

DESCENDING ORDER

EXP NO: 13

AIM: To compute descending order of an array using 8085 processor.

ALGORITHM:

- 1) Initialize HL pair as memory pointer.
- 2) Get the count at memory and load it into C register
- 3) Copy it in D register (for bubble sort (N-1)) times required).
- 4) Get the first value in A register.
- 5) Compare it with the value at next location.
- 6) If they are out of order, exchange the contents of A register and memory.
- 7) Decrement D register content by 1
- 8) Repeat step 5 and 7 till the value in D register become zero.
- 9) Decrement the C register content by 1.
- 10) Repeat steps 3 to 9 till the value in C register becomes zero.

PROGRAM:

```
LOOP: LXI H,3500
MVI D,00
MVI C,05
LOOP1: MOV A,M
INX H
CMP M
JNC LOOP2
MOV B,M
```

```
MOV M,A
DCX H
MOV M,B
INX H
MVI D,01
LOOP2: DCR C
JNZ LOOP1
MOV A,D
RRC
JC LOOP
HLT
```

INPUT:

2

6

3

2

5

OUTPUT:

The screenshot displays the 8085 processor simulator interface. The main window is divided into several sections:

- Registers:** Shows the state of the 8085 registers. The **Flag** section indicates **S** is 0, **Z** is 1, **AC** is 0, **P** is 1, and **C** is 0.
- Assembly Code:** A list of instructions is shown, starting with `1 LOOP: LXI B, 3500` and ending with `20 HLT`. The **Load me at** field is empty.
- Decimal - Hex Conversion:** A section for converting between decimal and hex values, with both fields currently set to 0.
- I/O Ports:** A section for I/O operations, with a value of 0 and an **Update Port Value** button.
- Memory:** A section for memory operations, with a value of 0 and an **Update Memory** button.
- Memory Dump:** A table showing the memory contents starting at address 3500. The data is as follows:

Address (Hex)	Address	Data
0DAC	3500	6
0DAD	3501	5
0DAE	3502	3
0DAF	3503	2
0DB0	3504	2
0DB1	3505	0
0DB2	3506	0
0DB3	3507	0
0DB4	3508	0
0DB5	3509	0
0DB6	3510	0
0DB7	3511	0
0DB8	3512	0
0DB9	3513	0
- Assembler Message:** A message box at the bottom left shows the message: `0 Program assembled successfully`.

RESULT: Thus the program was executed successfully using 8085 processor simulator.