

## **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 & OUTPUT**

GNUSIM8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

Register	Value
A	00
BC	00 00
DE	00 00
HL	0D B1
PSW	00 00
PC	42 1E
SP	FF FF
Int-Reg	00

Flag

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

Decimal - Hex Conversion

Decimal	Hex
0	0

I/O Ports

Port	Value
0	00

Memory

Address	Value
0	00

Load me at:

```

1  LOOP: LXI H, 3500
2  MVI D, 00
3  MVI C, 05
4  LOOP1: MOV A, M
5  INX H
6  CMP M
7  JNC LOOP2
8  MOV B, M
9  MOV M, A
10 DCK H
11 MOV M, B
12 INX H
13 MVI D, 01
14 LOOP2: DCR C
15 JNZ LOOP1
16 MOV A, D
17 RRC
18 JC LOOP
19 HLT

```

Start: 3500 OK

Address (Hex)	Address	Data
0DAC	3500	35
0DAD	3501	23
0DAE	3502	20
0DAF	3503	12
0DB0	3504	8
0DB1	3505	2
0DB2	3506	34
0DB3	3507	0
0DB4	3508	0
0DB5	3509	0
0DB6	3510	0
0DB7	3511	0
0DB8	3512	0
0DB9	3513	0

Line No: Assembler Message

0 Program assembled successfully

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