

## LAB-2 BUBBLE SORT

.model small

```
display macro msg
lea lea dx, msg
    mov ah, 09h
    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 descending  
order $"
```

```
msg3 db 0dh, 0ah, "3 >> Exit $"
```

```
msg4 db 0dh, 0ah, "Enter your choice :: $"
```

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

.code

```
start: mov ax, @data
```

```
    mov ds, ax
```

```
    lea si, list
```

```
    mov ch, number-1
```

```
    display msg1
```

```
    display msg2
```

```
    display msg3
```

```
    display msg4
```

```
    mov dh, 01h
```

```
    int 21h
```

```
    sub al, 30h
```

```
    cmp al, 01h
```

```

je vssort
cmp al, 02h
je vdessort
cmp al, 03h
je vfinal
display msg.5
jmp final

```

```

vssort: mov bl, 00h
again:  mov si, offset list
        mov cl, 00h
        mov bh, ch
        sub bh, bl

```

```

npass:  cmp cl, bh
        jnc next
        mov al, [si]
        mov bp, 01h
        cmp al, ds:[BP][SI]
        jc  -nope
        xchg AL, [SI+1]
        xchg [SI], AL

```

```

-nope:  inc cl
        inc SI
        jmp npass

```

```

next:   inc BL
        cmp BL, CH
        jc  again
        jmp final

```

```

dessort: mov bl, 00h
again1:  mov SI, offset list
        mov cl, 00h
        mov bh, ch

```

Sub bh, bl

NPASS1 : cmp CL, BH

JNC NEXT

MOV AL, [SI]

MOV BP, 01H

CMP AL, DS: [BP][SI]

JNC \_NOPE1

XCHG AL, [SI+1]

XCHG [SI], AL

\_NOPE1 : INC CL

INC SI

JMP NPASS1

NEXT1 : INC BL

CMP BL, CH

JC AGAIN1

FINAL : MOV AH, 4CH

INT 21H

END START.