Department of CSE

Lab Report 01

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Submitted to:

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Lecturer, Microprocessor Assembly Programming, UU

Problem Statement:

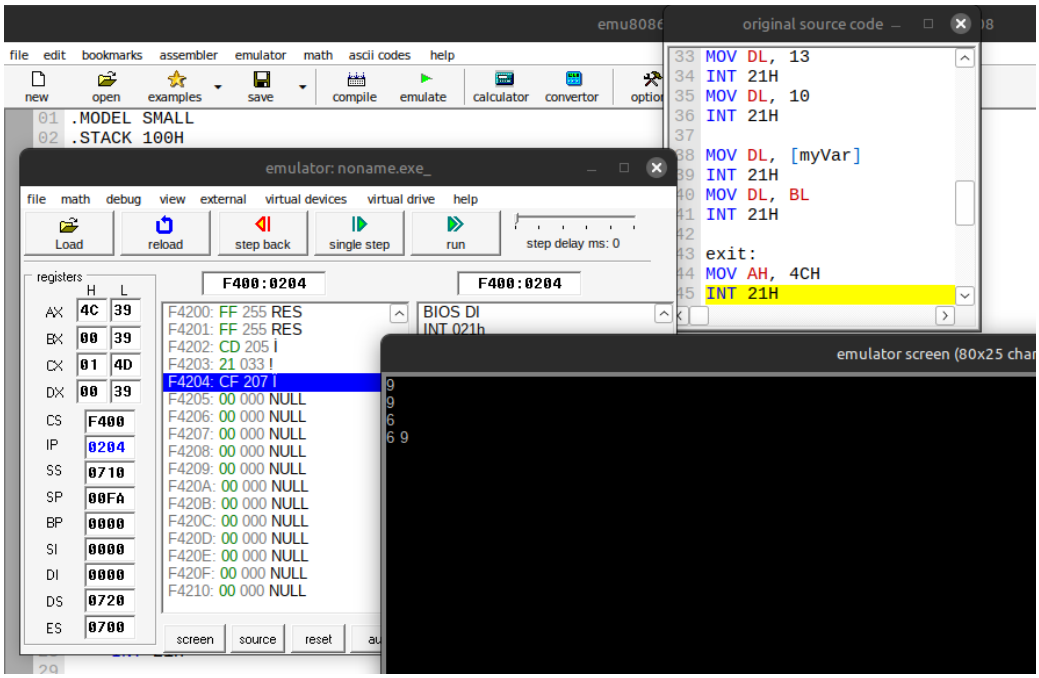
Write an assembly language program that performs the following operations:

1. Accept a single-digit input from the user.
2. Print a new line.
3. Display the input value as output.
4. Print another new line.
5. Declare a variable with an initial value and print its value.
6. Print a new line.
7. Display the variable's value followed immediately by the input value as the final output.

Code:

```
.MODEL SMALL
.STACK 100H

.DATA
    myVar db '6'

.CODE
MAIN PROC
    MOV AX, @DATA
    MOV DS, AX

    MOV AH, 1
    INT 21H
    MOV BL, AL

    MOV AH, 2
    MOV DL, 13
    INT 21H
    MOV DL, 10
    INT 21H

    MOV DL, BL
    INT 21H

    MOV DL, 13
    INT 21H
    MOV DL, 10
    INT 21H

    MOV DL, [myVar]
    INT 21H

    MOV DL, 13
    INT 21H
    MOV DL, 10
    INT 21H

    MOV DL, [myVar]
    INT 21H
    MOV DL, BL
    INT 21H

    exit:
    MOV AH, 4CH
    INT 21H
MAIN ENDP
END MAIN
```

Output:



Discussion:

Our following code creates a program that first creates a variable named myVar which has an initial value of 6 stored into it. Then we took an input from the user which is in this case the number 9.

To take the input first we move the value 1 to the AH register which allows the microprocessor to take user input when an interrupt happens next. Then we Take the given input from AL register and store it into the BL register which ensure that the value will not be erased if we take another input.

Then we print a newline by moving the value 2 in AH and 13 in display register DL. After that we print a line feed which has the value 10. Then we print the given input by moving the value of BL into DL.

After that we print another newline with line feed and print the value of our predefined variable myVAr and again print newline and line feed.

And at last we print our variable and the input number in the same line and exit the code by moving the value 4CH in the register AH and calling an interrupt