

Write a program to perform 8 * 8 multiplication by successive addition.

Address	Assembly Code	Hex Code	Comments
0000	LXI H, 2050H	21 50 20	Point to get count of numbers
0003	MOV C, M	4E	Move Multiplicand to C
0004	INX H	23	Increase H to point to Multiplier
0005	MOV B, M	46	Move Multiplier to B
0006	XRA A	AF	A <- A XOR A to clear A
0007	MVI D, 00H	16 00	Move Immediate 00 to D
0009	LOOP: ADD B	80	A <- A+B
000A	JNC NEXT	D2 0E 00	Jump to Label Next if no carry
000D	INR D	14	Increase D
000E	NEXT: DCR C	0D	Decrease C by 1
000F	JNZ LOOP	C2 09 00	Jump to Label loop if C not Zero
0012	INX H	23	Increase H by 1
0013	MOV M, A	77	Move data in Accumulator to Memory
0014	INX H	23	Increase H by 1
0015	MOV M, D	72	Move data in reg D to Memory
0016	HLT	76	Halt

Procedure:

Step – 1: Writing program in memory.

1. Press Reset
2. Press SET/MEM
3. Type in Address 0000
4. Press Enter
5. Type 1st Hex Code (Here 21)
6. Press Enter
7. Follow step 5 and 6 to type in all Hex Code

Step – 2: Assigning Value to the Address Location

1. Press Reset
2. Press SET/MEM
3. Type in Address of 1st Location (Here 2050)
4. Press Enter
5. Enter value of Multiplicand
6. Press Enter
7. Enter value of Multiplier
8. Press Enter

Step – 3: Executing the program

1. Press Reset to clear Buffer
2. Press Go
3. Enter Starting Address of Program (Here 0000)
4. Press Execute

Step – 4: Checking output

1. Press reset and Clear the Buffer
2. Press Go
3. Enter Result Location (Here 2052 for LB and 2053 for UB)
4. You will find the product of the numbers

Output:

The screenshot shows the 8085 Simulator interface with two main windows: the Assembler window on the left and the Memory Editor window on the right.

Assembler Window:

*	Address	Label	Mnemonics	Hexcode	Bytes	M-Cycles	T-States
V	0000		LXI H,2050	21	3	3	10
	0001			50			
	0002			20			
V	0003		MOV C,M	4E	1	2	7
V	0004		INX H	23	1	1	6
V	0005		MOV B,M	46	1	2	7
V	0006		XRA A	AF	1	1	4
V	0007		MVI D,00	16	2	2	7
	0008			00			
V	0009	BACK	ADD B	80	1	1	4
V	000A		JNC 000E	D2	3	3	10
	000B			0E			
	000C			00			
V	000D		INR D	14	1	1	4
V	000E	NEXT	DCR C	0D	1	1	4
V	000F		JNZ 0009	C2	3	3	10
	0010			09			
	0011			00			
V	0012		INX H	23	1	1	6

Memory Editor Window:

Memory Address	Value
0003	4E
0004	23
0005	46
0006	AF
0007	16
0009	80
000A	D2
000B	0E
000D	14
000E	0D
000F	C2
0010	09
0012	23
0013	77
0014	23
0015	72
0016	76
2050	AA
2051	A0
2052	40
2053	6A

A red handwritten mark "T. V." is written vertically next to the memory address 0012 and value 23.

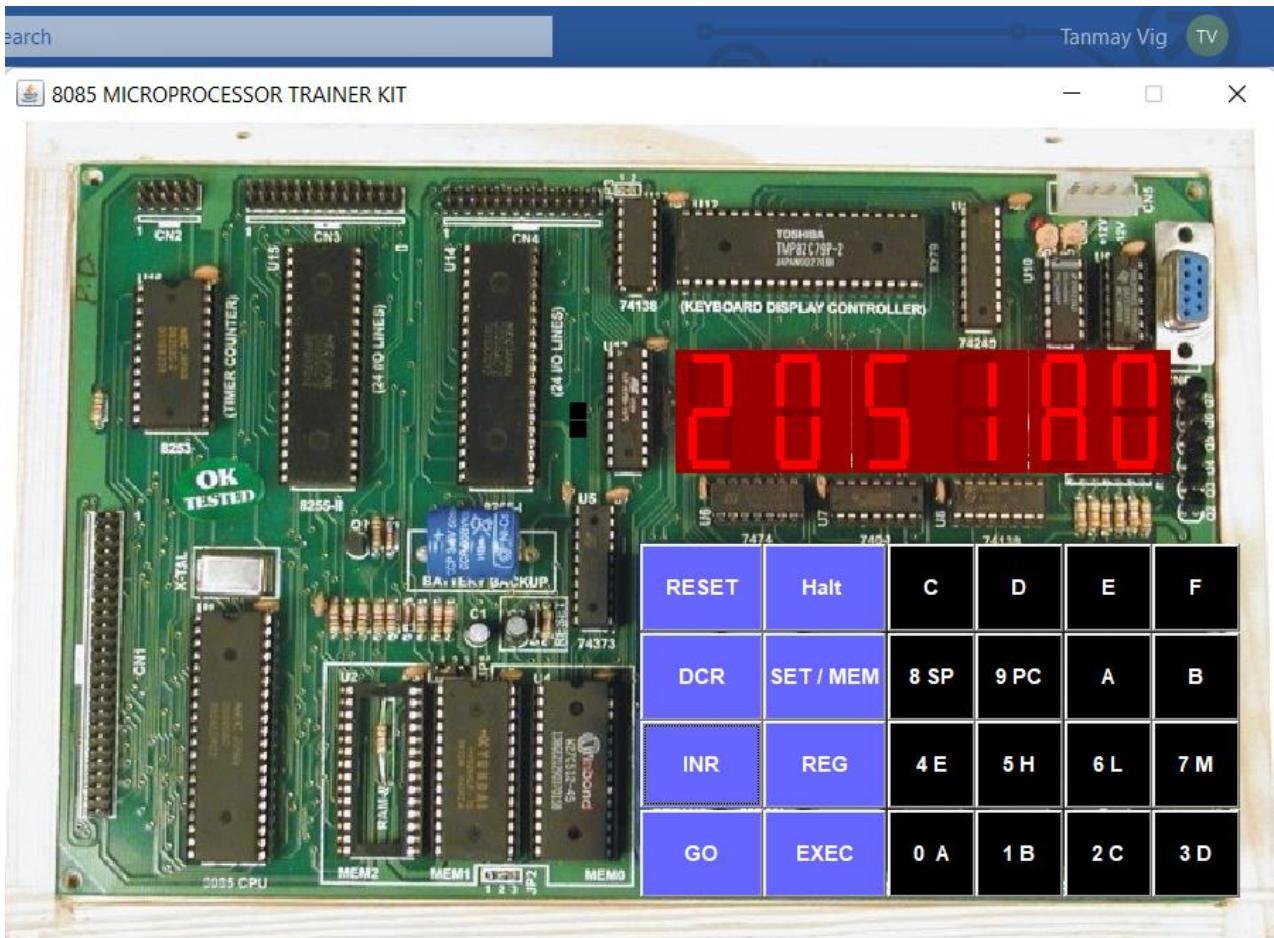
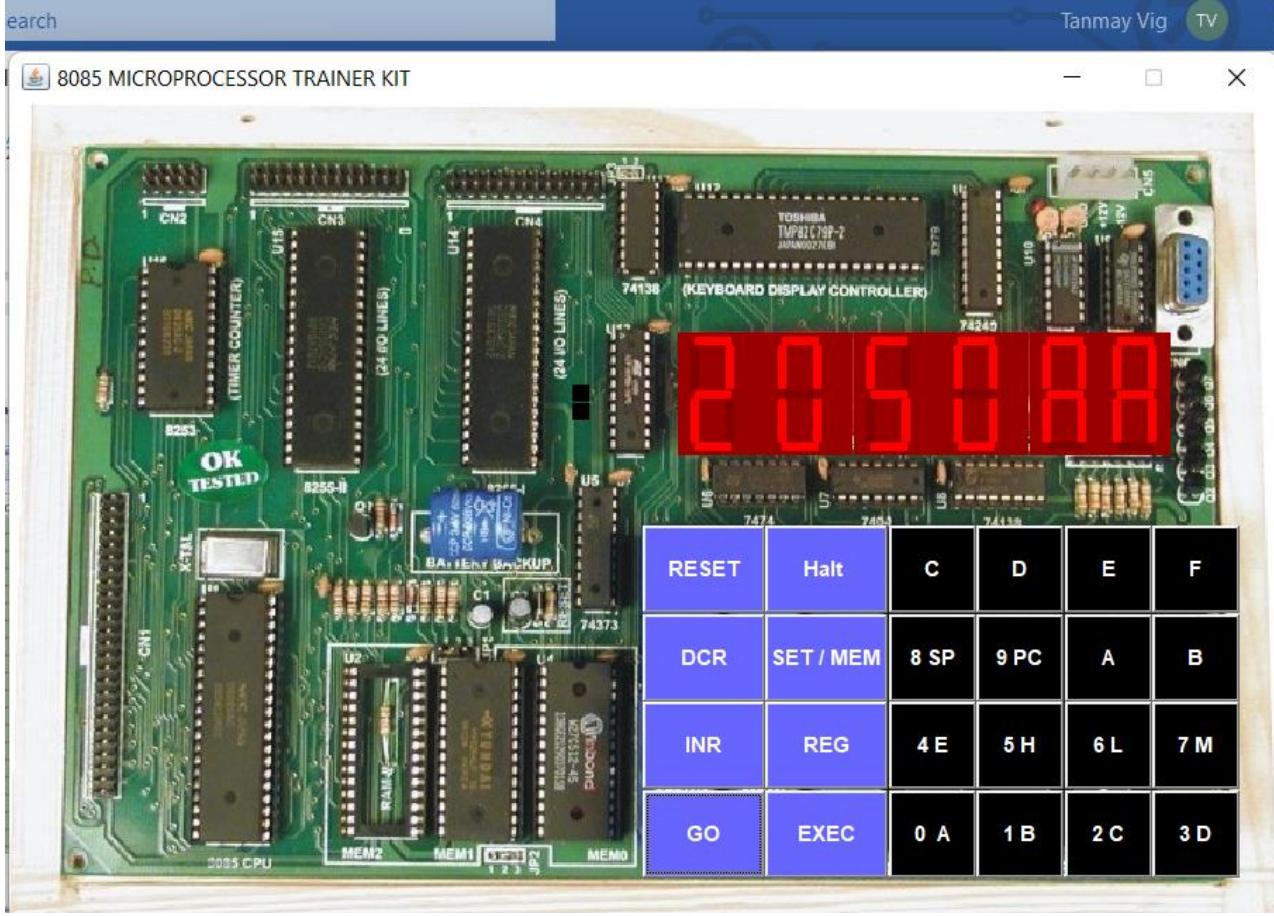
Simulate Panel:

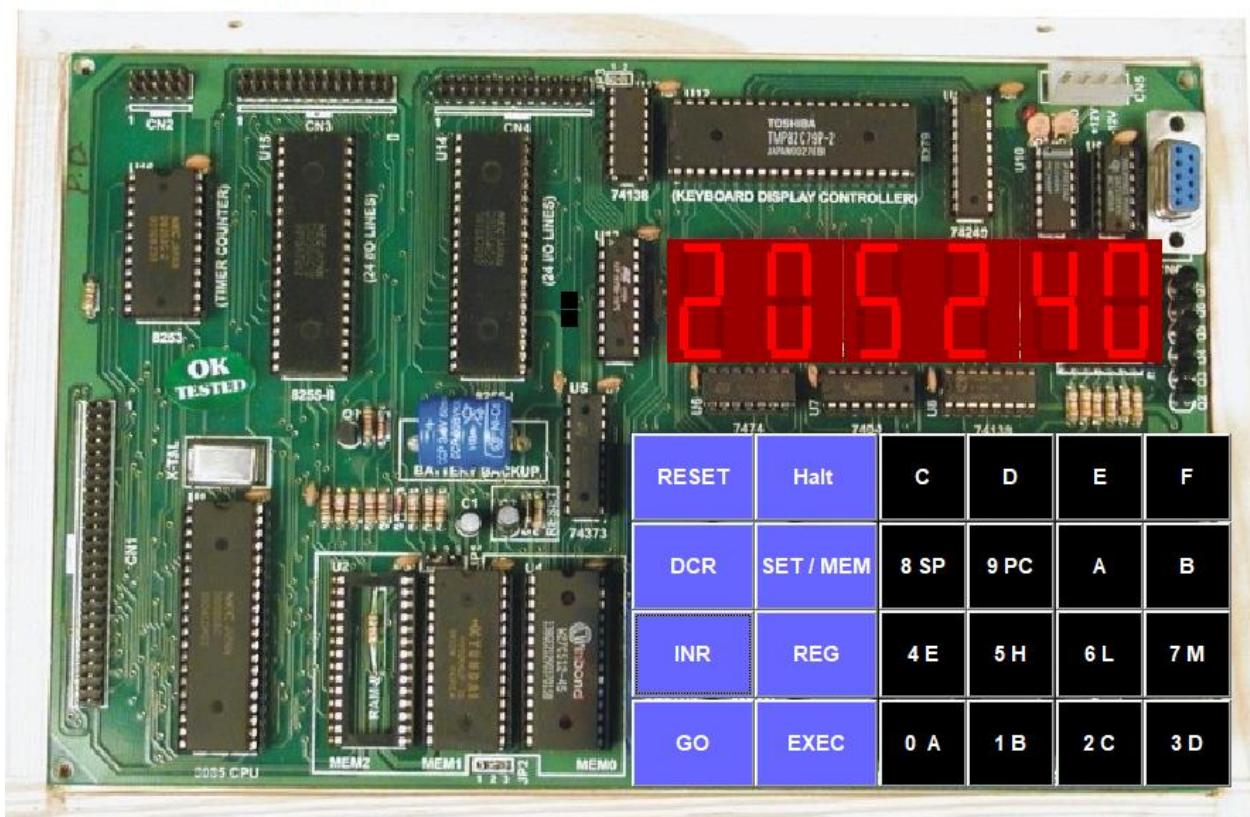
Start From → 0000

Run all At a Time Step By Step

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

Created by : Jubin Mitra



 8085 MICROPROCESSOR TRAINER KIT 8085 MICROPROCESSOR TRAINER KIT