

# Lab program-2 Bubble sort

• MODEL SMALL

DISPLAY MACRO MSG

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, "Enter your Invalid

choice entered \$"

• CODE

START: MOV AX, @DATA

MOV DS, AX

LEA SI, LIST

MOV CH, NUMBER-1; CL STORES THE NUMBER  
OF ELEMENTS IN LIST

DISPLAY MSG1; DISPLAY THE MENU

DISPLAY MSG2

DISPLAY MSG3

DISPLAY MSG4

MOV AH, 01H

INT 21H

SUB AL, 30H

CMP AL, 01H; INPUT = 1? SORT IN ASCENDING  
ORDER



JE ASCSORT  
CMP AL, 02H ; INPUT=2? SORT IN DESCENDING  
ORDER

JE DESSORT  
CMP AL, 03H ; INPUT=3? EXIT  
JE FINAL  
DISPLAY MSG'S  
JMP FINAL

ASCSORT: MOV BL, 00H

AGAIN: MOV SI, OFFSET LIST

MOV CL, 00H ; JVALUE

MOV BH, CH

SUB BH, BL ; N-1-1

NPASS: CMP CL, BH

JNC NEXT

MOV AL, [SI]

MOV BP, 01A

CMP AL, DS:[BP][SI]

JC NOPE

XCHG AL, [SI+]

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 ~~BL~~, ~~CL~~ CL, 00H ; Jvalue



```
MOV BH, CH
SUB BH, BL ; N-1-i
NPASS1: CMP CL, BH
JNC NEXT
MOV AL, [SI]
MOV BP, 01H
CMP AL, DS:[BP][SI]
JNC -NOPE1
XCHG AL, [SI+4]
XCHG [SI], AL
-NOPE1: INC CL
INC SI
JMP NPASS1
NEXT1: INCBP
CMP BP, CH
JC AGAIN1
FINAL: MOV AH, 4CH
INT 21H
END START
```