

LAB PROGRAM-2

```
.model small
.data
    n db 5
    a db 05, 07, 04, 03, 06, 02
.code
    mov ax, @data
    mov ds, ax
    mov cx
```

BUBBLE SORT

```
.model small
display macro msg
    lea dx, msg
    mov ah, 09h
    int 21h
endm
```

```
.data
```

```
n db 6
```

```
a db 05, 07, 04, 03, 06, 02
```

```
msg1 db 0dh, 0ah, "1- sort in ascending order"
```

```
msg2 db 0dh, 0ah, "2- sort in descending order"
```

```
msg3 db 0dh, 0ah, "3- exit"
```

```
msg4 db 0dh, 0ah, "enter your choice"
```

```
msg5 db 0dh, 0ah, "Invalid choice"
```

```

.code
mov ax, @data
mov ds, ax
lea si, a
mov cl, n
dec cl
display msg 1
display msg 2
display msg 3
display msg 4
mov ah, 01h
int 21h
sub al, 30h
cmp al, 01h
je cursor
cmp al, 03h
je final
display msg 5
jmp final

```

```

cursor: mov cx, cl
        mov si, 00h
        loopa: mov al, a[si]
                inc si
                cmp al, a[si]

```



```

je now
xchg al, a[si]
mov a[si-1], al
now: dec ch
      jnz inloopa
      dec cl
      jnz deusort
      jmp final

```

```

deusort: mov ch, cl
         mov si, 00h

```

```

inloopd: mov al, a[si]
         inc si
         cmp al, a[si]
         jnc nowd
         xchg al, a[si]
         mov a[si-1], al
         nowd: dec ch
               jnz inloopd
               dec cl
               jnt deusort
               jmp final

```

final: mov ah, 4ch
int 21h
end

DOSBox 0.74-3, Cpu speed: max 100% cycles, Frameskip 0, Prog...

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local				reg
source1 CS:IP (ACTIVE)				
052A:009D	B44C	MOV	AH,4C	AX = 4C01
052A:009F	CD21	INT	21	BX = 0105
052A:00A1	0001	ADD	Byte Ptr [BX+DI],AL	CX = 0501
052A:00A3	0205	ADD	AL,Byte Ptr [DI]	DX = 0053
052A:00A5	0934	OR	Word Ptr [SI],SI	SP = 0000
052A:00A7	F4	HLT		BP = 0001
052A:00A8	0D0A31	OR	AX,310A	SI = 0003
052A:00AB	203E3E20	AND	Byte Ptr [203E],BH	DI = 0000
052A:00AF	53	PUSH	BX	DS = 0534
052A:00B0	4F	DEC	DI	ES = 051A
052A:00B1	52	PUSH	DX	SS = 0529
052A:00B2	54	PUSH	SP	CS = 052A
052A:00B3	20494E	AND	Byte Ptr [BX+DI+4E],CL	IP = 00A1
052A:00B6	204153	AND	Byte Ptr [BX+DI+53],AL	FL = 0246
052A:00B9	43	INC	BX	
052A:00BA	45	INC	BP	

command	
0534:0000	21 00 01 02 05 09 34 F4-0D 0A 31 20 3E 3E 20 53 ?...
0534:0010	4F 52 54 20 49 4E 20 41-53 43 45 4E 44 49 4E 47 ORT I

PF=Trace>
P10=Step>
F5=Go>
F6=Window>
F3=Displau>

AX = 4C01
BX = 0105
CX = 0501
DX = 0053
SP = 0000
BP = 0001
SI = 0003
DI = 0000
DS = 0534
ES = 051A
SS = 0529
CS = 052A
IP = 00A1
FL = 0246

NU UP EI FL
ZR NA PE NC

DS:0105
BF