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Bubble Sort :- (LAB-2)

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

.data
List db 02H, 01H, 34H, 0F4H, 09H, 05H
Number equ $-list.
msg1 db 0dh, 0ah, "1>> Sort in ascending order.$"
msg2 db 0dh, 0ah, "2>> Sort in desc order$"
msg3 db 0dh, 0ah, "3>> EXIT $"
msg4 db 0dh, 0ah, "Enter your choice :: $"
msg5 db 0dh, 0ah, "Invalid choice $"

.code
start: mov ax, @data
       mov ds, ax
       lea si, list
       mov ch, number-1
       display msg1
       display msg2
```

```
display msg 3
display msg 4
mov ah, 01H
int 21h.
sub AL, 30H
cmp AL, 01H
JE ASCORT
cmp AL, 02H
JE DESSORT
cmp AL, 03H
JE FINAL
display msg 5
jmp final.

Ascort: mov bl, 00H

again: mov si, offset list
       mov cl, 00H          ; j value.
       mov Bh, ch           ; BH = n-1
       sub bh, bl           ; n-1-i  (inner loop)

Apass: cmp cl, Bh.
       JNC Next
       mov al, [si]
       mov bp, 01h.
```

```
cmp AL, ds:[BP][si] ; comparing a[i] and a[i+1]
JC _NOPE
XCHG AL, [si+1]
XCHG [si], AL.

_NOPE: Inc cl
Inc si
Jmp npass

Next: INC BL
Cmp bl, ch      ; bl = no of passes (n-1)
JC again
Jmp final

Dessert: MOV BL, 00H
Again1: mov si, offset list
mov cl, 00h     ; J value
mov bh, ch      ;
sub bh, bl      ; N-1-i

npass1: cmp a, Bh
JNC next
mov al, [si]
mov BP, 01h
cmp al, ds:[bp][si]
```

```
JNC_nope2
XCHG AL, [si+1]
XCHG [si], AL

nope1: Inc dl
       Inc si
       Jmp @npass 1

next1: Inc bl
       cmp bl, ch
       JC again 1

Final: mov ah, 4ch
       int 21h

End start
```