

MP - lab 4 (Bubble Sort)

. Model Small

Display Macro Msg

led dx, msg

mov ah, 09h

int 21h

endm

. data

list db 02h, 01h, 34h, 0F4h, 09h, 05h

number equ \$-list

msg1 db 00h, 0ah, "1 >> Sort in ascending order \$"

msg2 db 00h, 0ah, "2 >> Sort in descending order \$"

msg3 db 00h, 0ah, "3 >> exit \$"

msg4 db 00h, 0ah, "enter your choice :: \$"

msg5 db 00h, 0ah, "Invalid choice entered... \$"

. code

Start: mov ax, @data

mov ds, ax

lea, si, list

mov cx, number-1

display msg1

display msg2

display msg3

display msg4

mov ah, 01h

int 21h

sub al, 30h

cmp al, 01h

je ascsort

cmp al, 02h

je desort

cmp al, 03h

je final

display msg5

jmp final

Asc sort: mov bl, 00h

Again: mov si, offset list

mov cl, 00h

mov bh, ch

sub bh, bl

N Pass: cmp cl, bh

jnc next

mov al, [SI]

mov bh, 01h

cmp al, ds: [BP][SI]

Jc - Nope

xchg al, [SI+1]

xchg [SI], al

- Nope: inc cl

inc si

jmp N Pass

next: inc bl

cmp bl, ch

Jc again

jmp final

desort: mov bl, 00h

again: mov si, offset list

mov cl, 00h

mov bh, ch

sub bh, bl

N Pass 1: 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

2. Nope1: inc cl

jmp NPass1

next: inc bl

cmp bl, ch

jc again1

final: mov ah, 4ch

int 21h

end start.