DESCENDING ORDER

EXP NO: 13

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

ALGORITHM:

1) Initialise the HL pair as a 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 the 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 steps 5 and 7 till the value in D register becomes 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

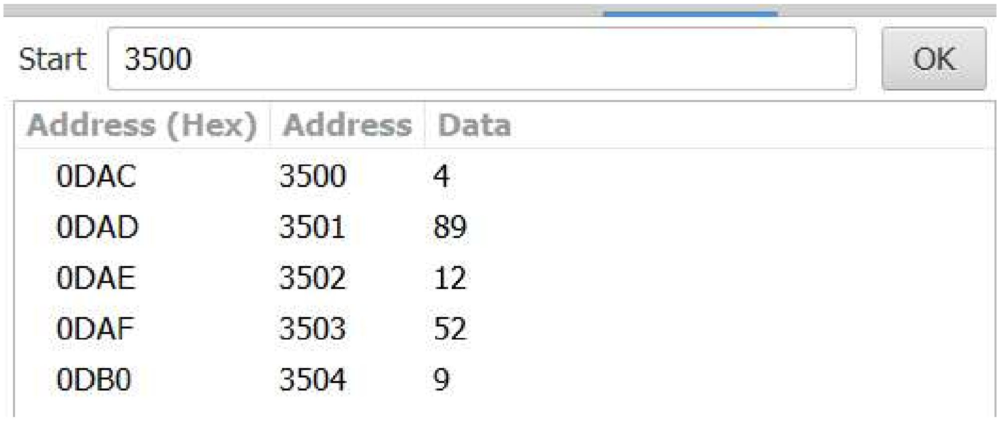
MOV A,D

RRC

JC LOOP

HLT

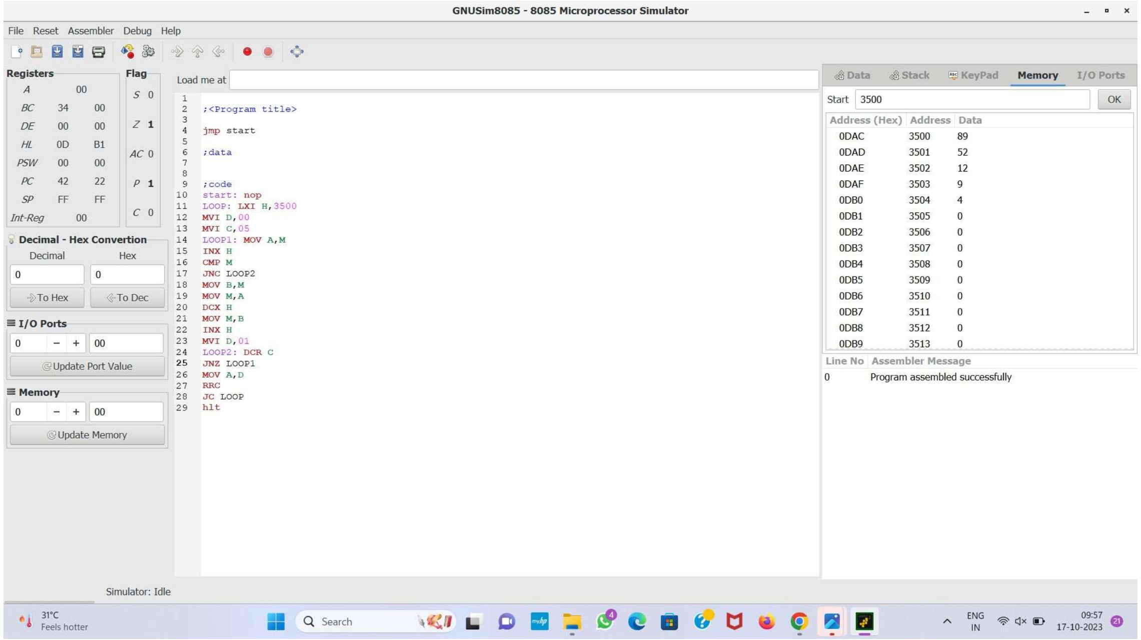
INPUT:



Start 3500 OK

Address (Hex)	Address	Data
0DAC	3500	4
0DAD	3501	89
0DAE	3502	12
0DAF	3503	52
0DB0	3504	9

OUTPUT:



Registers		
A	00	
BC	34	00
DE	00	00
HL	0D	B1
PSW	00	00
PC	42	22
SP	FF	FF
Int-Reg	00	

Flag	
S	0
Z	1
AC	0
P	1
C	0

Decimal 0 Hex 0

I/O Ports 0 00

Memory 0 00

Load me at

```
;<Program title>

jmp start

;data


;code
start: nop
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
```

Start 3500 OK

Address (Hex)	Address	Data
0DAC	3500	89
0DAD	3501	52
0DAE	3502	12
0DAF	3503	9
0DB0	3504	4
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

Line No	Assembler Message
0	Program assembled successfully

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