Name: Tanmay Vig

Roll No.: 19BCS061

Class: B. Tech 3rd year

Q13: Write and execute a program in the assembly language of 8085 to find HCF of given two integers stored at a given location.

Tool used: 8085 simulator

Program:

Address	Assembly Code	Hex Code	Comments
0000	LXI H, 2050H	21 50 20	Point reg H to memory location 2050H (first Num)
0003	MOV A,M	7E	Move memory to Accumulator.
0004	INX H	23	Increase the pointed location by 1
0005	MOV B,M	46	Move memory to reg B
0006	LOOP: CMP B	B8	Compare B with A
0007	JZ STORE	CA 17 00	If both are equal then store the result
000A	JC EXG	DA 00 11	If B>A, then swap values
000D	SUB B	90	If B<A, subtract B from A
000E	JMP LOOP	C3 06 00	Jump to Label LOOP
0011	EXG: MOV C,B	48	Move value in reg B to reg C

0012	MOV B,A	47	Move value in Accumulator to reg B
0013	MOV A,C	79	Move value in reg C to Accumulator
0014	JMP LOOP	C3 06 00	Jump to Label LOOP
0017	STORE: STA 2052H	32 52 20	Store value of Accumulator in memory location 2052H
001A	HLT	76	Halt

Address	Data
2050H	2D
2051H	69
2052H	0F

Input:

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
	0001			50			
	0002			20			
√	0003		MOV A,M	7E	1	2	7
√	0004		INX H	23	1	1	6
√	0005		MOV B,M	46	1	2	7
√	0006	LOOP	CMP B	B8	1	1	4
√	0007		JZ 0017	CA	3	3	10
	0008			17			
	0009			00			
√	000A		JC 0011	DA	3	3	10
	000B			11			
	000C			00			
√	000D		SUB B	90	1	1	4
√	000E		JMP 0006	C3	3	3	10
	000F			06			
	0010			00			
√	0011	EXG	MOV C,B	48	1	1	4
√	0012		MOV B,A	47	1	1	4
√	0013		MOV A,C	79	1	1	4

Simulate

Start From → [2050]

Run all At a Time	Step By Step

Registers	Memory	Devices
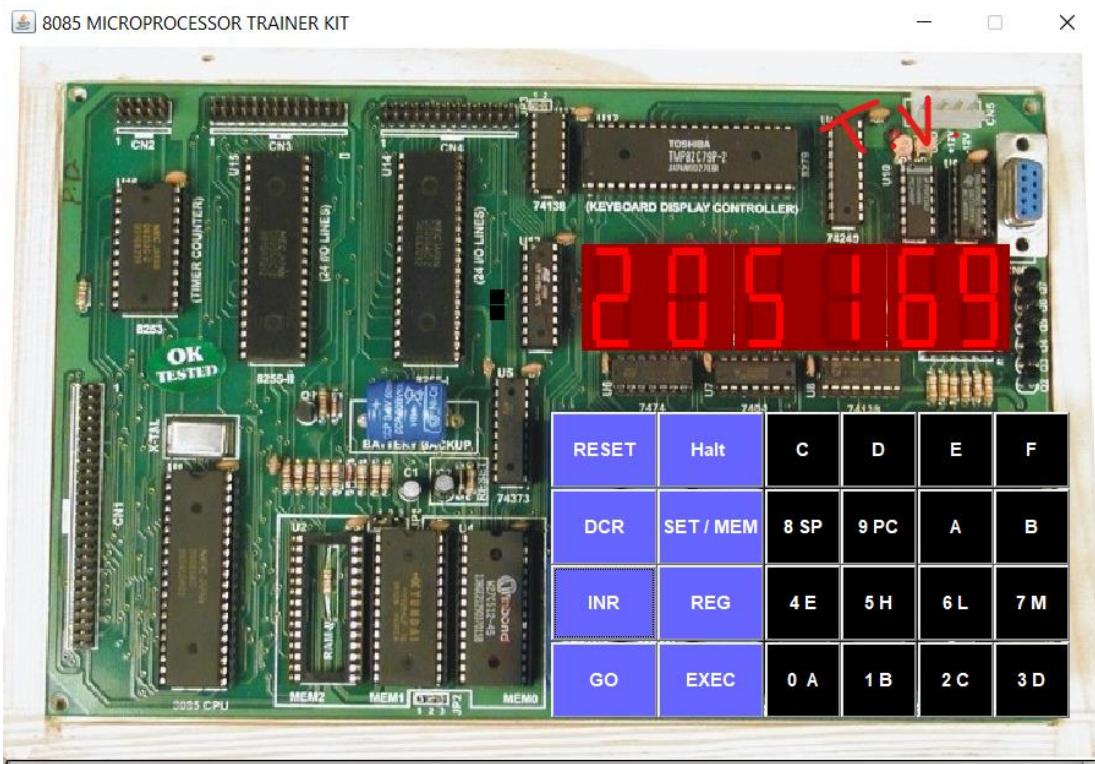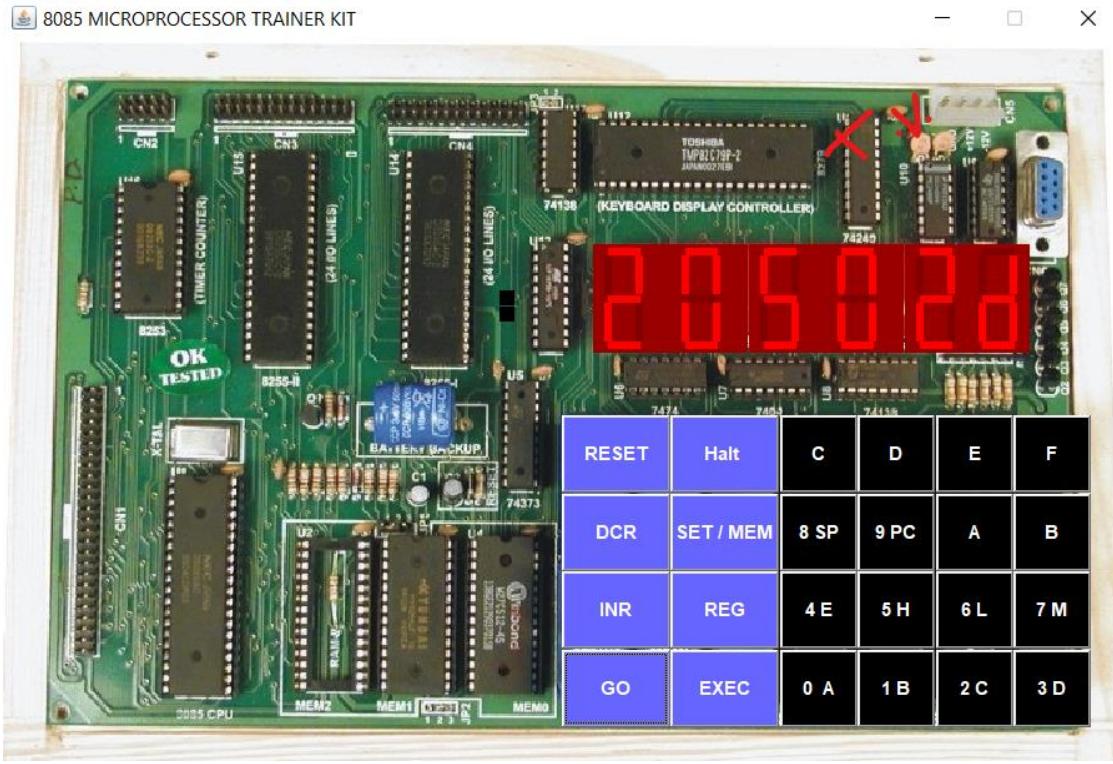
Memory Editor

Memory Range: [0000] ---- [FFFF]

Memory Address	Value
0000	21
0001	50
0002	20
0003	7E
0004	23
0005	46
0006	B8
0007	CA
0008	17
000A	DA
000B	11
000D	90
000E	C3
000F	06
0011	48
0012	47
0013	79
0014	C3
0015	06
0017	32
0018	52
0019	20
001A	76
2050	2D
2051	69
2052	0F

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

Output: