

Practical Exam - (i)

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1 Aim:

Write a program using 8085 for the addition of two 8-bit numbers.

2 Code

- Input at $D000H = 15H$ and $D0001H = 44H$
- Output at $D001H = 59H$
- Program written from $C000H$

```
// input
# ORG D000H
# DB 15H, 44H

// program
# ORG C000H
    LXI H,D000H           // set the HL pair to point to the input location
    MOV A,M               // set the accumulator = first input
    INX H                 // increment HL pair to point to the second input
    ADD M                 // add the second input to the accumulator
    INX H                 // increment the HL pair
    MOV M,A               // store the result at D002H
    RST 1                 // interrupt to restore control
```

3 Output/Observations:

The screenshot displays the 8085 Assembly Language Editor interface. The main window shows the assembly code for adding two 8-bit numbers. The code is as follows:

```
# ORG D000H
# DB 15H, 44H
# ORG C000H
    LXI H,D000H
    MOV A,M
    INX H
    ADD M
    INX H
    MOV M,A
    RST 1
```

The right-hand pane shows the state of the 8085 registers and memory. The Register window displays the following values:

Register	Value	7	6	5	4	3	2	1	0
Accumulator	59	0	1	0	1	1	0	0	1
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	D0	1	1	0	1	0	0	0	0
Register L	02	0	0	0	0	0	0	1	0
Memory(M)	59	0	1	0	1	1	0	0	1

The Flag Register window shows the following values:

Register	Value	S	Z	*	AC	*	P	*	CY
Flag Register	04	0	0	0	0	0	1	0	0

The Type window shows the following values:

Type	Value
Stack Pointer(SP)	FFFE
Memory Pointer (HL)	D002
Program Status Word(PSW)	5904
Program Counter(PC)	0008
Clock Cycle Counter	55
Instruction Counter	7

The SOD, SID, INTR, TRAP, R7.5, R6.5, R5.5 windows show the following values:

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

The For SIM instruction window shows the following values:

SOD	SDE	*	R7.5	MSE	M...	M...	M...
0	0	0	0	0	0	0	0

The For RIM instruction window shows the following values:

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

The No. Converter Tool window shows the following values:

Hexadecimal	Decimal	Binary
0		0

Figure 1: (a) jubin output

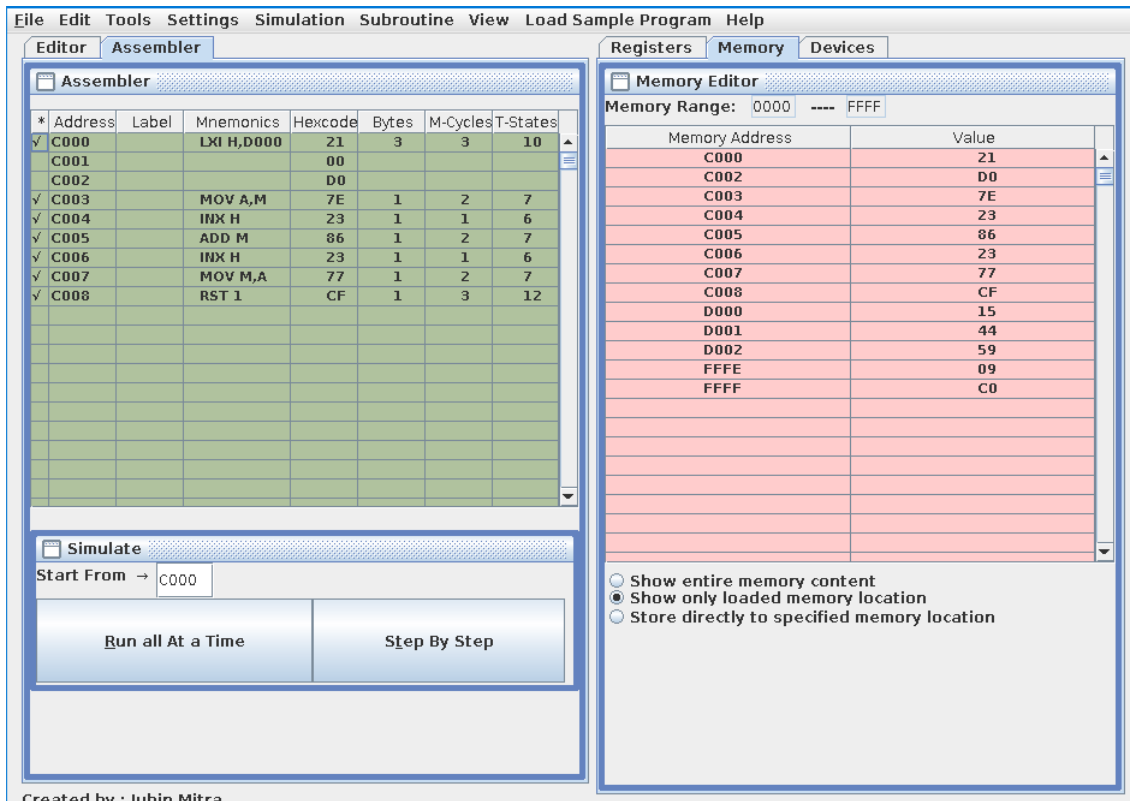


Figure 2: (b) jubin output

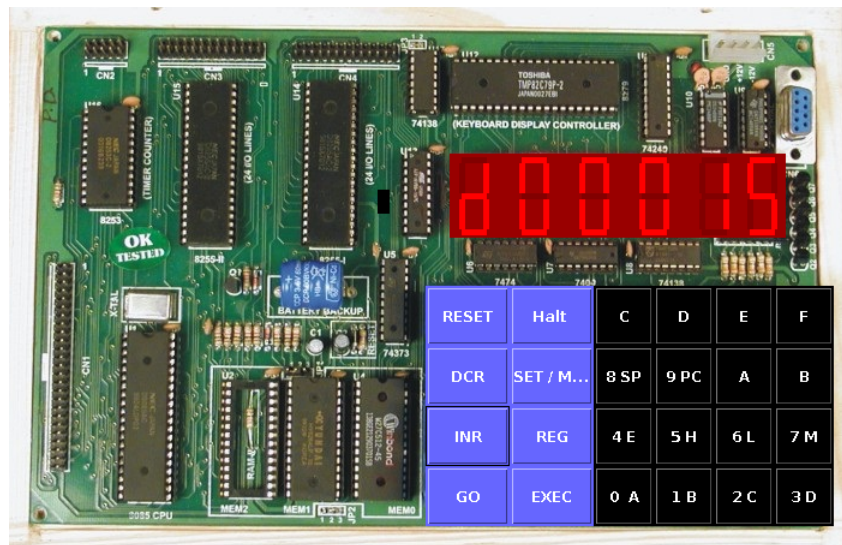


Figure 3: (c) input 1

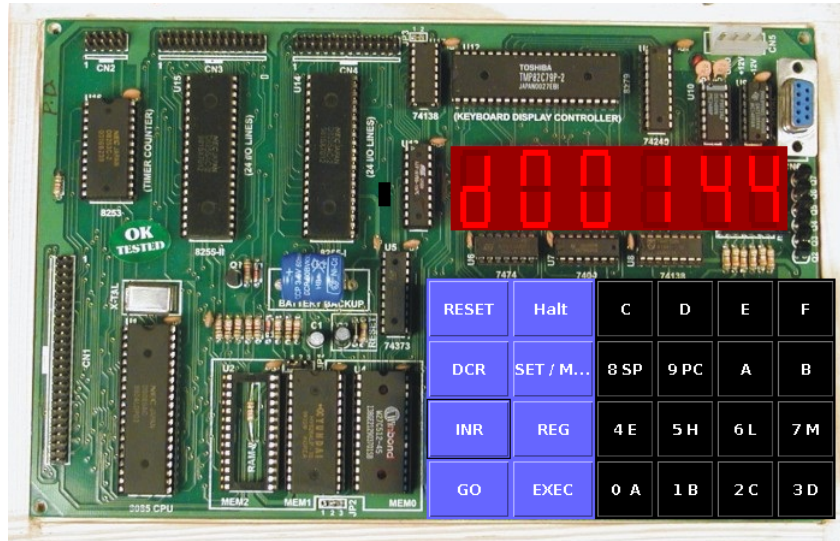


Figure 4: (d) input 2

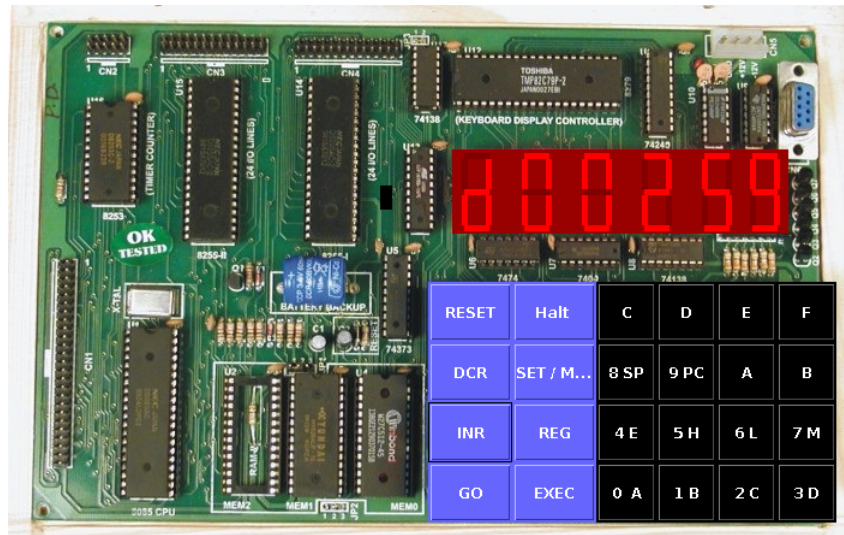


Figure 5: (e) output

4 Conclusion:

Input: $D000H = 15H$, $D001H = 44H$
Output: $D002H = 59H$

Since $15H + 44H = 59H$, the programs for addition of two 8-bit data given in section 2 works as expected for 8085 microprocessor.