

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 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:

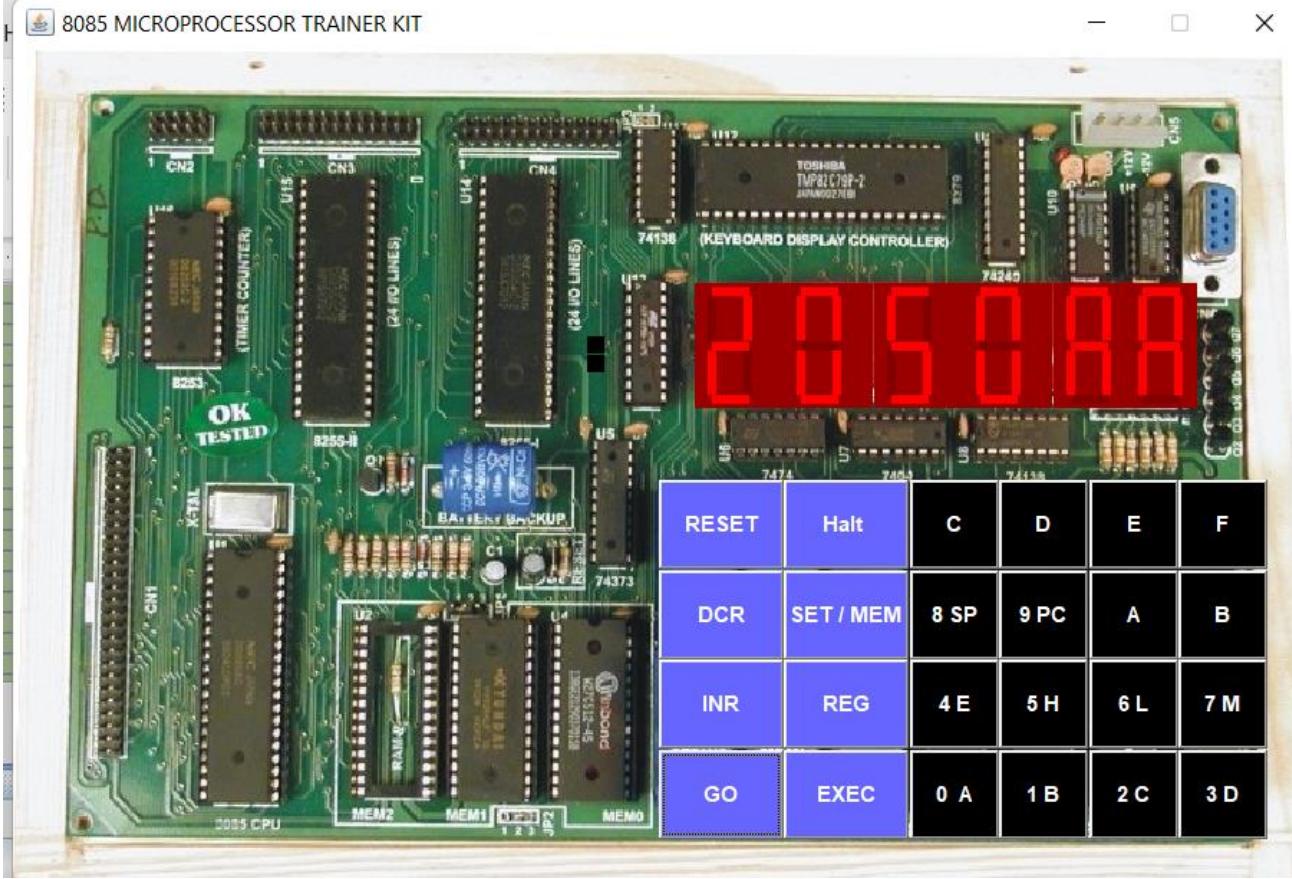
- Assembler Window:** Displays assembly code with columns for Address, Label, Mnemonics, Hexcode, Bytes, M-Cycles, and T-States. The code includes instructions like DAD D, XCHG, DAD H, XCHG, DCR C, JNZ 000C, SHLD 2052, and HLT.
- Memory Editor Window:** Shows memory starting at address 0000 with a range up to FFFF. The memory contents are as follows:

Memory Address	Value
0010	19
0011	EB
0012	29
0013	EB
0014	0D
0015	C2
0016	0C
0017	00
0018	52
0019	20
001A	76
2050	AA
2051	10
2052	A0
2053	0A

 A red arrow points from the value 76 at address 001A to the value AA at address 2050, indicating the result of the multiplication.

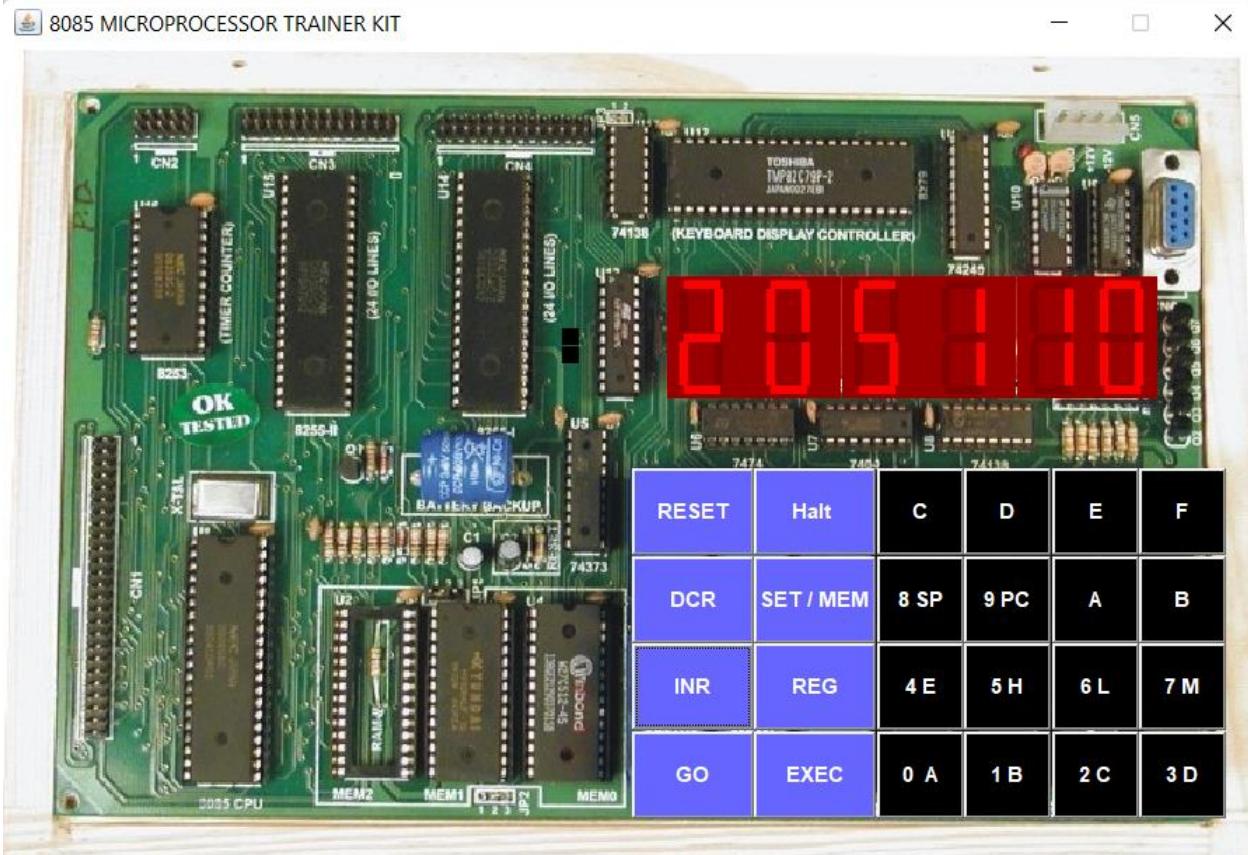
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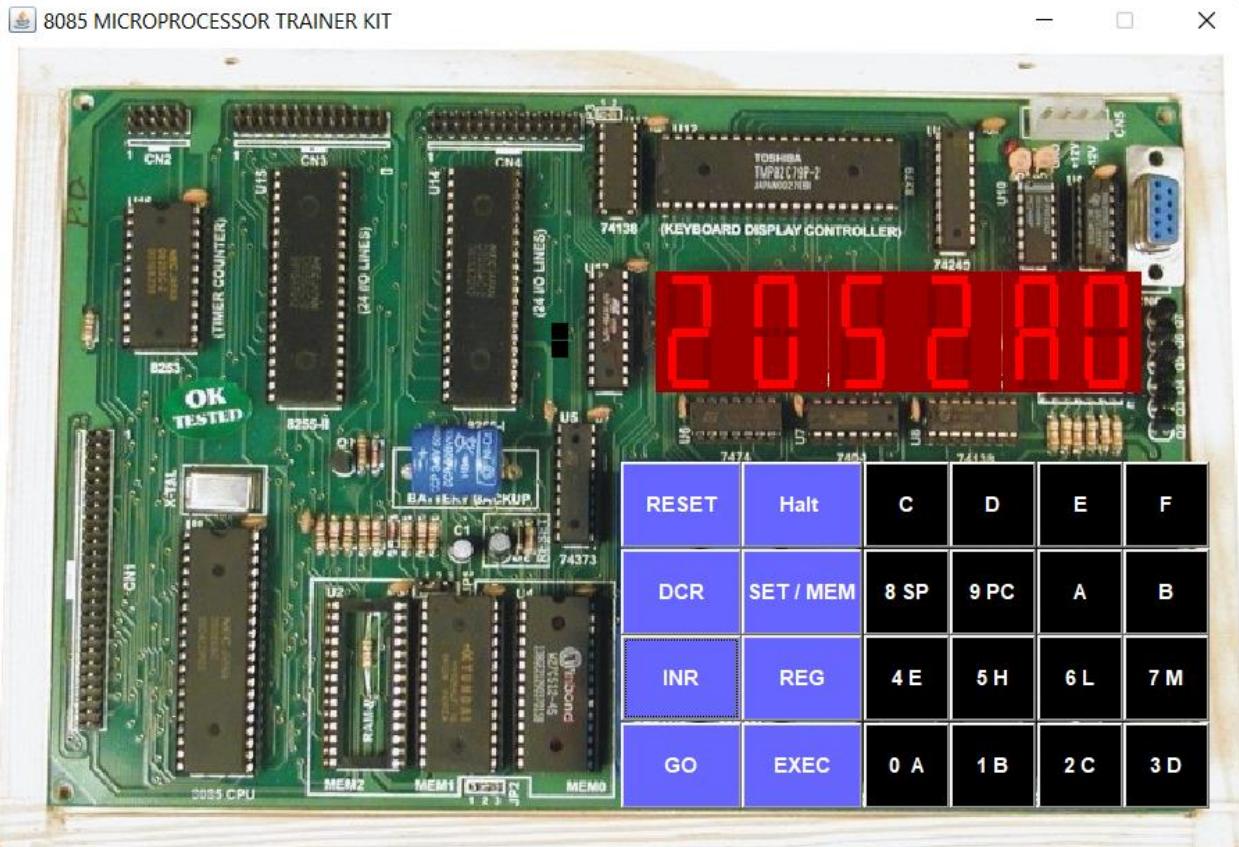
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