

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:

Start 3500

Address (Hex)	Address	Data
0DAC	3500	4
0DAD	3501	7
0DAE	3502	12
0DAF	3503	8
0DB0	3504	2
0DB1	3505	0

OUTPUT:

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	00	S	0
BC	08 00	Z	1
DE	00 78	AC	0
HL	0D B1	P	1
PSW	00 00	C	0
PC	42 22		
SP	FF FF		
Int-Reg	00		

Decimal - Hex Conversion

Decimal: 0 Hex: 0

To Hex To Dec

I/O Ports

0 - + 00 Update Port Value

Memory

0 - + 00 Update Memory

Load me at:

```
1 ;<Program title>
2
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 LOOP: LXI H, 3500
12 MVI D, 00
13 MVI C, 05
14 LOOP1: MOV A, M
15 INX H
16 CMP M
17 JNC LOOP2
18 MOV D, M
19 MOV M, A
20 DCX H
21 MOV M, B
22 INX H
23 MVI D, 01
24 LOOP2: DCR C
25 JNZ LOOP1
26 MOV A, D
27 RRC
28 JC LOOP
29 hlt
```

Start 3500 OK

Address (Hex)	Address	Data
0DAC	3500	12
0DAD	3501	8
0DAE	3502	7
0DAF	3503	4
0DB0	3504	2
0DB1	3505	1
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

Simulator: Idle

27°C Mostly cloudy

Search

ENG IN 09:35 AM 17-10-2023

RESULT: Thus

the program was executed successfully using 8085 processor simulator.