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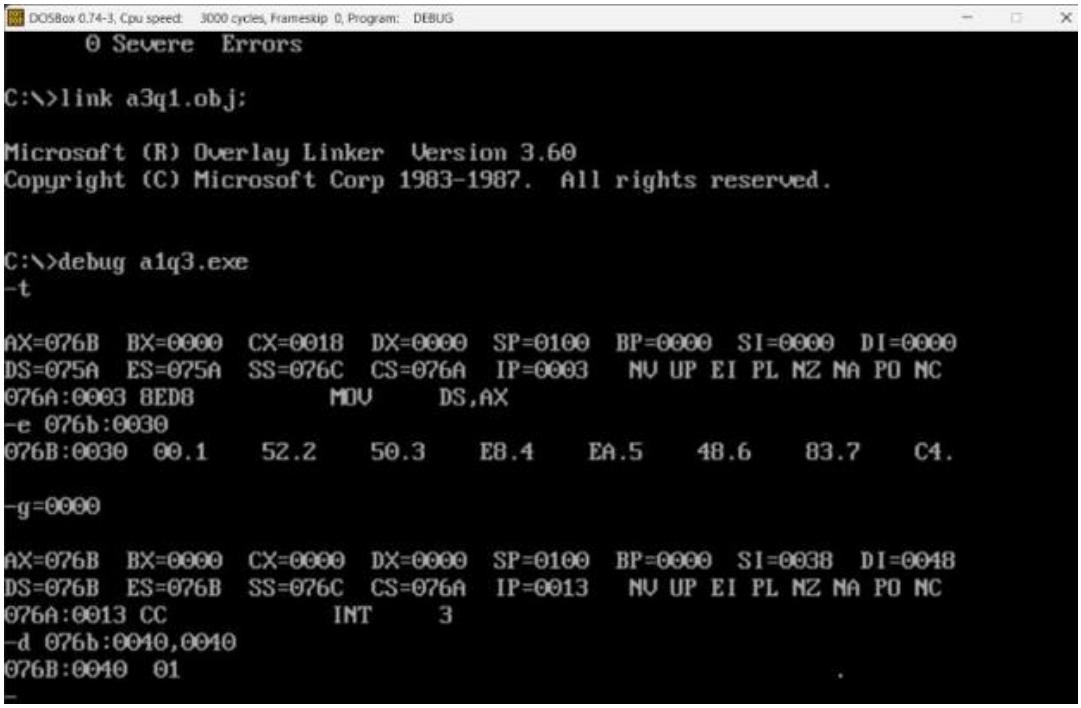
Semester: 1st

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.

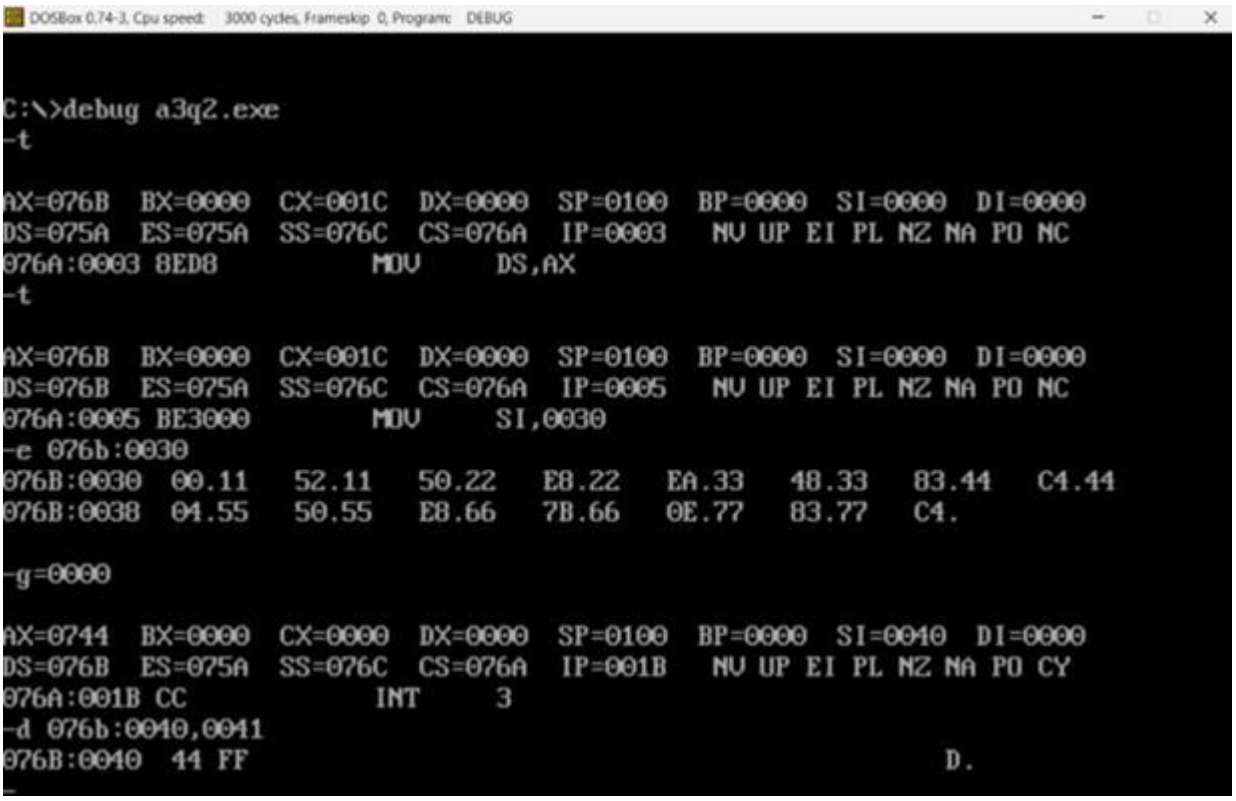
```
.model small
.stack 100h
.data
.code
main proc
   mov ax, @data
   mov ds, ax
   mov si, 0030h

   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
```



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, 00h
   mov cx, 0007h

l1:
   cmp al, [si]
   jnc l2
   mov al, [si]

l2:
   inc si
   loop l1

mov si, 0040h
mov [si], al

int 03h
```

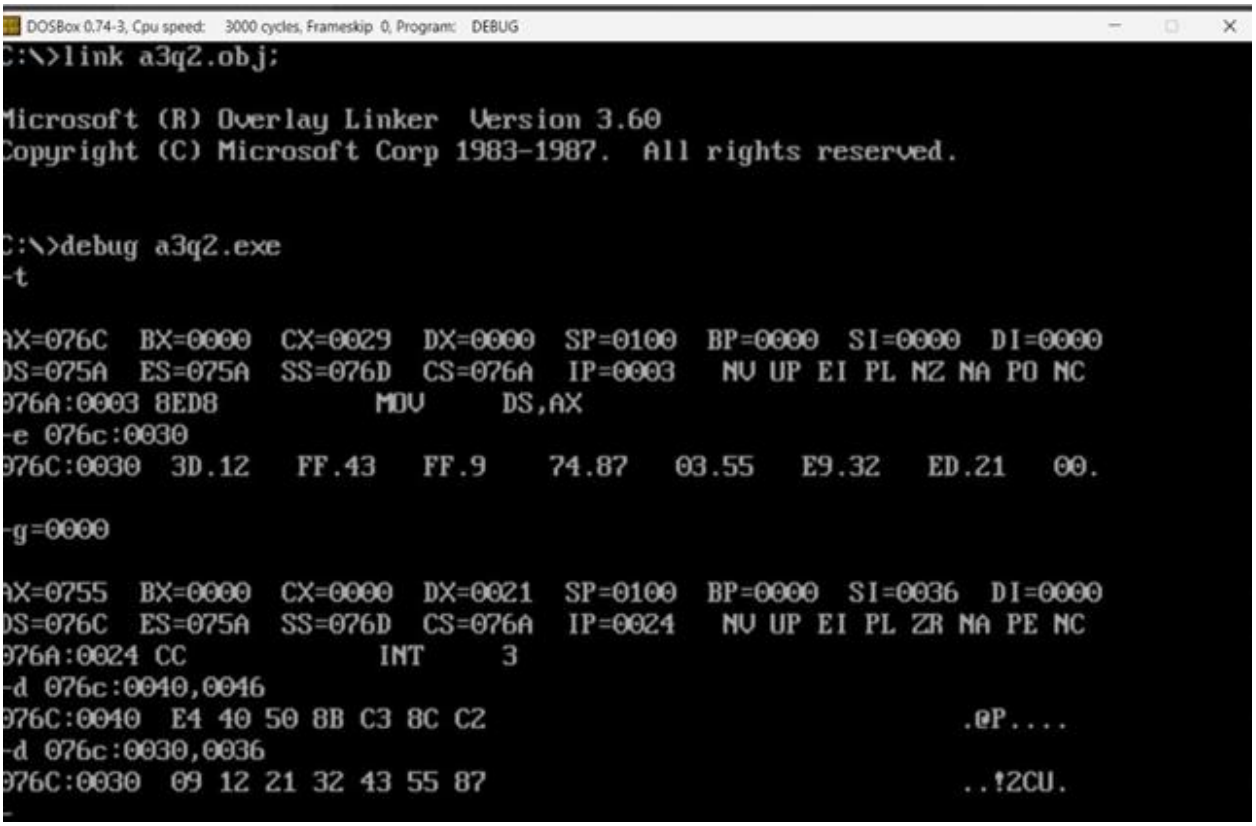
```
main endp
end main
```



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

l3:
mov si,0030h
mov cl,06h

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

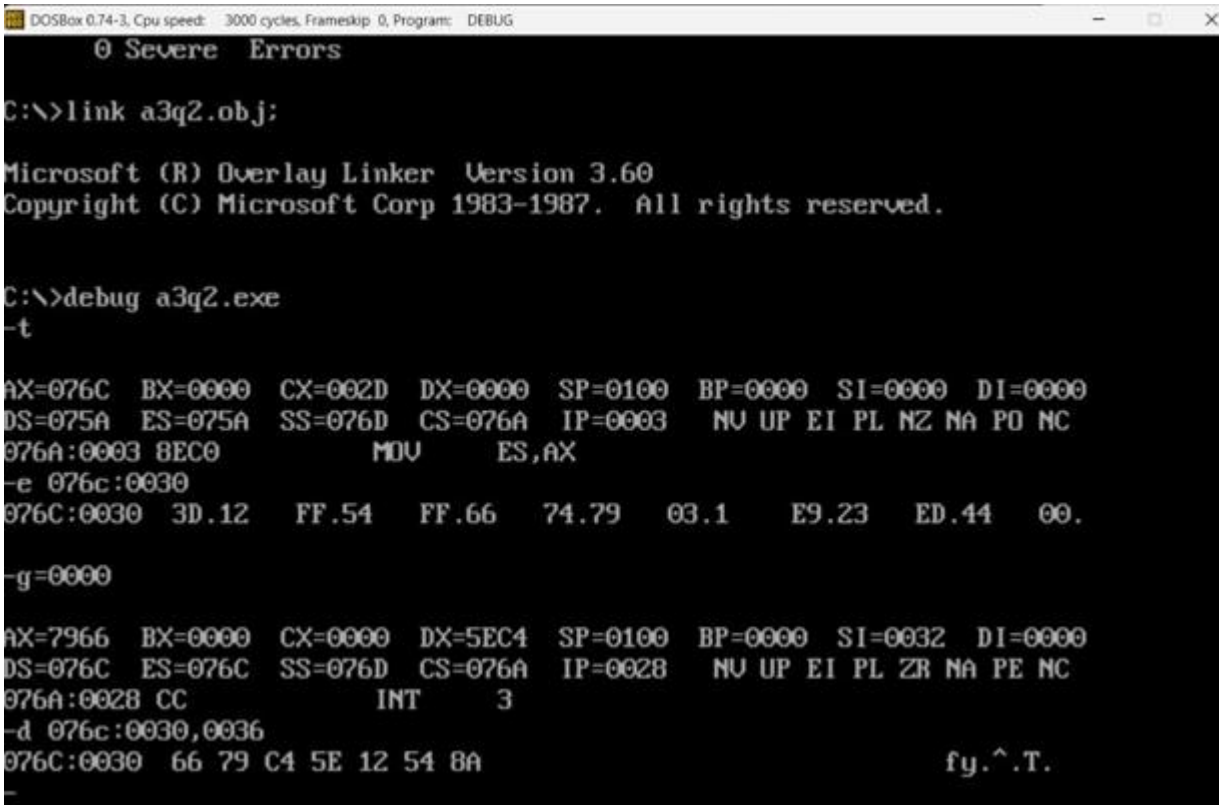
```
mov dl,[si]
mov [si],al
dec si
mov [si],dl
inc si
l2:
loop l1
dec bl
cmp bl,00h
jnz l3

int 03h
mov ah,4ch
int 21h

main endp
endmain
```



4. 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
endmain
```

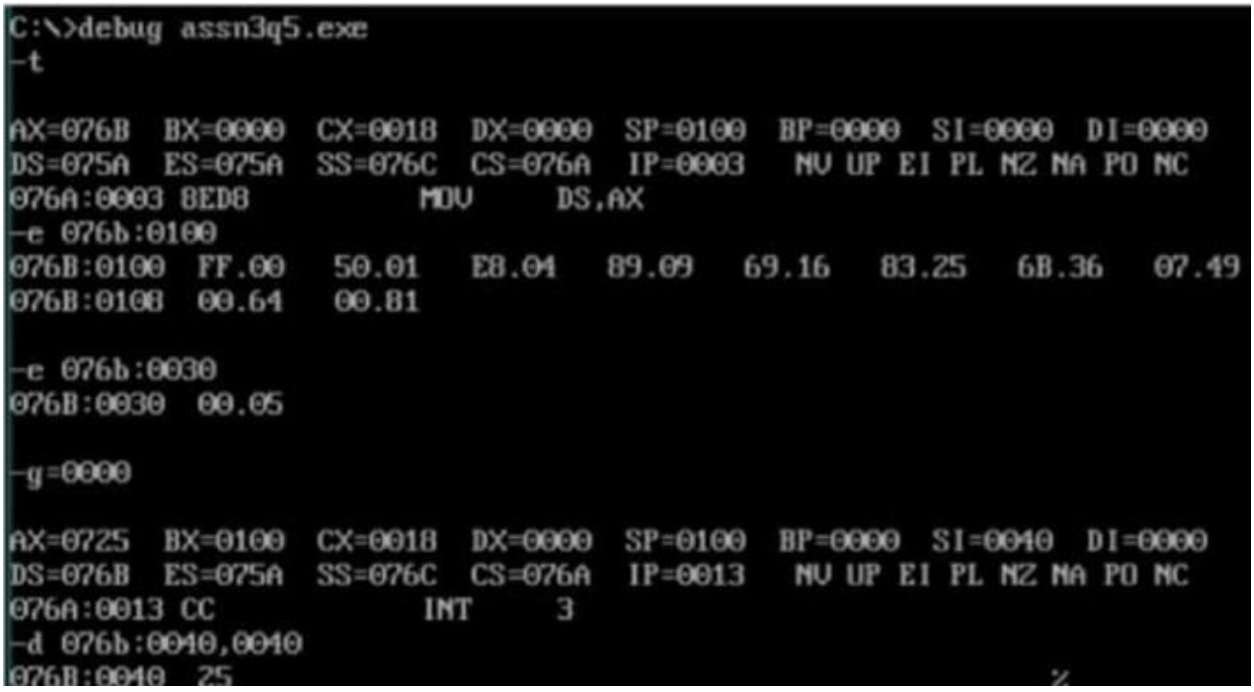


5. Write an Assembly Language program to find the square of a number stored in DS: 0030H using LOOK-UP table. Assume that the LOOK-UP table is stored from DS: 0040H that contains the square of the numbers 0 to 9. Store the square value in DS: 0050H.

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
```

```
.model small
.stack 100h
.data
.code

main proc
    mov ax, @data
    mov ds, ax

    mov si, 0030h

    mov al, [si]
    mov bx, 0100h
    xlat

    mov si, 0040h
    mov [si], al

    int 03h
    mov ah, 4ch
    int 21h
main endp
end main
```


C:\>debug assn3q5.exe
-t
AX=076B BX=0000 CX=0018 DX=0000 SP=0100 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=076C CS=076A IP=0003 NV UP EI PL NZ NA PO NC
076A:0003 8ED8 MOV DS,AX
-e 076b:0100
076B:0100 FF.00 50.01 E8.04 89.09 69.16 83.25 6B.36 07.49
076B:0108 00.64 00.81
-e 076b:0030
076B:0030 00.05
-g=0000
AX=0725 BX=0100 CX=0018 DX=0000 SP=0100 BP=0000 SI=0040 DI=0000
DS=076B ES=075A SS=076C CS=076A IP=0013 NV UP EI PL NZ NA PO NC
076A:0013 CC INT 3
-d 076b:0040,0040
076B:0040 25