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Experiment 3: Write a program to add N numbers stored at consecutive locations starting from 2050H and store their 8 bit sum at following address.

Memory Address	Assembly Code	Hex Code	Comments
0000	LXI H, 2050H	21	Load data at location 2050 in HL rp. To get value of N
0001		50	
0002		20	
0003	MOV C,M	4E	Move data (N) to C register
0004	MVI A,00H	3E	Move 00 to A
0005		00	
0006	LOOP: INX H	23	Increase value of HL rp
0007	ADD M	86	Add data in memory with Accumulator data and store in accumulator
0008	DCR C	0D	Decrease value of C
0009	JNZ LOOP	C2	Jump if value of C not zero to loop.
000A		06	
000B		00	
000C	INX H	23	Increase value oh HL rp
000D	MOV M,A	77	Move value in accumulator to memory location.
000E	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 Codes

Step – 2: Assigning Values 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 N (total count of numbers)
6. Press Enter
7. Enter a number
8. Press Enter
9. Repeat Step 7 and 8 N-1 times

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 the Output

1. Press Reset and clear the buffer
2. Press Go
3. Enter Result Location (Here 2050+ value of N+1)
4. You will get here the sum of N digits in Hexadecimal format

Output:

8085 Simulator

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

* Address	Label	Mnemonics	Hexcode	Bytes	M-Cycles	T-States
✓ 0000		LXI H,2050	21	3	3	10
0001			50			
0002			20			
✓ 0003		MOV C,M	4E	1	2	7
✓ 0004		MVI A,00	3E	2	2	7
0005			00			
✓ 0006	LOOP	INX H	23	1	1	6
✓ 0007		ADD M	86	1	2	7
✓ 0008		DCR C	0D	1	1	4
✓ 0009		JNZ 0006	C2	3	3	10
000A			06			
000B			00			
✓ 000C		INX H	23	1	1	6
✓ 000D		MOV M,A	77	1	2	7
✓ 000E		HLT	76	1	2	5

Simulate

Start From → 0000

Run all At a Time Step By Step

Registers Memory Devices

Memory Editor

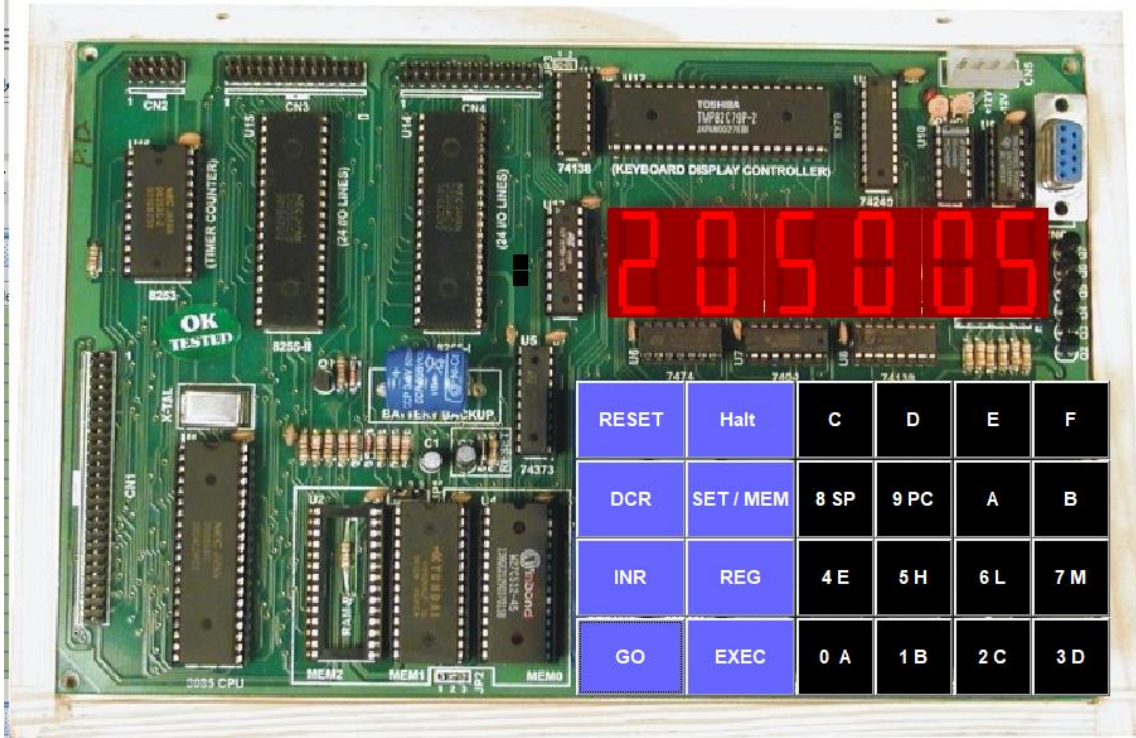
Memory Range: 0000 ---- FFFF

Memory Address	Value
0000	21
0001	50
0002	20
0003	4E
0004	3E
0006	23
0007	86
0008	0D
0009	C2
000A	06
000C	23
000D	77
000E	76
2050	05
2051	01
2052	02
2053	03
2054	04
2055	05
2056	0F

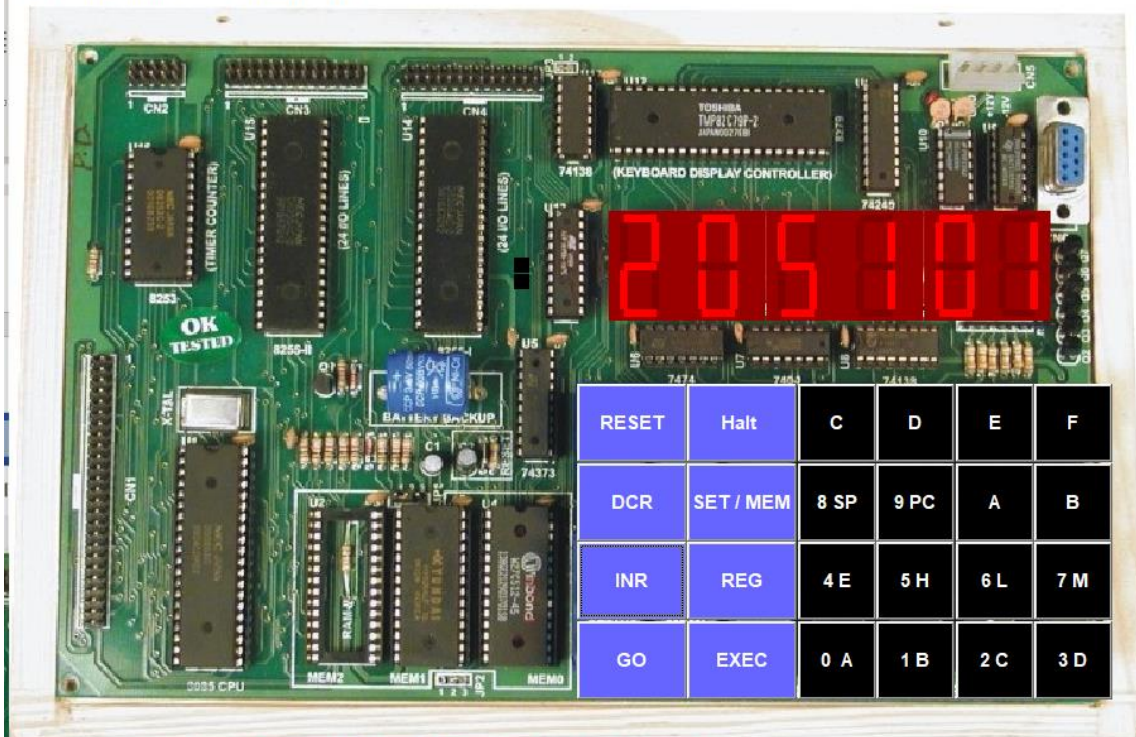
☐ Show entire memory content
☒ Show only loaded memory location
☐ Store directly to specified memory location

Created by : Jubin Mitra

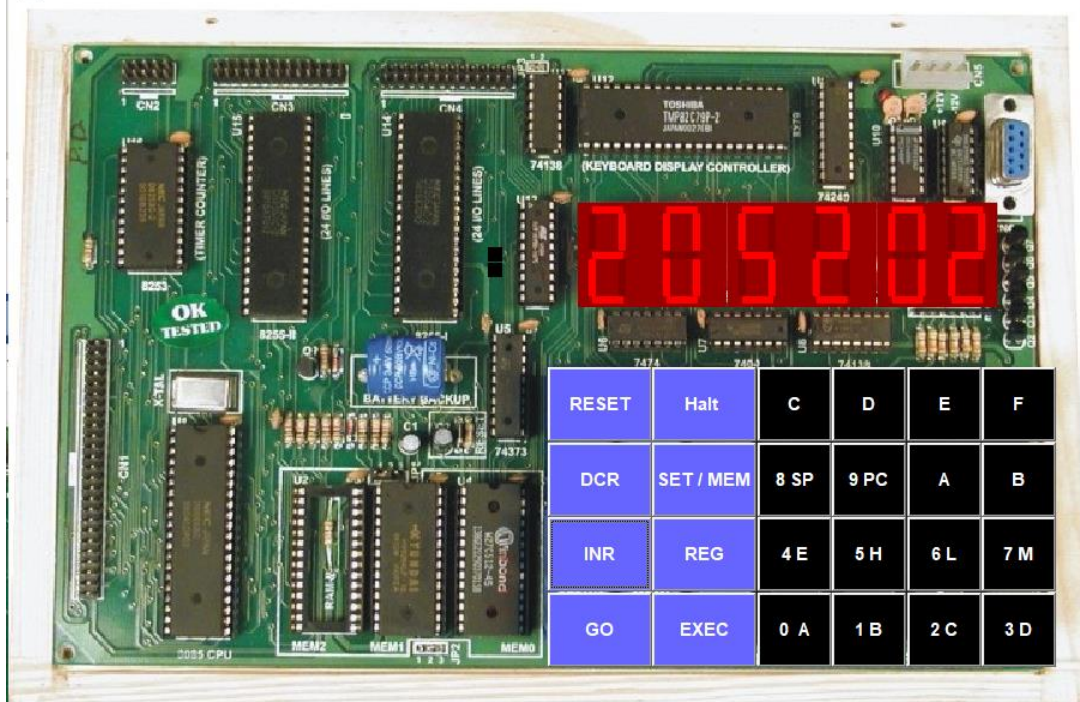
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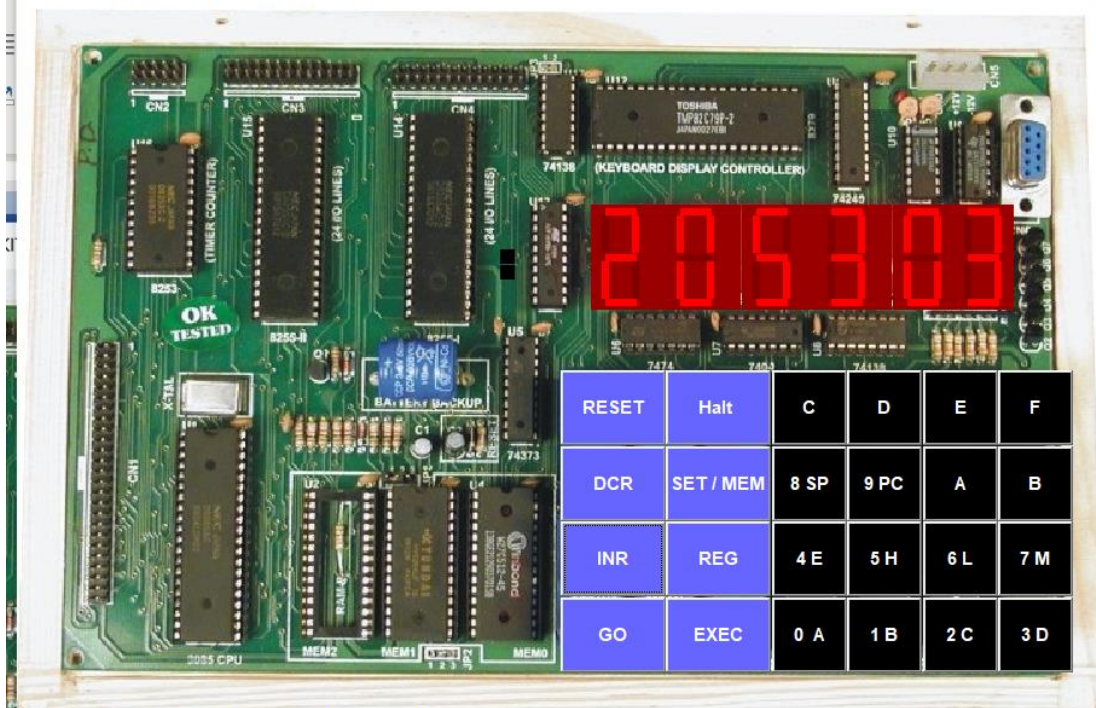
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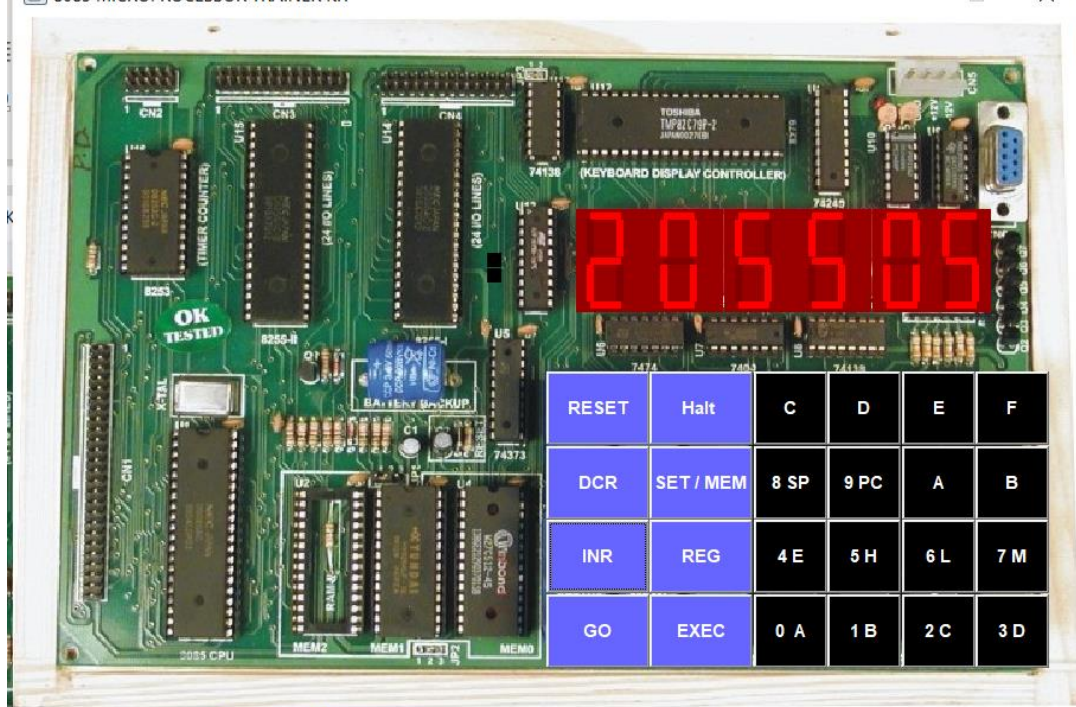


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