**1. Write a program in assembly language to take a single-digit integer from the user**

**and print it on the screen.**

**//CODE//**

org 100h

;display message"enter a digit:"

mov dx, offset msg\_input

mov ah, 09h

int 21h

;read single line character from the user

mov ah,01h

int 21h

mov bl,al

;check the character

cmp al, '0'

jl notdigit

cmp al, '9'

jg notdigit

;print the message

mov dx, offset msg\_output

mov ah, 09h

int 21h

;print entered digit

mov dl, bl

mov ah,02h

int 21h

jmp endprogram

;if the given data is not valid the it show error

notdigit:

mov dx, offset msg\_error

mov ah,09h

int 21h

;terminate the program

endprogram:

mov ah,4ch

int 21h

msg\_input db 'Enter a digit: $'

msg\_output db 0dh, 0ah, 'The entered digit is: $'

msg\_error db 0dh, 0ah, 'Error: Not a digit! $'

end

**//OUTPUT//**

**A screenshot of a computer

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**2. Write a program in assembly language to take two single-digit integers from the**

**user and print the result of subtraction 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)

SUB 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 subtraction

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

**//OUTPUT//**

**A screen shot of a computer

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