**ASM Laboratory**



Name: **Soham Das**

Section: **A1**

Roll No: **002311001004**

**IT-UG2**

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

A computer screen shot of a computer error

Description automatically generated

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, 0000h

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

A screenshot of a computer

Description automatically generated

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

A screenshot of a computer

Description automatically generated

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

A screenshot of a computer error

Description automatically generated

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 ds, ax

mov si, 0030h

;mov bl, [si]

;mov bh, 01h

;mov al, [bx]

mov al, [si] ; taking input in al

mov bx, 0100h ; moving to starting address of lookup table

xlat

mov si, 0040h

mov [si], al

int 03h

mov ah, 4ch

int 21h

main endp

end main

A computer screen with numbers and letters

Description automatically generated