

## Bubble Sort program

.MODEL small

```

Display macro msg
    lea dx, msg
    mov ah, 09H
    int 21H

```

Ends

.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 >> EXITS$"

```

```

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 AH, 01H

```

```

        INT 21H

```

```

        SUB AL, 03H

```

```
CMP AL, 01H
JE ASCSORT
CMP AL, 02H
JE DESSORT
CMP AL, 03H
JE FINAL
DISPLAY MSGS
JMP FINAL
```

```
ASCSORT : 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]
```

```
JNC -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

FSUB BH, BL

NPASS1 : CMP CL, BH

JNC NEXT1

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