

## **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:**

Address (Hex)	Address	Data
0802	2050	5
0803	2051	23
0804	2052	45
0805	2053	21
0806	2054	9
0807	2055	87

**OUTPUT:**

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window shows the assembly code being executed:

```

1  LXI B, 2050
2  MOV C, B
3  DCR C
4  JNZ B
5  MOV A, B
6  LOOP1: SHL B
7  CMP B
8  JNZ LOOP
9  MOV A, B
10 LOOP1: DCR C
11 JNZ LOOP1
12 RET 2054
13 HLT
14

```

On the left, the Registers panel shows the state of the processor registers. The Flag panel shows the status of the flags. The I/O Ports panel shows the current port values. The Memory panel shows the current memory address and data.

On the right, the Memory panel is open, showing the memory dump:

Address (Hex)	Address	Data
0802	2050	5
0803	2051	23
0804	2052	45
0805	2053	21
0806	2054	9
0807	2055	87
0808	2056	0
0809	2057	0
080A	2058	87
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0

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

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