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Section: A1

Dept: INFORMATION TECHNOLOGY

Year: UG2 Sem 1

ASM lab assignment – 3

1. Write an Assembly Language Program to find the smallest number from a series of seven data bytes stored from DS: 0030H. Store the smallest number in DS: 0040H.

```
.model small
.stack 100h
.data
.code
main proc
    mov ax, @data
    mov ds, ax
    mov si, 0030h
```

```
    mov al, 0ffh
    mov cx, 0007h
```

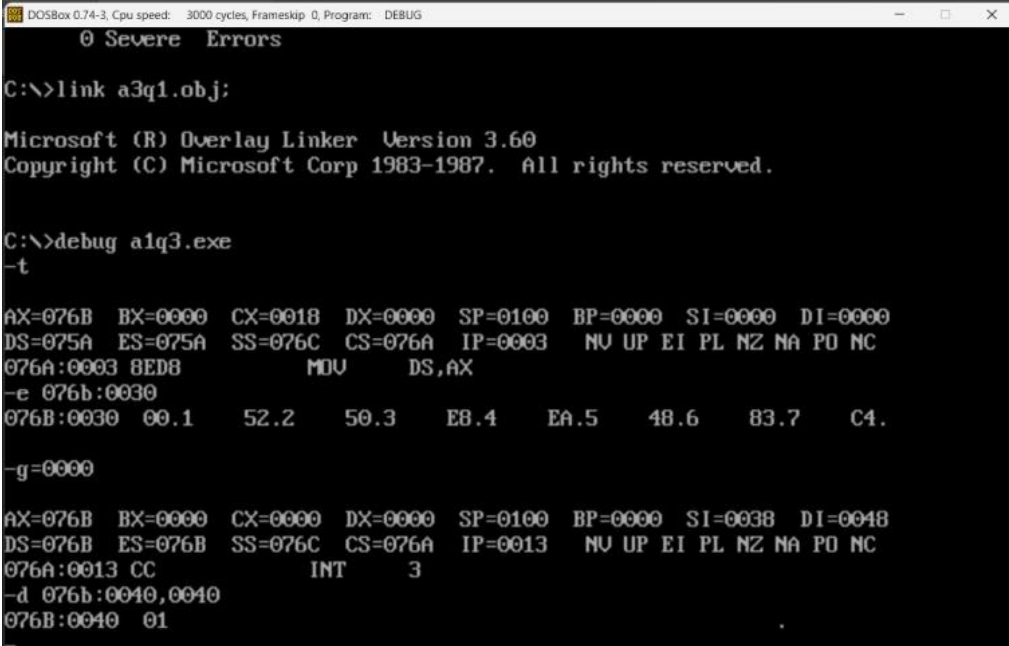
```
l1:
    cmp al, [si]
    jc l2
    mov al, [si]
```

```
l2:
    inc si
    loop l1
```

```
    mov si, 0040h
    mov [si], al
```

```
    int 03h
```

```
main endp
end main
```



```
DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip: 0, Program: DEBUG
0 Severe Errors
C:\>link a3q1.obj:
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.
C:\>debug a1q3.exe
-t
AX=076B BX=0000 CX=0018 DX=0000 SP=0100 BP=0000 SI=0000 DI=0000
DS=076A ES=075A SS=076C CS=076A IP=0003  NU UP EI PL NZ NA PO NC
076A:0003 8ED8          MOV     DS,AX
-e 076b:0030
076B:0030 00.1  52.2  50.3  E8.4  EA.5  48.6  83.7  C4.
-g=0000
AX=076B BX=0000 CX=0000 DX=0000 SP=0100 BP=0000 SI=0038 DI=0048
DS=076B ES=076B SS=076C CS=076A IP=0013  NU UP EI PL NZ NA PO NC
076A:0013 CC          INT     3
-d 076b:0040,0040
076B:0040 01
```

2. Write an Assembly Language Program to find the largest number from a series of 7 sixteen-bit numbers stored from DS: 0030H. Store the largest number in DS: 0040H.

```

model small
.stack 100h
.data
.code
main proc
    mov ax, @data
    mov ds, ax
    mov si, 0030h

    mov al, 0ffh
    mov cx, 0007h

```

```

11:
    cmp al, [si]
    jc l2
    mov al, [si]

12:
    inc si
    loop 11

    mov si, 0040h
    mov [si], al

    int 03h

main endp
end main

```

3. Write an Assembly Language Program to arrange a series of 7 data bytes stored from DS: 0030H in ascending order.

```

.model small
.stack 100h
.code

main proc
    mov ax, @data
    mov ds, ax
    mov bl, 06h

13:
    mov si, 0030h
    mov cl, 06h

```

```

l1:
mov al,[si]
inc si
cmp al,[si]
jc l2
mov dl,[si]
mov [si],al
dec si
mov [si],dl
inc si
l2:
loop l1
dec bl
cmp bl,00h
jnz l3

int 03h
mov ah,4ch
int 21h

main endp
end main

```

- Write an Assembly Language Program to arrange a series of 7 sixteen-bits data stored from DS: 0030H in descending order.

```

.model small
.stack 100h
.data
.code

main proc
    mov ax, @data
    mov es, ax
    mov ds, ax
    mov si, 0030h
    mov cx, 0006h

l1:
    mov si, 0030h
    mov bx, cx

l2:
    mov ax, [si]
    mov dx, [si + 2]
    cmp ax, dx
    jnc l3

```

```

mov [si], dx
mov [si + 2], ax
l3:
add si, 2
dec bx
jnz l2

loop l1

int 03h
mov ah, 4ch
int 21h

main endp
end main

```

5. Write an Assembly Language program to find the square of a number stored in DS: 0030H using LOOK-UP table. Assume that the LOOK-UP table is stored from DS: 0040H that contains the square of the numbers 0 to 9. Store the square value in DS: 0050H.

DS:0100H	00
DS:0101H	01
DS:0102H	04
DS:0103H	09
DS:0104H	16
DS:0105H	25
DS:0106H	36
DS:0107H	49
DS:0108H	64
DS:0109H	81

```

.model small
.stack 100h
.data
.code

main proc
mov ax, @data
mov es, ax
mov ds, ax
mov si, 0030h

```

```

mov al, [si]
mov bx,0040h
xlat
mov si,0050h
mov [si],al

int 03h
mov ah, 4ch
int 21h

main endp
end main

```

```

C:\>debug assn3q5.exe
-t

AX=076B  BX=0000  CX=001B  DX=0000  SP=0100  BP=0000  SI=0000  DI=0000
DS=075A  ES=075A  SS=076C  CS=076A  IP=0003  NU UP EI PL NZ NA PO NC
076A:0003 8ED8          MOV     DS,AX
-e 076b:0100
076B:0100 FF.00  50.01  EB.04  89.09  69.16  83.25  6B.36  07.49
076B:0108 00.64  00.B1

-e 076b:0030
076B:0030 00.05

-g=0000

AX=0725  BX=0100  CX=001B  DX=0000  SP=0100  BP=0000  SI=0040  DI=0000
DS=076B  ES=075A  SS=076C  CS=076A  IP=0013  NU UP EI PL NZ NA PO NC
076A:0013 CC          INT     3
-d 076b:0040,0040
076B:0040 25          %

```