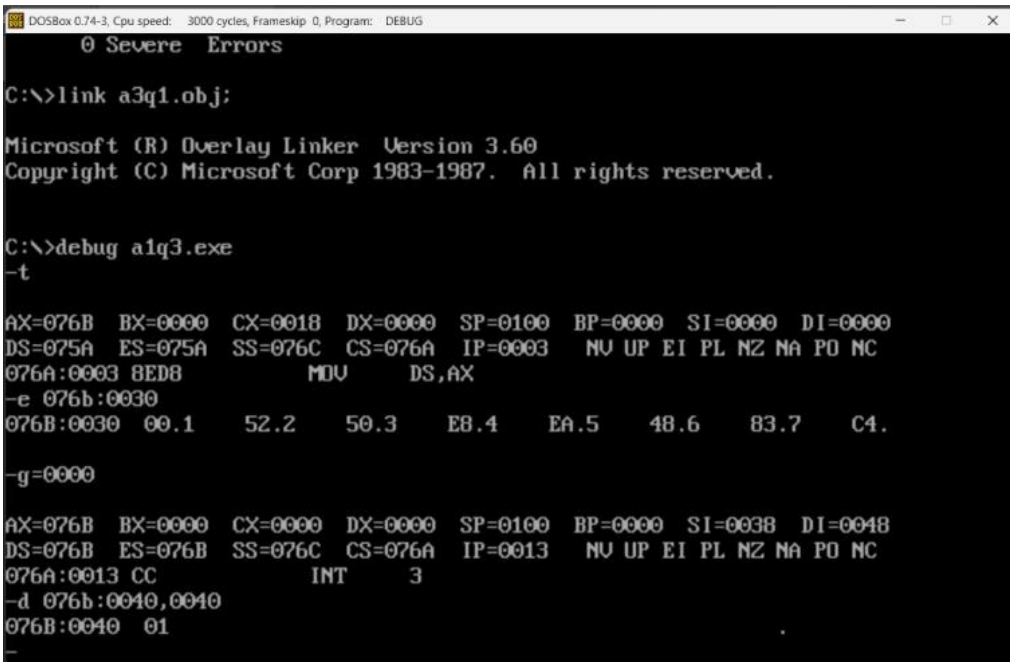
Name: ANUSKA NATH
Roll Number: 002311001003
Section: A1
Dept: INFORMATION TECHNOLOGY
Year: UG2 Sem 1

ASM lab assignment – 3

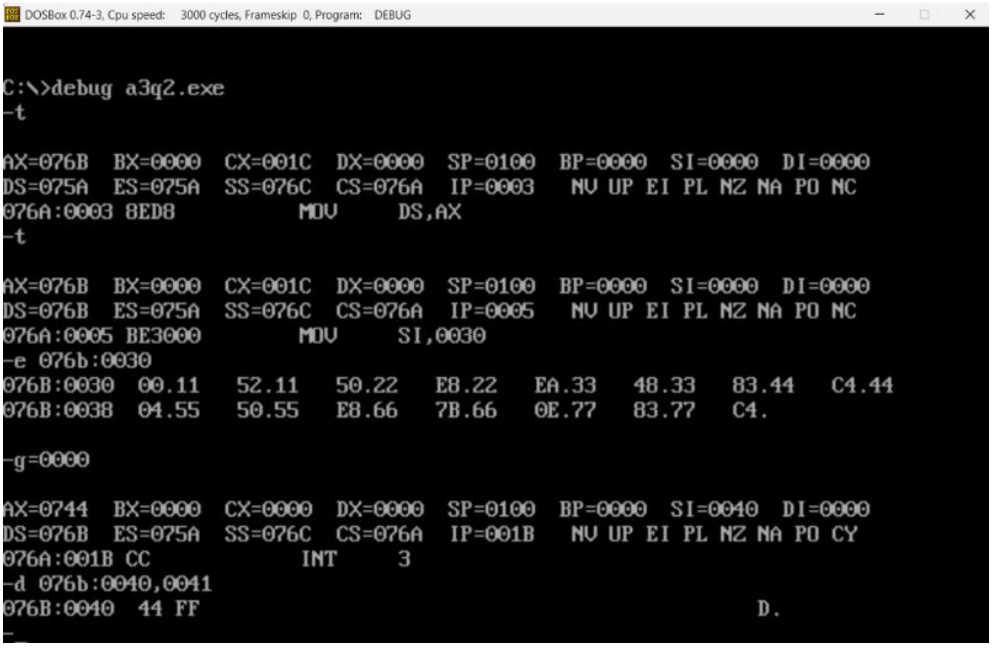
1. Write an Assembly Language Program to find the smallest number from a series of seven data bytes stored from DS: 0030H. Store the smallest number in DS: 0040H.

```
.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
```



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.

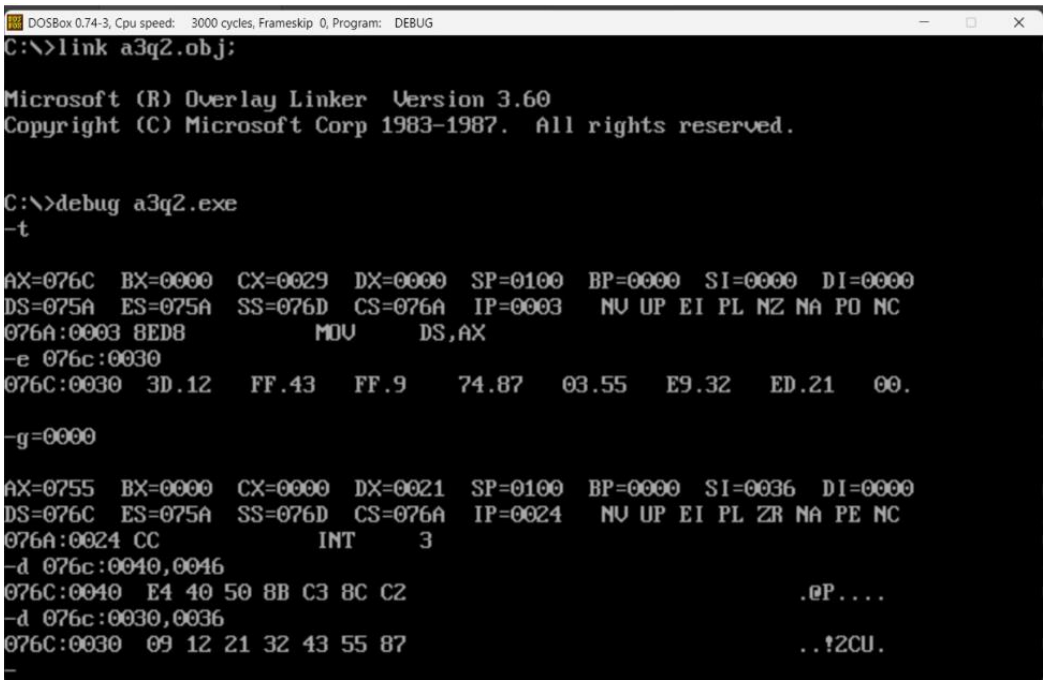
```
model small
.stack 100h
.data
.code
main proc
  mov ax, @data
  mov ds, ax
  mov si, 0030h

  mov al, 0ffh
  mov cx, 0007h

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
```



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
```

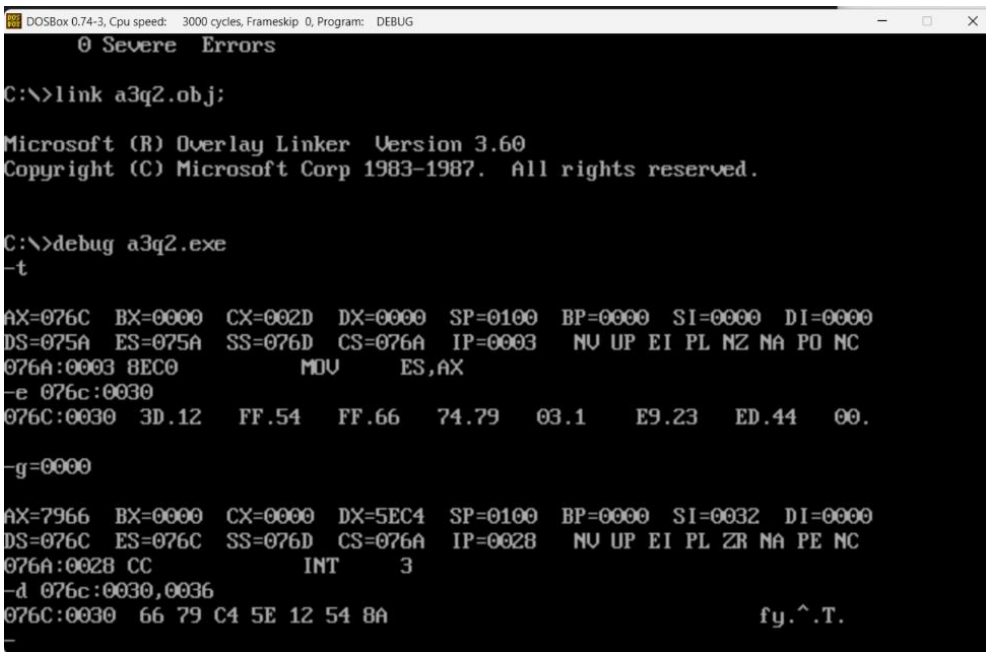
```
l1:
mov al,[si]
inc si
cmp al,[si]
jc l2
mov dl,[si]
mov [si],al
dec si
mov [si],dl
inc si
l2:
loop l1
dec bl
cmp bl,00h
jnz l3

int 03h
mov ah,4ch
int 21h

main endp
end main
```



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
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
```