

# Write a program in 8085 to multiply two 8-bit numbers using shifting multiplicand.

Address	Assembly Code	Hex code	Comments
0000	LHLD 2050H	2A 50 20	Loading data to HL reg pair
0003	MOV E,L	5D	Move data in L to E
0004	MOV A, H	7C	Move data in H to Acc
0005	MVI D, 00H	16 00	Moving 00 to D
0007	MVI C, 08H	0E 08	Move 8 to C
0009	LXI H, 0000H	21 00 00	Loading 0000 to HL reg pair
000C	BACK: RAR	1F	Rotate accumulator data to right by 1 bit.
000D	JNC NEXT	D2 11 00	Jump to next if no carry
0010	DAD D	19	HL <- HL + DE
0011	NEXT: XCHG	EB	HL <-> DE
0012	DAD H	29	HL <- HL+HL (left shift)
0013	XCHG	EB	HL <-> DE
0014	DCR C	0D	Decrease C by 1
0015	JNZ BACK	C2 0C 00	Jump to BACK if C not zero
0018	SHLD 2052	22 52 20	Store HL reg pair to 2052 and 2053
001B	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 1<sup>st</sup> 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 1<sup>st</sup> 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:

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
000F			00			
✓ 0010		DAD D	19	1	3	10
✓ 0011	NEXT	XCHG	EB	1	1	4
✓ 0012		DAD H	29	1	3	10
✓ 0013		XCHG	EB	1	1	4
✓ 0014		DCR C	0D	1	1	4
✓ 0015		JNZ 000C	C2	3	3	10
0016			0C			
0017			00			
✓ 0018		SHLD 2052	22	3	5	16
0019			52			
001A			20			
✓ 001B		HLT	76	1	2	5

**Simulate**

Start From → 0000

Run all At a Time Step By Step

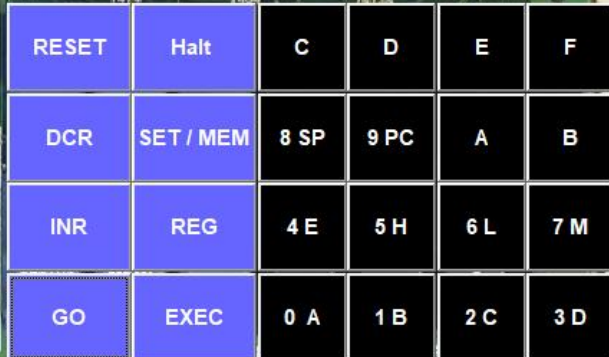
**Memory Editor**

Memory Range: 0000 ---- FFFF

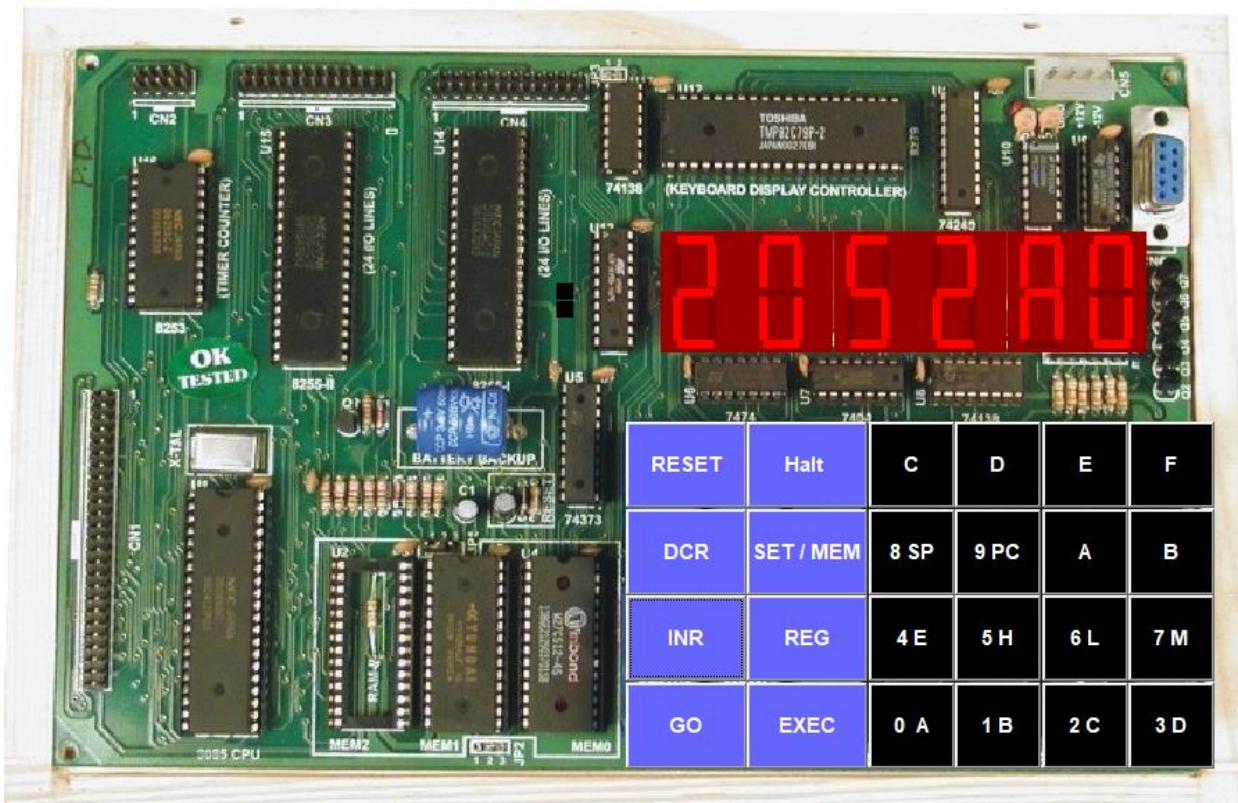
Memory Address	Value
0010	19
0011	EB
0012	29
0013	EB
0014	0D
0015	C2
0016	0C
0018	22
0019	52
001A	20
001B	76
2050	AA
2051	10
2052	A0
2053	0A

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

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## 8085 MICROPROCESSOR TRAINER KIT



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