

## 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 GNUSim8085 - 8085 Microprocessor Simulator interface. The main window is titled "GNUSim8085 - 8085 Microprocessor Simulator". The interface includes a menu bar (File, Reset, Assembler, Debug, Help) and a toolbar with various icons. The central area shows the assembly program being executed, with line numbers 1 through 13. The program is as follows:

```
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
```

On the left side, the "Registers" panel shows the current state of the 8085 registers. The A register contains 30, B contains 00, C contains 00, D contains 00, E contains 00, F contains 00, H contains 08, L contains 09, PC contains 42, SP contains FF, and Int-Reg contains 00. The "Flag" panel shows the status of the flags: S (0), Z (1), AC (0), P (1), and C (0). Below the registers, there is a "Decimal - Hex Conversion" section with input fields for decimal and hex values, and buttons for "To Hex" and "To Dec". There are also sections for "I/O Ports" and "Memory" with similar input fields and buttons.

On the right side, the "Memory" panel shows the memory contents. The "Start" address is 2050. The memory table lists addresses from 0802 to 080F, with corresponding addresses and data values:

Address (Hex)	Address	Data
0802	2050	7
0803	2051	24
0804	2052	5
0805	2053	6
0806	2054	32
0807	2055	48
0808	2056	0
0809	2057	0
080A	2058	48
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0

At the bottom right, the "Assembler Message" panel shows the message: "Program assembled successfully".

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