Lab # 10

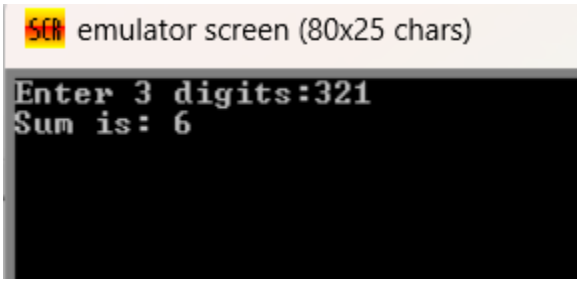
Array Processing in x86 Assembly Language

EXERCISE:

Q1) Calculate and display the sum of three numbers entered by the user, save input in an array.

```
.model small
.stack 100h
.data
    nums db 3 dup(?)          ; array to store 3 input digits
    msg1 db 'Enter 3 digits:$'
    msg2 db 13,10,'Sum is: $'
    sum db 0

.code
main:
    mov ax, @data
    mov ds, ax

    lea dx, msg1
    mov ah, 9
    int 21h

    mov si, 0

input_loop:
    mov ah, 1
    int 21h
    sub al, '0'
    mov nums[si], al
    inc si
    cmp si, 3
    jne input_loop

    mov al, nums[0]
    add al, nums[1]
    add al, nums[2]
    mov sum, al

    lea dx, msg2
    mov ah, 9
    int 21h

    mov al, sum
    add al, '0'
    mov dl, al
    mov ah, 2
    int 21h

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

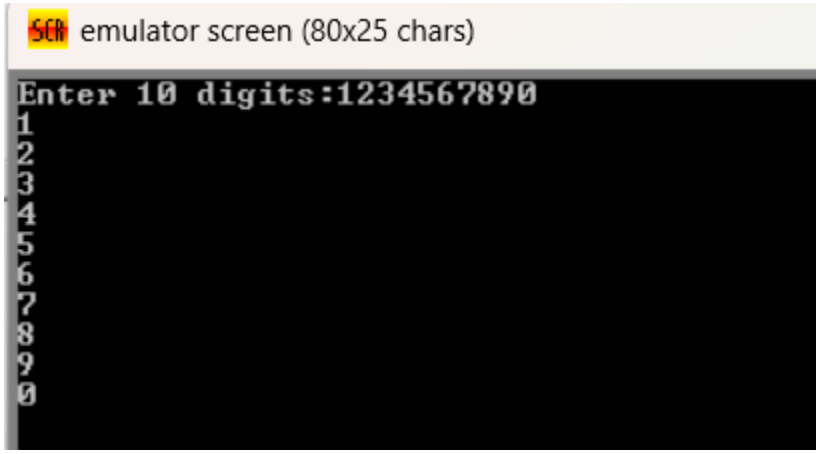
OUTPUT:



Q2) Enter 10 elements in an array using the input function and display them in a new line.

```
.model small
.stack 100h
.data
    arr db 10 dup(?)
    prompt db 'Enter 10 digits:$'
    newline db 13,10,'$'

.code
main:
    mov ax, @data
    mov ds, ax

    lea dx, prompt
    mov ah, 9
    int 21h

    mov si, 0

read_loop:
    mov ah, 1
    int 21h
    sub al, '0'
    mov arr[si], al
    inc si
    cmp si, 10
    jne read_loop

    lea dx, newline
    mov ah, 9
    int 21h

    mov si, 0

print_loop:
    mov dl, arr[si]
    add dl, '0'
    mov ah, 2
    int 21h

    lea dx, newline
    mov ah, 9
    int 21h

    inc si
    cmp si, 10
    jne print_loop

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

OUTPUT:



Q3)write a code to Save your name in an array and Display in reverse order .

```
.model small
.stack 100h
.data
    myname db 'marium'
    length db 6
    newline db 13,10,'$'

.code
main:
    mov ax, @data
    mov ds, ax

    lea dx, newline
    mov ah, 9
    int 21h

    mov cx, 0
    mov cl, length

    mov si, offset myname
    add si, cx
    dec si

print_loop:

    mov dl, [si]
    mov ah, 2
    int 21h

    dec si
    loop print_loop

    lea dx, newline
    mov ah, 9
    int 21h

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

OUTPUT: