

LARGEST NUMBER IN AN ARRAY

EXP NO: 10

AIM: To find the largest number from an array using 8085 processor.

ALGORITHM:

- 1) Load the address of the first element of the array in HL pair.
- 2) Move the count to B register.
- 3) Increment the pointer.
- 4) Get the first data in A register.
- 5) Decrement the count.
- 6) Increment the pointer.
- 7) Compare the content of memory addressed by HL pair with that of A register.
- 8) If carry=0, go to step 10 or if carry=1 go to step 9
- 9) Move the content of memory addressed by HL to A register.
- 10) Decrement the count.

PROGRAM:

LXI H,2050

MOV C,M

DCR C

INX H

MOV A,M

LOOP1: INX H

CMP M

JNC LOOP

MOV A,M

LOOP: DCR C

JNZ LOOP1

STA 2058

HLT

INPUT\OUTPUT

The screenshot displays the 8085 Microprocessor Simulator interface. The main window shows the assembly code being executed, with the following instructions visible:

```
1 LXI H,2050
2 MOV C,M
3 DCR C
4 INX H
5 MOV A,M
6 LOOP1: INX H
7 CMP M
8 JNC LOOP
9 MOV A,M
10 LOOP: DCR C
11 JNZ LOOP1
12 STA 2058
13 HLT
```

The Registers window on the left shows the current state of the processor registers:

Register	Value
A	3C
BC	00 00
DE	00 00
HL	08 0C
PSW	00 00
PC	42 15
SP	FF FF
Int-Reg	00

The Flag window shows the status of the flags:

Flag	Value
S	0
Z	1
AC	0
P	1
C	0

The Memory window on the right shows the contents of memory locations:

Address (Hex)	Address	Data
0802	2050	10
0803	2051	20
0804	2052	30
0805	2053	40
0806	2054	50
0807	2055	60
0808	2056	0
0809	2057	0
080A	2058	60
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0

The I/O Ports window shows the current state of the ports:

Port	Value
0	00

The Memory window also shows the current state of the memory:

Address (Hex)	Address	Data
0802	2050	10
0803	2051	20
0804	2052	30
0805	2053	40
0806	2054	50
0807	2055	60
0808	2056	0
0809	2057	0
080A	2058	60
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0

The Assembler Message window at the bottom shows the following message:

```
Line No Assembler Message
0 Program assembled successfully
```

RESULT: Thus the program was executed successfully using 8086 processor simulator.