

Date ____/____/____

```

.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, "INVALID CHOICE ... $"

```

.CODE

START: MOV AX, @DATA

MOV DS, AX

LEA SI, LIST

MOV CX, 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 ASCORT

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

JE DESSORT

CMP AL, 03H ; INPUT=3? EXIT

JE FINAL

ASCORT: MOV BL, 00H

AGAIN: MOV SI, OFFSET LIST

MOV CL, 00H ; J VALUE

MOV BH, CH

SUB BH, BL ; N-1-i

NPASS: CMP CL, BH

JNC NEXT

MOV ~~AX~~^{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

DESCORT: MOV BL, 00H

AGAIN1: MOV SI, OFFSET LIST

MOV CL, 00H ; J VALUE

MOV BH, ~~CH~~^{CH}

SUB BH, BL

NPASS 1: CMP CL, BH

JNC NEXT

MOV AL, [SI]

MOV BP, 01H

CMP AL, DS: [BP][SI]

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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