**1. Write a program in assembly language to display a two-digit number on the screen. The**

**two-digits number is required to be taken in the program itself**.

**//CODE//**  
.model small

.stack 100h

.data

num1 db 8

num2 db 4

msg db 13 ,10,'the number is:$'

.code

start:

mov ax,@data

mov ds,ax

;display message

mov ah,09h

lea dx,msg

int 21h

;display num1

mov al, num1

add al, 30h

mov dl,al

mov ah,02h

int 21h

;display num2

mov al,num2

add al, 30h

mov dl, al

mov ah ,02h

int 21h

;exit program

mov ah, 4ch

int 21h

end start

**//OUTPUT//  
A computer screen with a black screen

Description automatically generated**

**2. Write an assembly language program to take two single-digit integers from the user and**

**print the result of addition on the screen.**

**//CODE//**

ORG 100h

\_start:

; Display message "Enter first digit: "

MOV DX, OFFSET msg\_input1

MOV AH, 09h

INT 21h

; Get the first single-digit integer from the user

MOV AH, 01h

INT 21h

CMP AL, '0'

JL InvalidInput

CMP AL, '9'

JG InvalidInput

SUB AL, '0'

MOV BL, AL

; Display message "Enter second digit: "

MOV DX, OFFSET msg\_input2

MOV AH, 09h

INT 21h

; Get the second single-digit integer from the user

MOV AH, 01h

INT 21h

CMP AL, '0'

JL InvalidInput

CMP AL, '9'

JG InvalidInput

SUB AL, '0'

MOV BH, AL

; Perform the subtraction (BL - BH)

ADD BL, BH

; Convert the result back to ASCII

ADD BL, '0'

; Display the result message

MOV DX, OFFSET msg\_output

MOV AH, 09h

INT 21h

; Display the result of the Addition

MOV DL, BL

MOV AH, 02h

INT 21h

JMP EndProgram ; End program execution

InvalidInput:

; If input is not a valid digit, display an error message

MOV DX, OFFSET msg\_error

MOV AH, 09h

INT 21h

EndProgram:

; Terminate the program

MOV AH, 4Ch

INT 21h

msg\_input1 DB 'Enter first digit: $'

msg\_input2 DB 0Dh, 0Ah, 'Enter second digit: $'

msg\_output DB 0Dh, 0Ah, 'The result is: $'

msg\_error DB 0Dh, 0Ah, 'Error: Invalid input! $'

END \_start

**//OUTPUT//**

A computer screen shot of a black screen

Description automatically generated