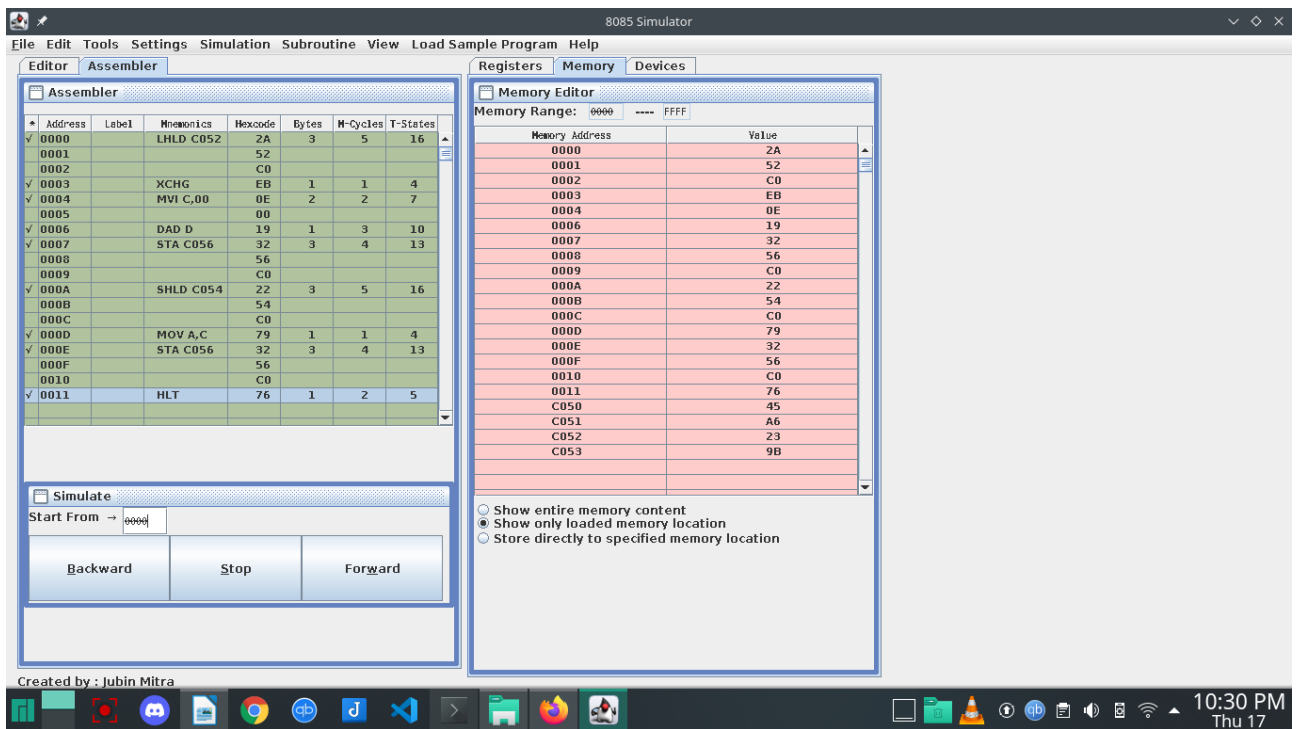
MOV A,C

STA C056

HLT

ORG C050

DB 45H, A6H, 23H, 9BH

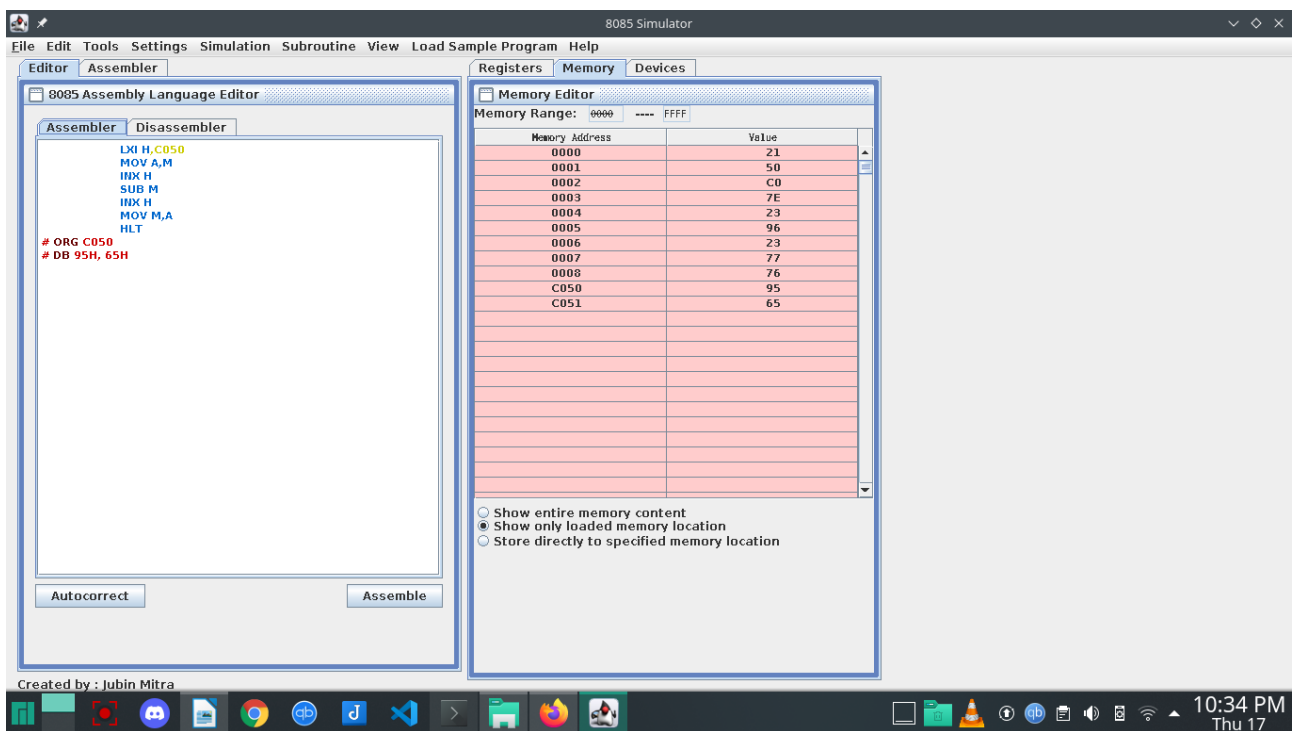
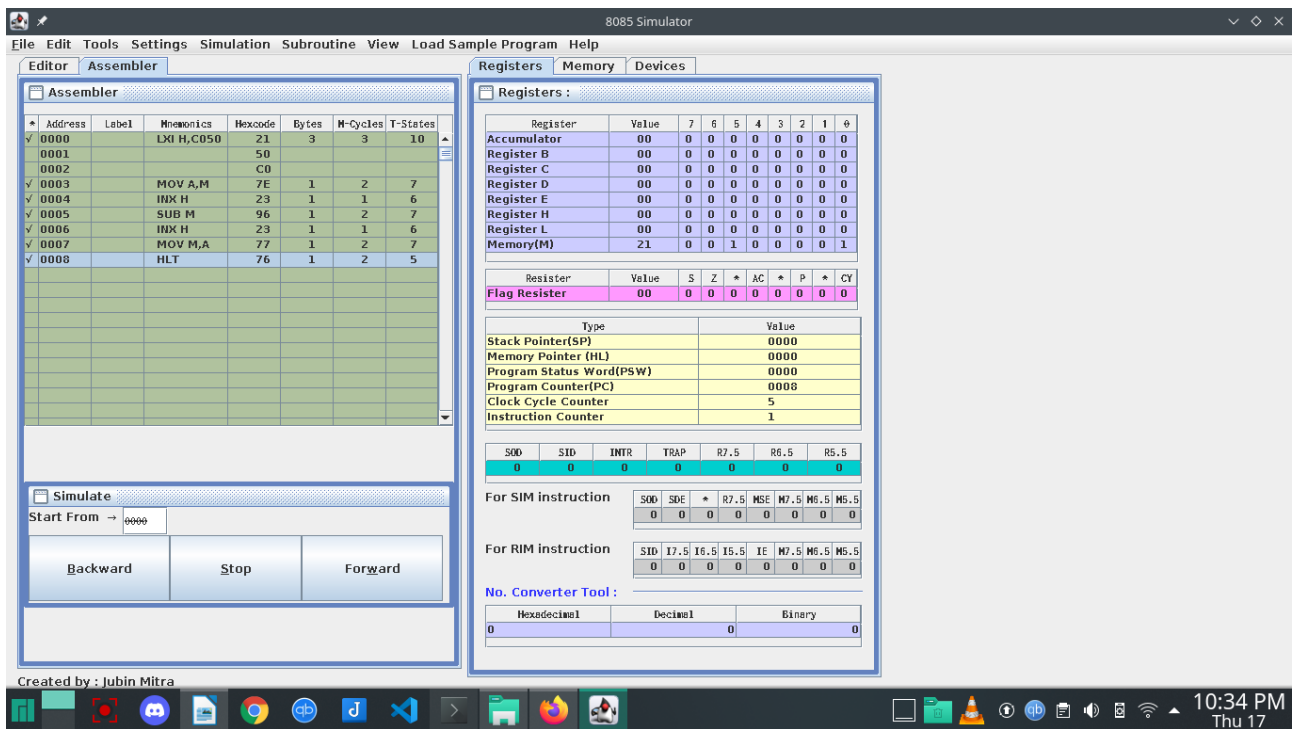


Question 1(c):

```

LXI H,C050
MOV A,M
INX H
SUB M
INX H
MOV M,A
HLT

# ORG C050
# DB 95H, 65H
  
```



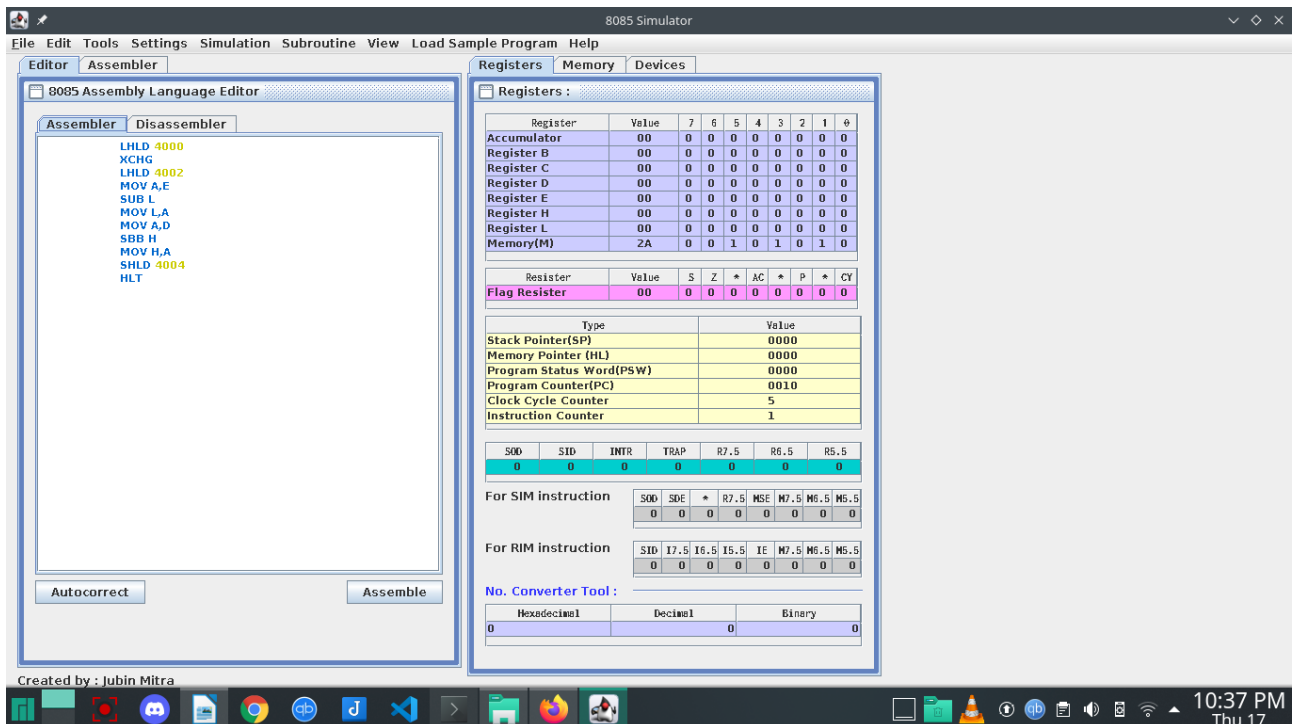
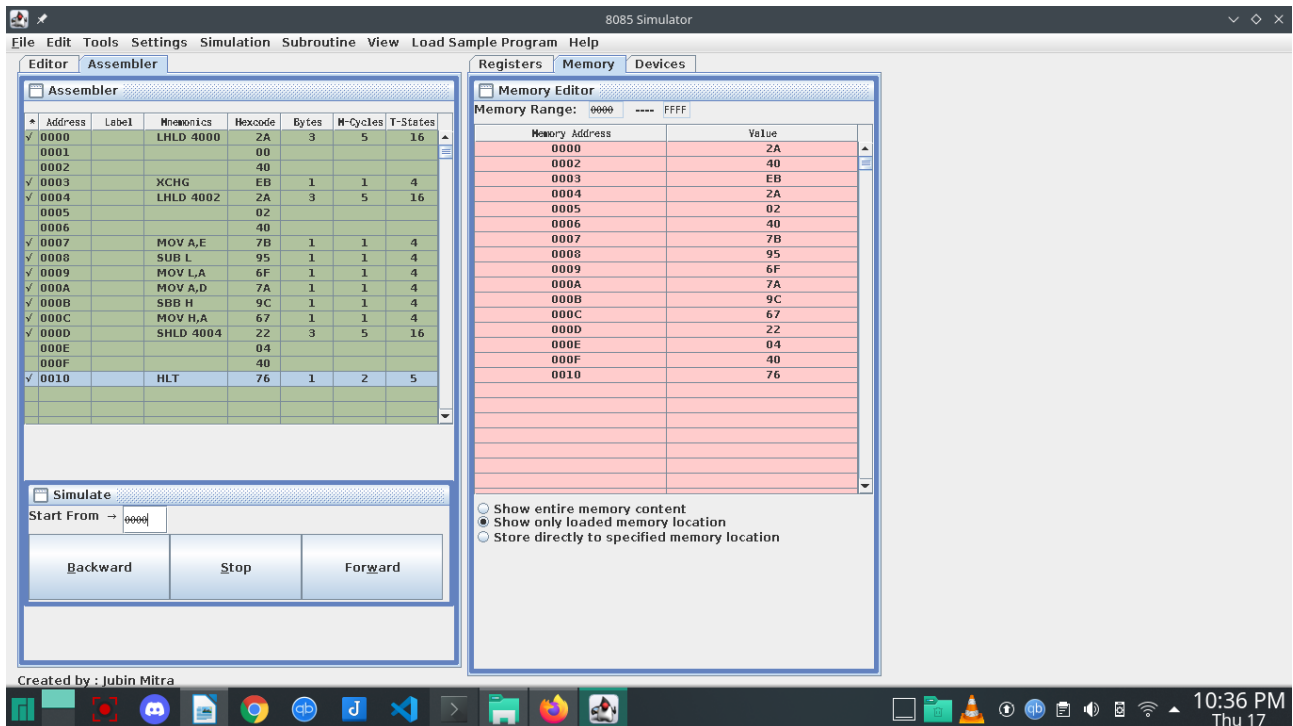
Question 1:

(d)

```

LHLD 4000
XCHG
LHLD 4002
MOV A,E
SUB L
MOV L,A
MOV A,D
SBB H
  
```

```
MOV H,A
SHLD 4004
HLT
```



Question 2:

(a)

```
# ORG 2000H
# BEGIN 2000H
LHLD 0250
```

```
LDA 2503
LXI H,0000
MVI C,08
```

```
LOOP: DAD H
      RAL
      JNC AHEAD
      DAD D
```

```
AHEAD: DCR C
        JNZ LOOP
        SHLD 2504
        HLT
```

```
# ORG 2501H
# DB 84H,00H,56H
```

8085 Simulator

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler Registers Memory Devices

Assembler

Address	Label	Mnemonics	Hexcode	Bytes	M-Cycles	T-States
2000		LHLD 0250	2A	3	5	16
2001			50			
2002			02			
2003		LDA 2503	3A	3	4	13
2004			03			
2005			25			
2006		LXI H,0000	21	3	3	10
2007			00			
2008			00			
2009		MVI C,08	0E	2	2	7
200A			08			
200B	LOOP	DAD H	29	1	3	10
200C		RAL	17	1	1	4
200D		JNC AHEAD	D2	3	3	10
200E			11			
200F			20			
2010		DAD D	19	1	3	10
2011	AHEAD	DCR C	0D	1	1	4
2012		JNZ LOOP	C2	3	3	10

Simulate

Start From → 2000

Backward Stop Forward

Registers

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)	00	0	0	0	0	0	0	0	0

Register	Value	S	Z	AC	P	CY
Flag Register	00	0	0	0	0	0

Type	Value
Stack Pointer(SP)	0000
Memory Pointer (HL)	0000
Program Status Word(PSW)	0000
Program Counter(PC)	2018
Clock Cycle Counter	5
Instruction Counter	1

S00	S10	INTR	TRAP	R7.5	R6.5	R5.5
0	0	0	0	0	0	0

For SIM instruction

S00	S0E	*	R7.5	MSE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

For RIM instruction

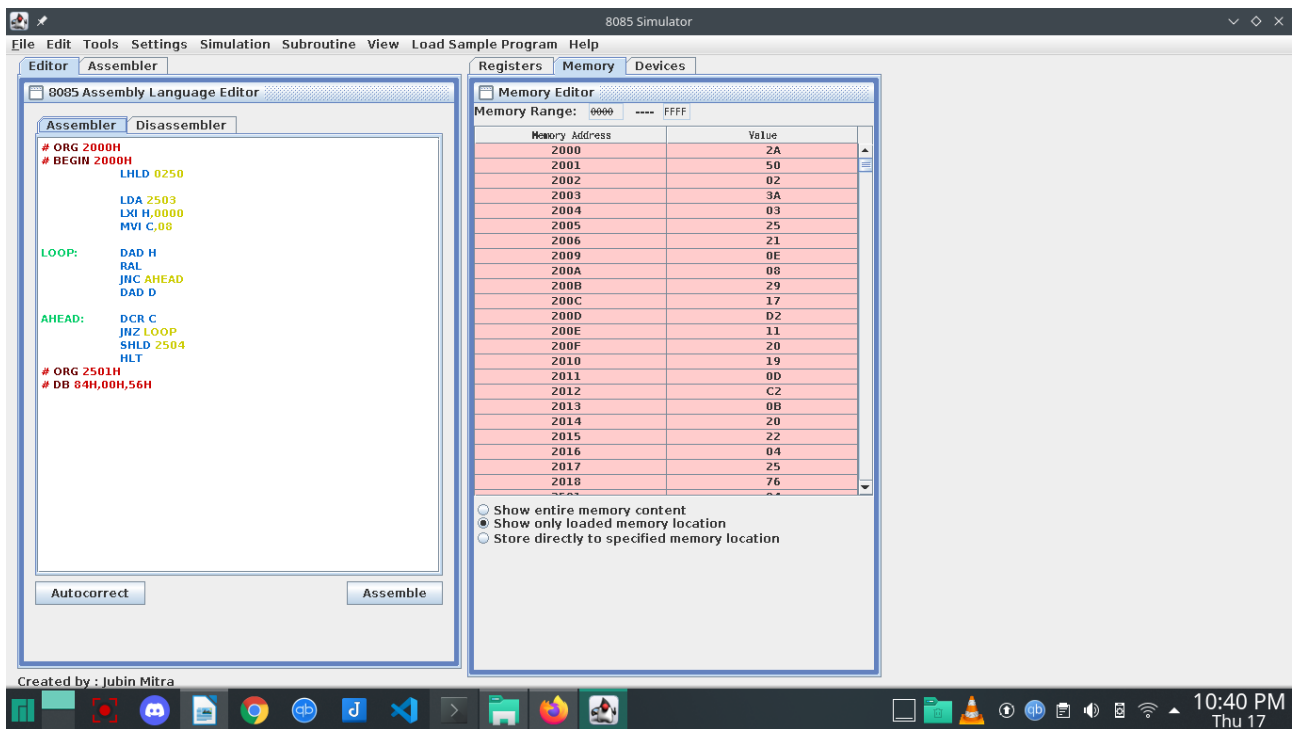
S10	I7.5	I6.5	I5.5	IE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

No. Converter Tool :

Hexadecimal	Decimal	Binary
0		0

Created by : Jubin Mitra

10:40 PM Thu 17



Question 2:

(b)

ORG 2000H

BEGIN 2000H

LHLD 2501

LDA 2503

MOV B,A

MVI C,08

LOOP: DAD H

MOV A,H

SUB B

JC AHEAD

MOV H,A

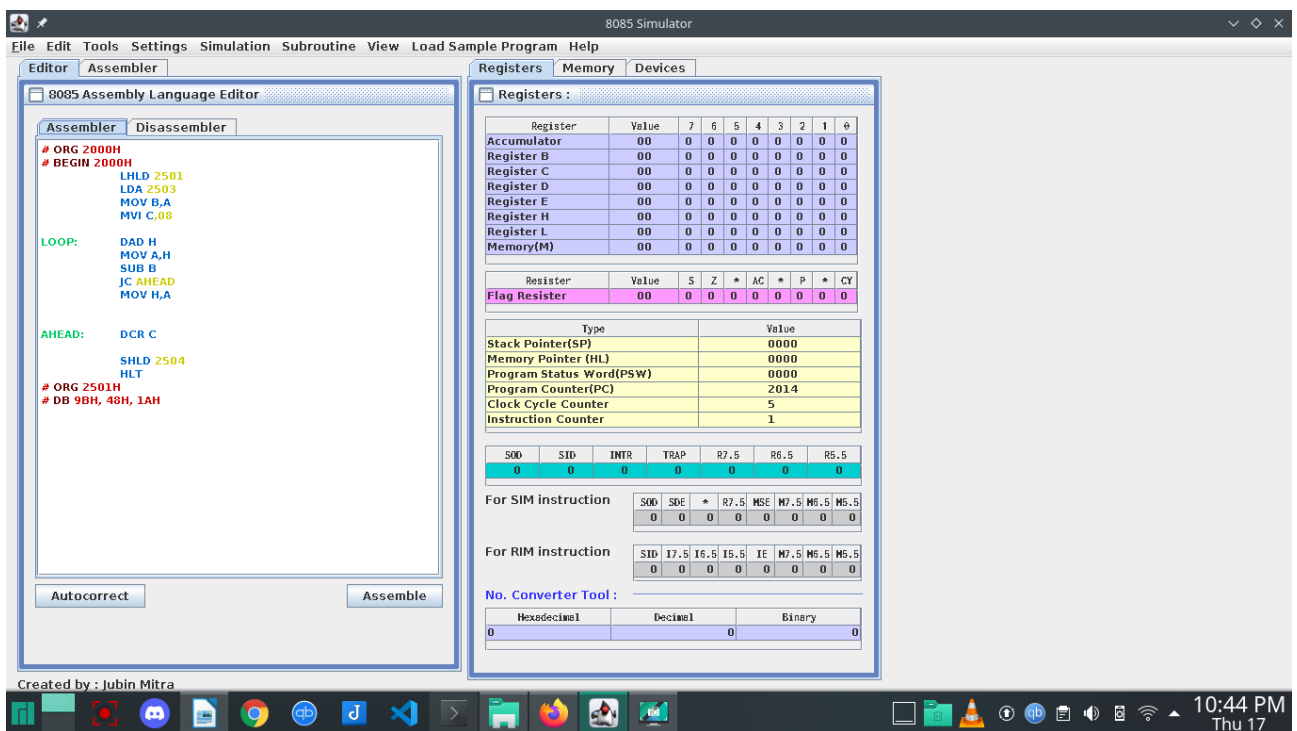
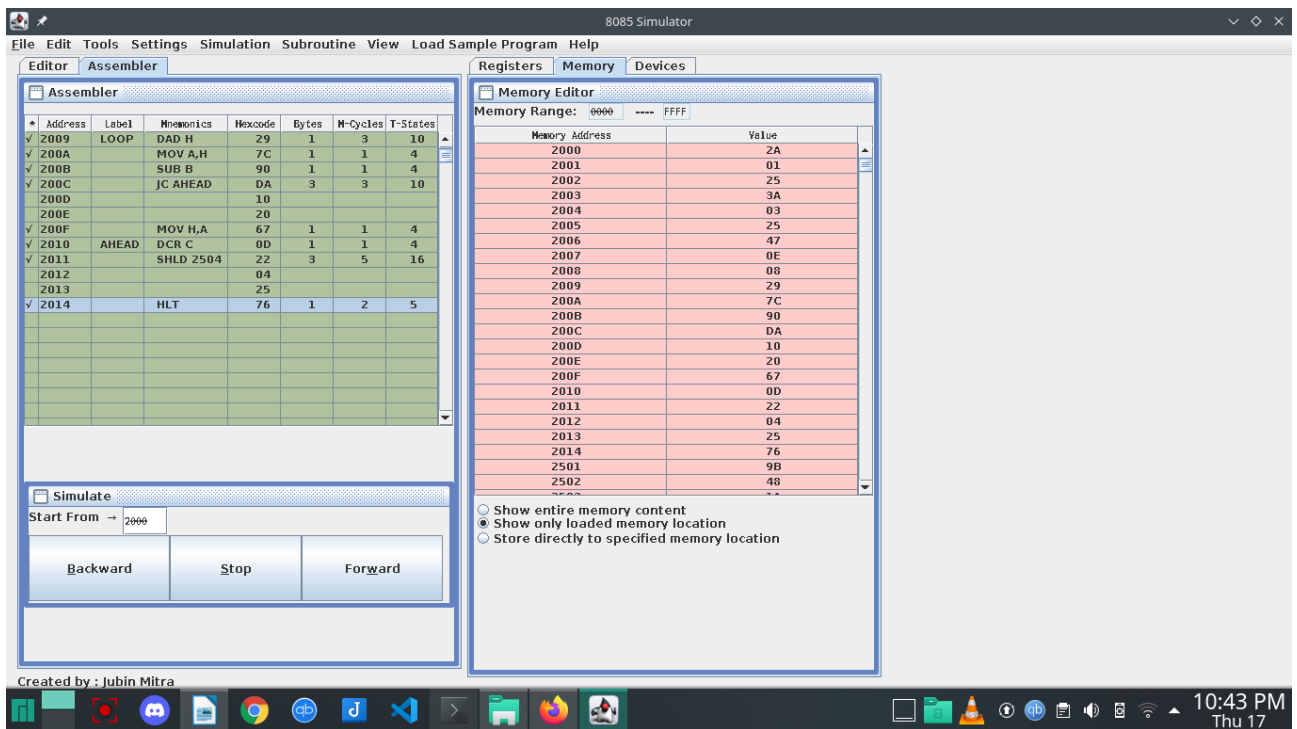
AHEAD: DCR C

SHLD 2504

HLT

ORG 2501H

DB 9BH, 48H, 1AH



Question 3:

(a)

```

LXI H,5000
MOV B,M
INX H
MOV A,M
DCR B
  
```

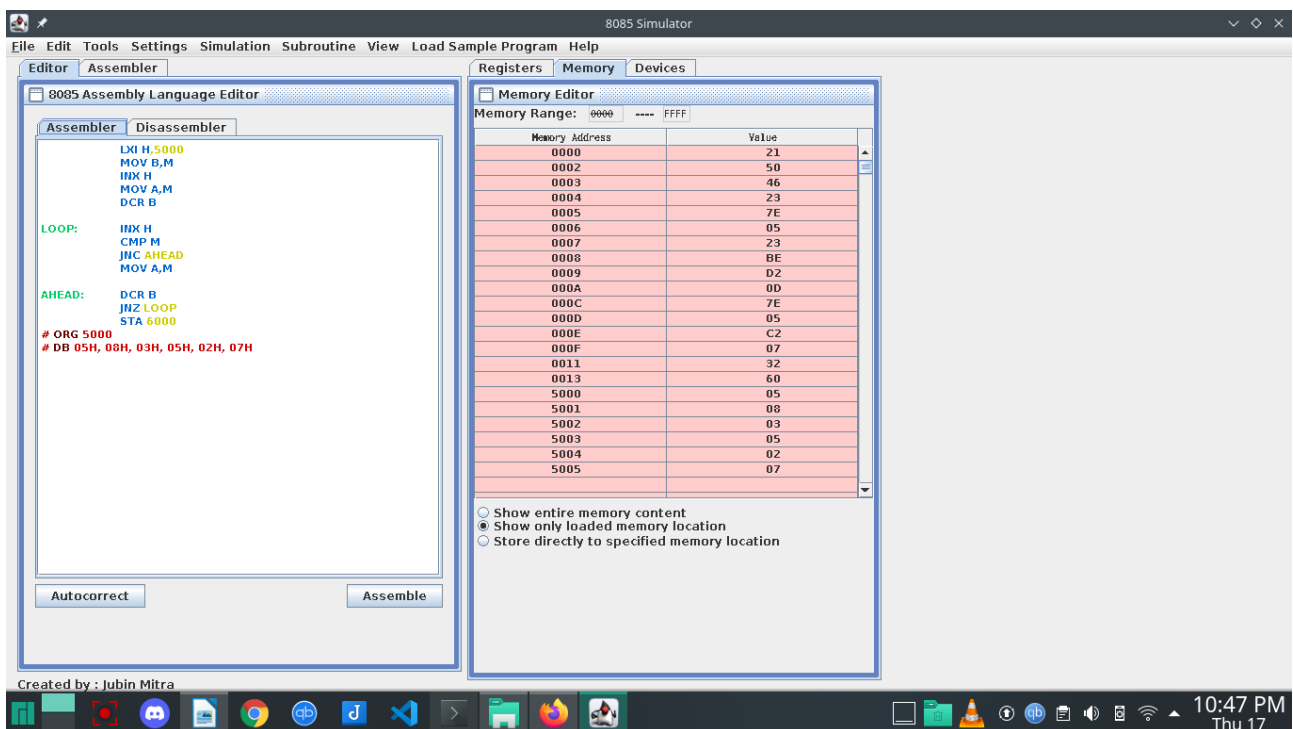
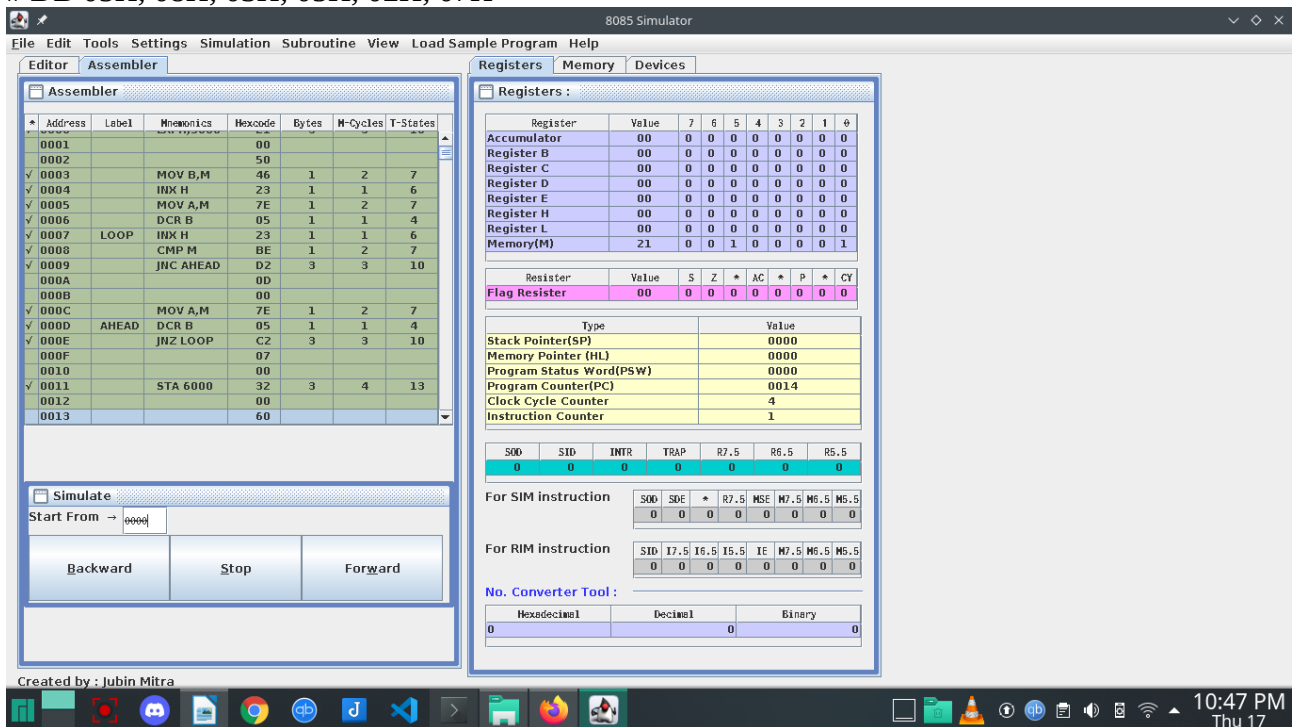
LOOP: INX H

CMP M
JNC AHEAD
MOV A,M

AHEAD: DCR B
JNZ LOOP
STA 6000

ORG 5000

DB 05H, 08H, 03H, 05H, 02H, 07H



Question 3:

(b)

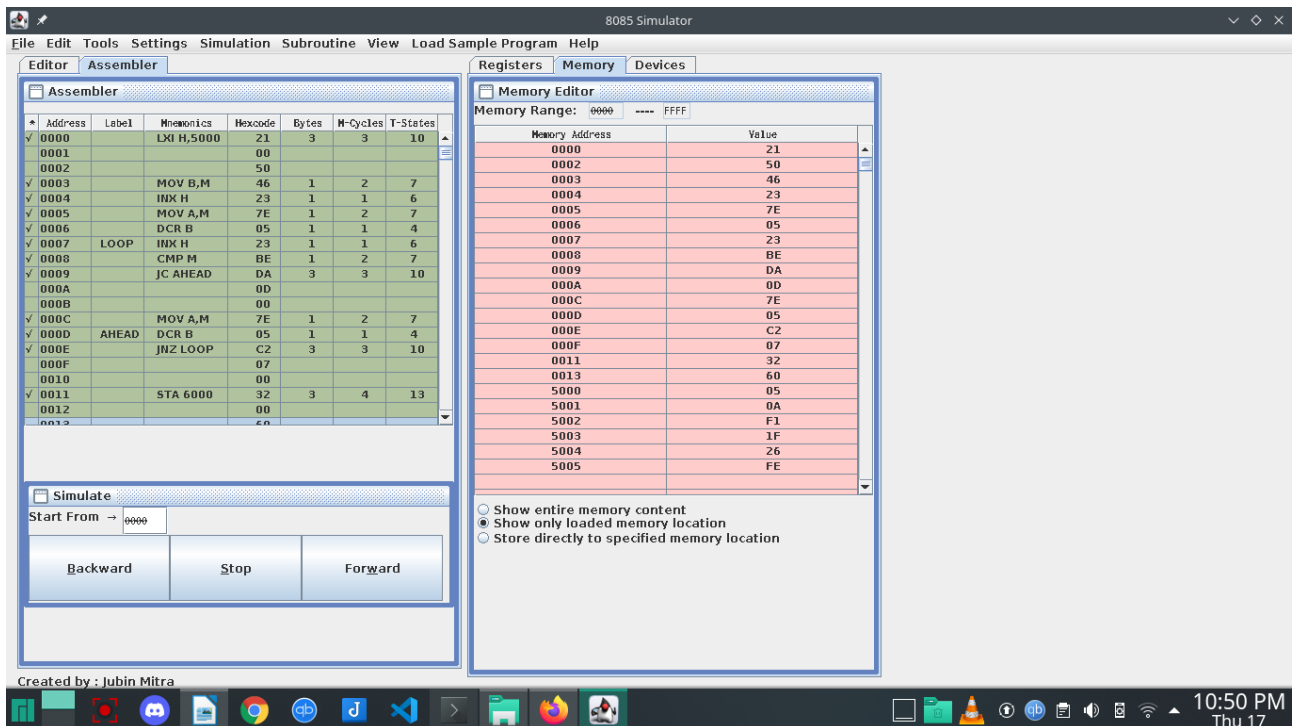
```
LXI H,5000
MOV B,M
INX H
MOV A,M
DCR B
```

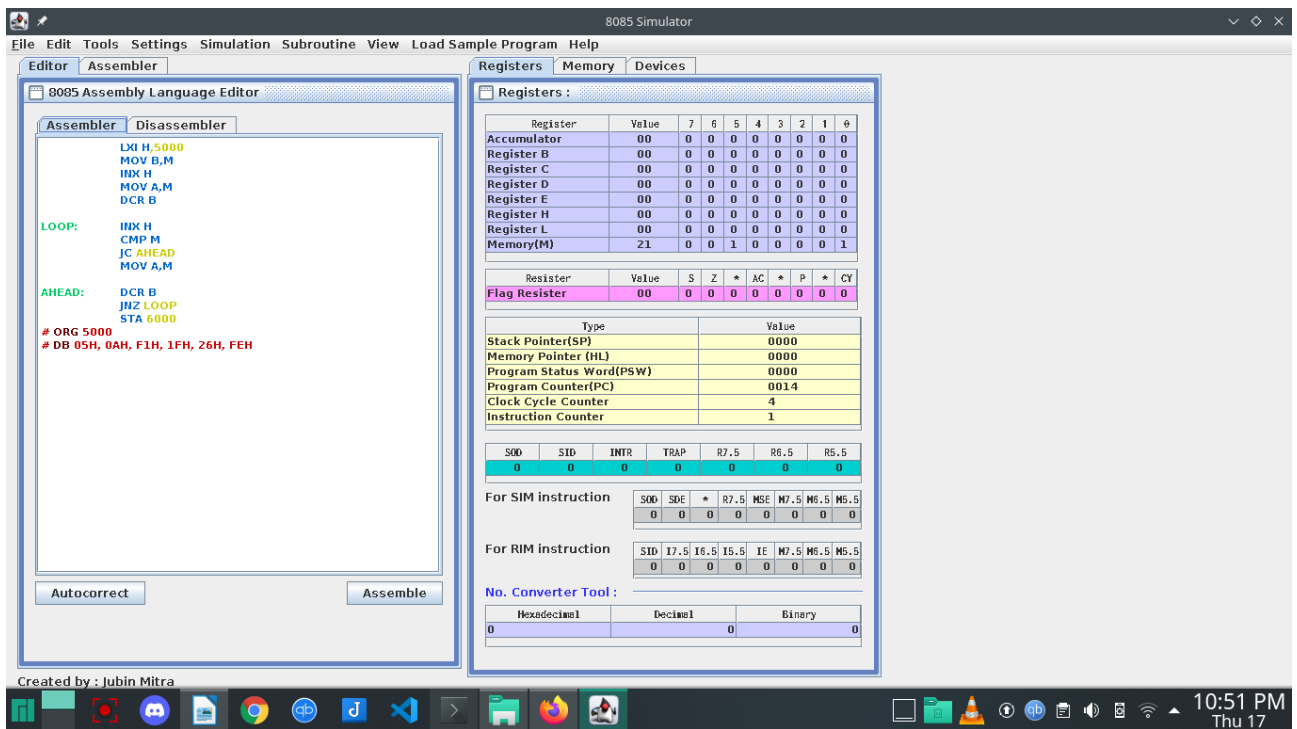
```
LOOP: INX H
      CMP M
      JC AHEAD
      MOV A,M
```

```
AHEAD: DCR B
      JNZ LOOP
      STA 6000
```

```
# ORG 5000
```

```
# DB 05H, 0AH, F1H, 1FH, 26H, FEH
```





Question 4:

MVI A,06

MOV E,A

```

LOOP1:      DCR E
            JZ END
            MOV D,E
            MVI H,00
            MVI L,00
  
```

```

LOOP2:      DAD B
            DCR D
            JNZ LOOP2
            MOV B,H
            MOV C,L
            JMP LOOP1
  
```

```

END:      HLT
          HLT
  
```

8085 Simulator

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Editor Assembler

Assembler

* Address	Label	Mnemonics	Hexcode	Bytes	M-Cycles	T-States
000C	LOOP2	DAD B	09	1	3	10
000D		DCR D	15	1	1	4
000E		JNZ LOOP2	C2	3	3	10
000F			0C			
0010			00			
0011		MOV B,H	44	1	1	4
0012		MOV C,L	4D	1	1	4
0013		JMP LOOP1	C3	3	3	10
0014			03			
0015			00			
0016	END	HLT	76	1	2	5
0017		HLT	76	1	2	5

Simulate

Start From → 0017

Backward Stop Forward

Registers Memory Devices

Registers :

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)	3E	0	0	1	1	1	1	1	0

Register	Value	S	Z	*	AC	*	P	*	CY
Flag Register	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)	0017
Clock Cycle Counter	5
Instruction Counter	1

S00	S10	INTR	TRAP	R7.5	R6.5	R5.5
0	0	0	0	0	0	0

For SIM instruction

S00	SDE	*	R7.5	MSE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

For RIM instruction

S10	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
0		0

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8085 Simulator

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

8085 Assembly Language Editor

Assembler

```

MVI A,06
MOV E,A
LOOP1: DCR E
        JZ END
        MOV D,E
        MVI H,00
        MVI L,00
LOOP2: DAD B
        DCR D
        JNZ LOOP2
        MOV B,H
        MOV C,L
        JMP LOOP1
END:    HLT
        HLT
  
```

Autocorrect Assemble

Registers Memory Devices

Memory Editor

Memory Range: 0000 ---- FFFF

Memory Address	Value
0000	3E
0001	06
0002	5F
0003	1D
0004	CA
0005	16
0007	53
0008	26
000A	2E
000C	09
000D	15
000E	C2
000F	0C
0011	44
0012	4D
0013	C3
0014	03
0016	76
0017	76

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

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