Experiment - VIII

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1 Aim:

Write an assembly language programm to arrange 10 data bytes from D000H to D009H in ascending order.

2 Code

```
# ORG D000H
# DB FF, FE, 01, 02, 05, 0A, 0B, 08, 09, 04
# ORG 0700H
            MVI D,09

OUTLOOP:    MOV C,D
            LXI H,D000

INLOOP:     MOV A,M
            INX H
            CMP M
            JC SKIP
            MOV B,M
            MOV M,A
            DCX H
            MOV M,B
            INX H

SKIP:       DCR C
            JNZ INLOOP
            DCR D
            JNZ OUTLOOP
            HLT
```

3 Observations:

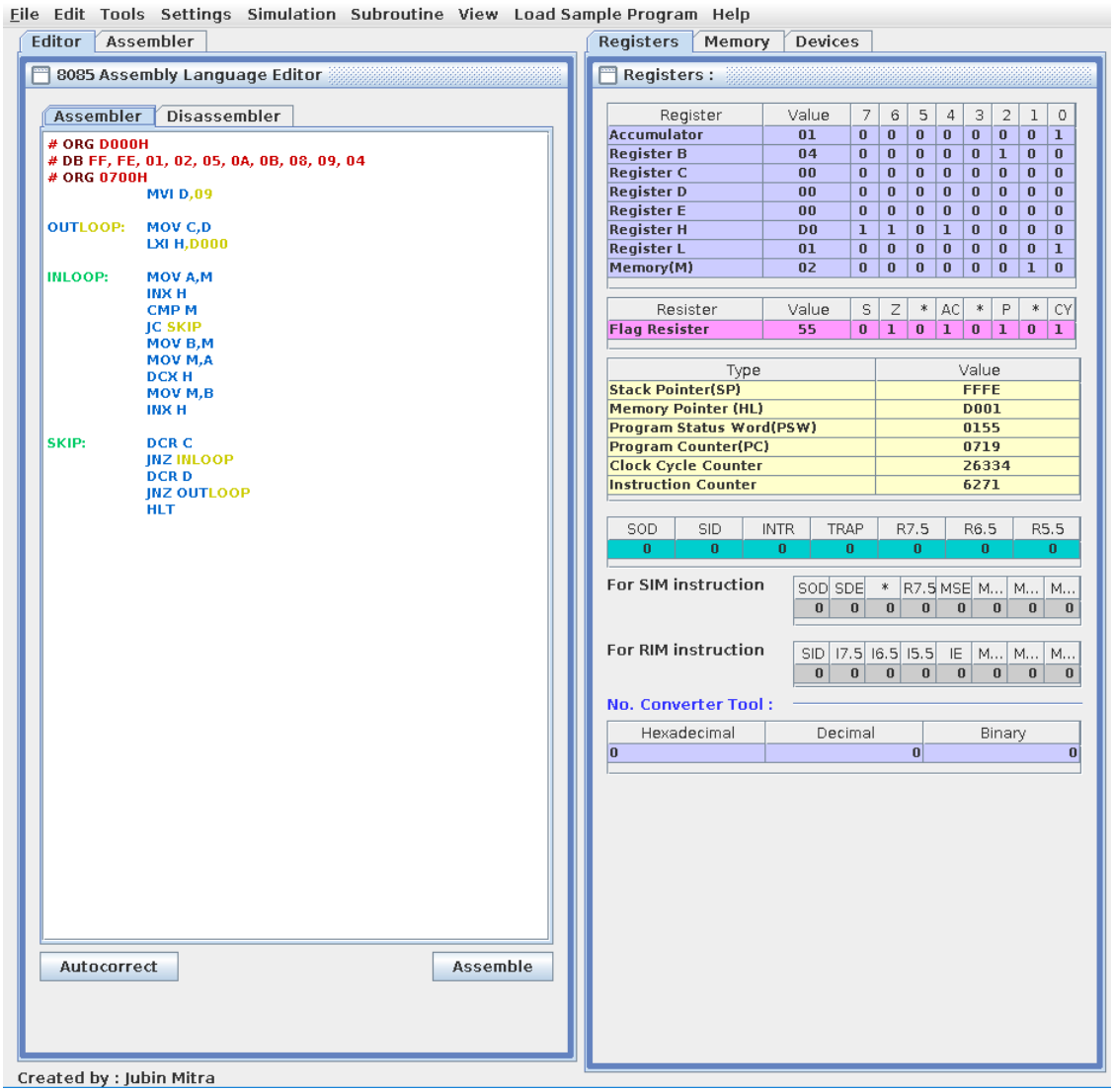

Figure 1: (a) Ascending bubble sort

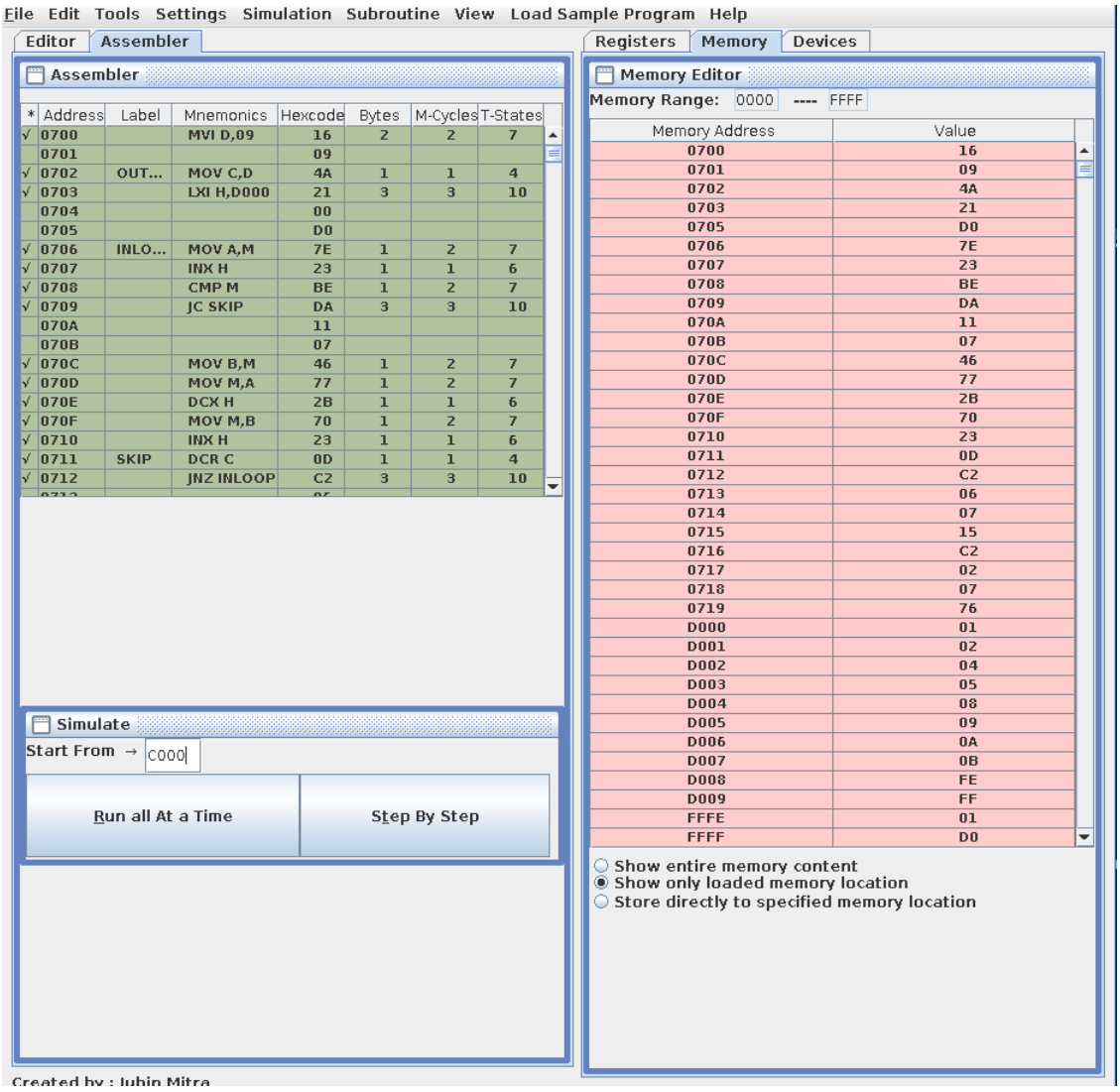

Figure 2: (b) Ascending bubble sort

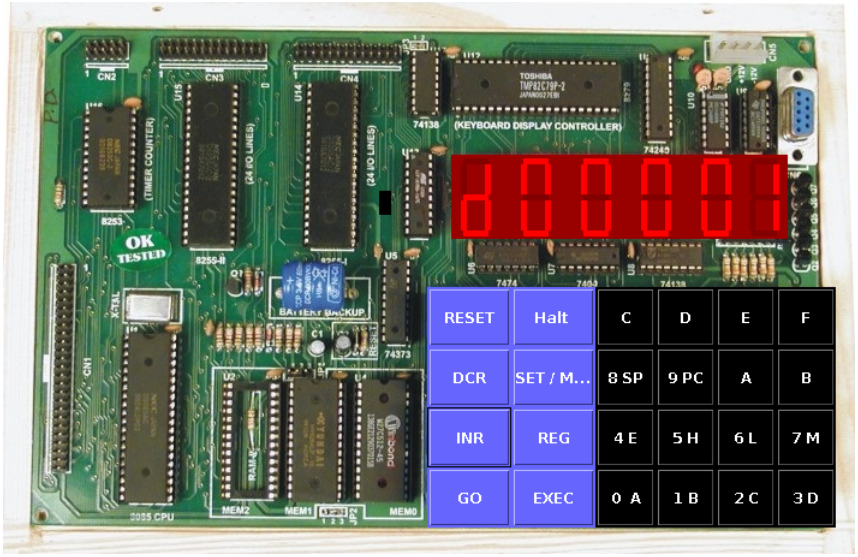

Figure 3: (c) Ascending bubble sort

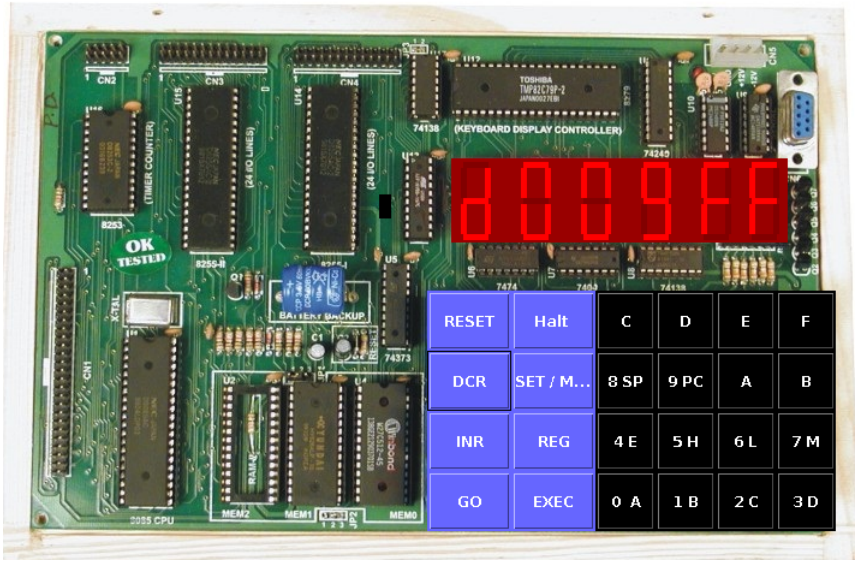

Figure 4: (d) Ascending bubble sort

4 Conclusion:

location	data
$C500H$	FF
$C501H$	FE
$C502H$	01
$C503H$	02
$C504H$	05
$C505H$	$0A$
$C506H$	$0B$
$C507H$	08
$C508H$	09
$C509H$	04

Table 1: Input

location	data
$C500H$	01
$C501H$	02
$C502H$	04
$C503H$	05
$C504H$	08
$C505H$	09
$C506H$	$0A$
$C507H$	$0B$
$C508H$	FE
$C509H$	FF

Table 2: Output

Hence the programs for ascending sorting of ten 8-bit numbers given in section 2 works as expected for 8085 microprocessor.