Computer Organization and Architecture Lab

LAB ASSIGNMENT – 8

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CSE-F

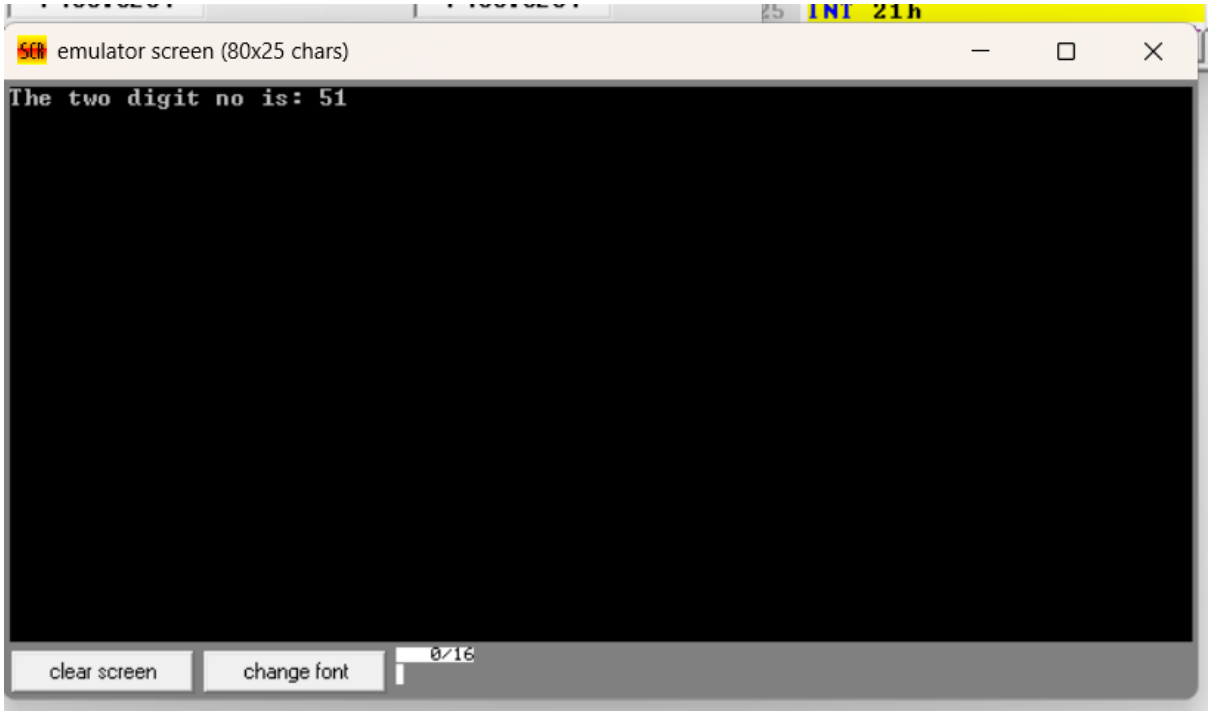
1. Write a program in assembly language to display a two-digit number on the screen. The two-digits number is required to be taken in the program itself.

Code:

```
ORG 100h
; Two-digit number to be displayed
MOV AL, 86    ; Load the two-digit number into AL
; Split the number into tens and units
MOV BL, 10        ; Set divisor to 10 to separate tens and units
DIV BL            ; Divide AL by 10, AL = quotient (tens), AH = remainder (units)
; Store the quotient (tens) and remainder (units)
MOV BH, AL        ; Store the tens digit in BH
MOV BL, AH        ; Store the units digit in BL
MOV DX, OFFSET msg_1
MOV AH, 09h
INT 21h
; Convert tens digit to ASCII
ADD BH, '0'       ; Convert the tens digit to ASCII
MOV DL, BH        ; Move the ASCII tens digit to DL for printing
MOV AH, 02h       ; DOS interrupt to print a character
INT 21h           ; Print the tens digit
; Convert units digit to ASCII
ADD BL, '0'       ; Convert the units digit to ASCII
MOV DL, BL        ; Move the ASCII units digit to DL for printing
MOV AH, 02h       ; DOS interrupt to print a character
```

```
INT 21h          ; Print the units digit
; Terminate the program
MOV AH, 4Ch      ; DOS interrupt to exit the program
INT 21h
msg_1  DB 'The two digit no is : $'
END
```

OUTPUT:



Practice Set:

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

MOV DX, OFFSET msg_input1
MOV AH, 09h
INT 21h

; Read the first digit from the user
MOV AH, 01h
INT 21h
SUB AL, '0'       ; Convert ASCII to integer
MOV BL, AL        ; Store the first digit in BL

; Display the message "Enter the second digit: "
MOV DX, OFFSET msg_input2
MOV AH, 09h
INT 21h
```

```
; Read the second digit from the user
MOV AH, 01h
INT 21h
SUB AL, '0'        ; Convert ASCII to integer
MOV CL, AL         ; Store the second digit in CL

; Perform addition
ADD BL, CL         ; Add the two digits, result in BL

; Convert the result back to ASCII
ADD BL, '0'        ; Convert the sum to ASCII

; Display the message "The result of addition is: "
MOV DX, OFFSET msg_output
MOV AH, 09h
INT 21h

; Print the result
MOV DL, BL
MOV AH, 02h
INT 21h

MOV DL, 0Dh
MOV AH, 02h
INT 21h
MOV DL, 0Ah
INT 21h

; Terminate the program
MOV AH, 4Ch
INT 21h
```

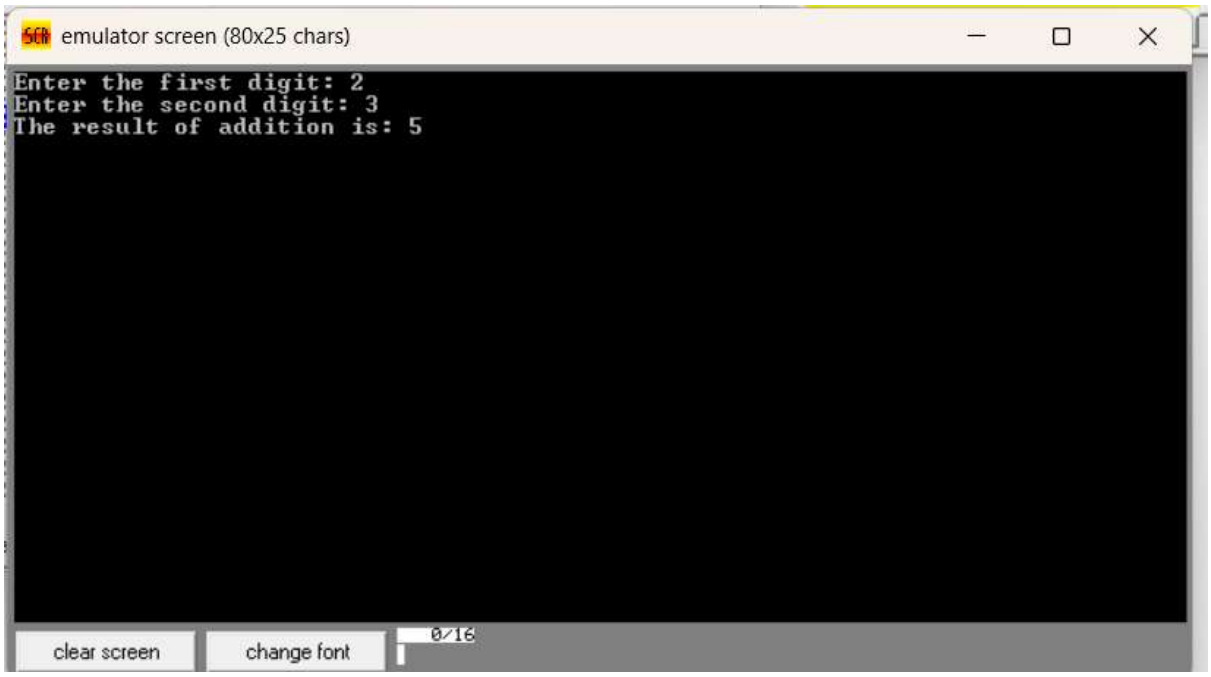
; Data section with messages

msg_input1 DB 'Enter the first digit: $'

msg_input2 DB 0Dh, 0Ah, 'Enter the second digit: $'

msg_output DB 0Dh, 0Ah, 'The result of addition is: $'

END**Output:**



github https://github.com/Nikitha2341/COA-LABTASK8/upload