**Q 1. Write a program in assembly language to take two single-digit numbers as input and display whether they are equal or not.**

CODE:

ORG 100h

MOV DX, OFFSET msg\_input1

MOV AH, 09h

INT 21h

MOV AH, 01h

INT 21h

SUB AL, '0'

MOV BL, AL

MOV DX, OFFSET msg\_input2

MOV AH, 09h

INT 21h

MOV AH, 01h

INT 21h

SUB AL, '0'

MOV CL, AL

CMP BL, CL

JE digits\_equal

MOV DX, OFFSET msg\_not\_equal

MOV AH, 09h

INT 21h

JMP end\_program

digits\_equal:

MOV DX, OFFSET msg\_equal

MOV AH, 09h

INT 21h

end\_program:

MOV DL, 0Dh

MOV AH, 02h

INT 21h

MOV DL, 0Ah

INT 21h

MOV AH, 4Ch

INT 21h

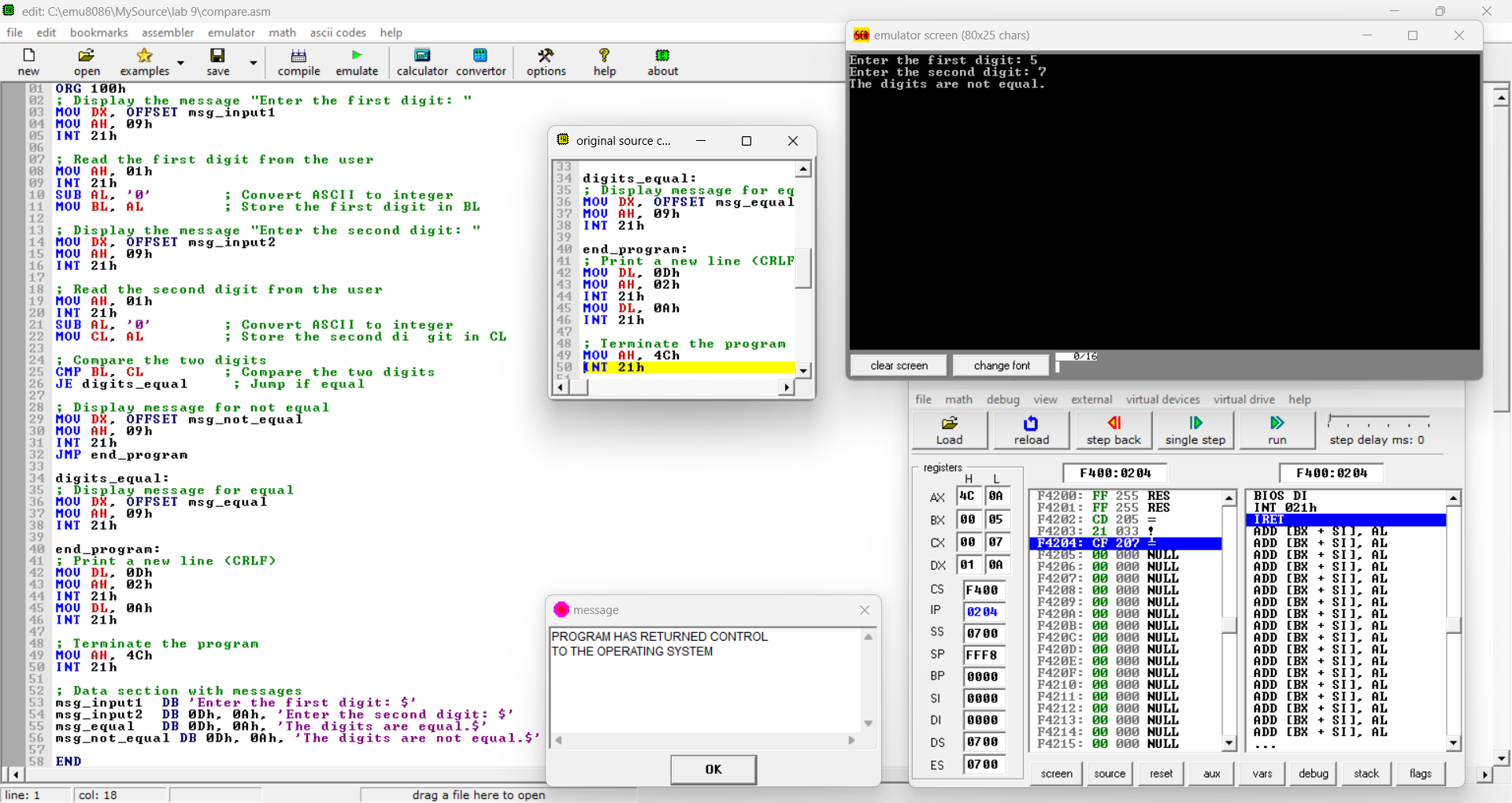
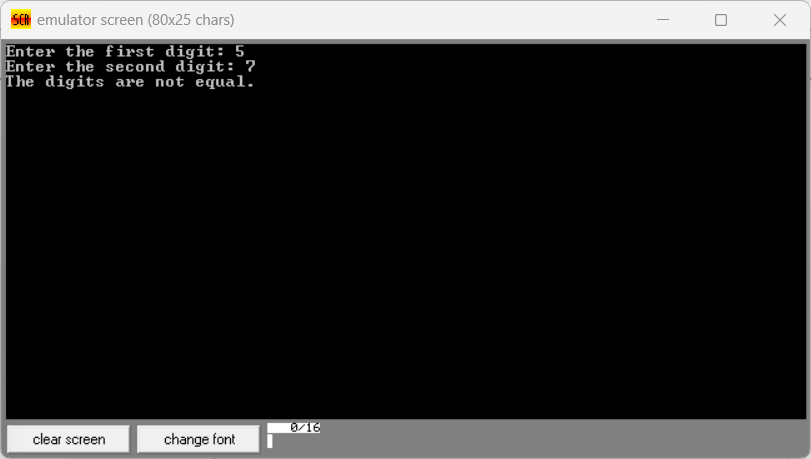
msg\_input1 DB 'Enter the first digit: $'

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

msg\_equal DB 0Dh, 0Ah, 'The digits are equal.$'

msg\_not\_equal DB 0Dh, 0Ah, 'The digits are not equal.$'

END

**Output:**

**Q 2. Write a program in assembly language to check whether a single-digit number is odd or even.**

CODE:

ORG 100h

MOV DX, OFFSET msg\_input

MOV AH, 09h

INT 21h

MOV AH, 01h

INT 21h

SUB AL, '0'

CMP AL, 0

JB invalid\_input

CMP AL, 9

JA invalid\_input

AND AL, 1

JZ even\_number

MOV DX, OFFSET msg\_odd

MOV AH, 09h

INT 21h

JMP end\_program

even\_number:

MOV DX, OFFSET msg\_even

MOV AH, 09h

INT 21h

JMP end\_program

invalid\_input:

MOV DX, OFFSET msg\_invalid

MOV AH, 09h

INT 21h

end\_program:

MOV AH, 4Ch

INT 21h

msg\_input DB 'Enter a single-digit number: $'

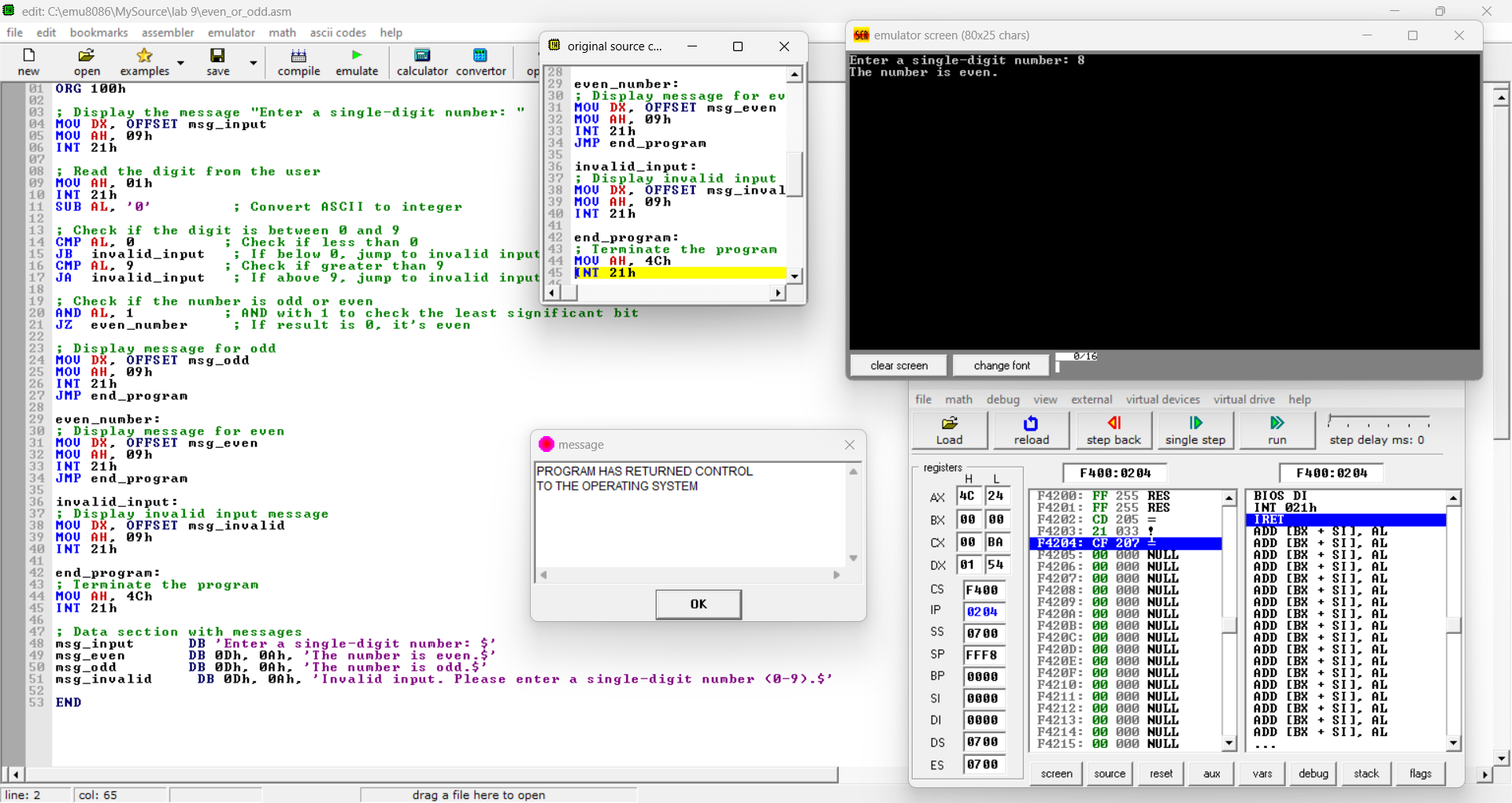
msg\_even DB 0Dh, 0Ah, 'The number is even.$'

msg\_odd DB 0Dh, 0Ah, 'The number is odd.$'

msg\_invalid DB 0Dh, 0Ah, 'Invalid input. Please enter a single-digit number (0-9).$'

END

Output:

Git hub Repository link:

CODE:

org 100h

mov al, 58d

mov bl, 10

div bl

mov bh, al

mov bl, ah

mov ah, 09h

mov dx, OFFSET msg

int 21h

add bh, ‘0’

mov dl, bh

mov ah, 02h

int 21h

add bh, ‘0’

mov dl, bl

mov ah, 02h

int 21h

mov ah, 4ch

int 21h

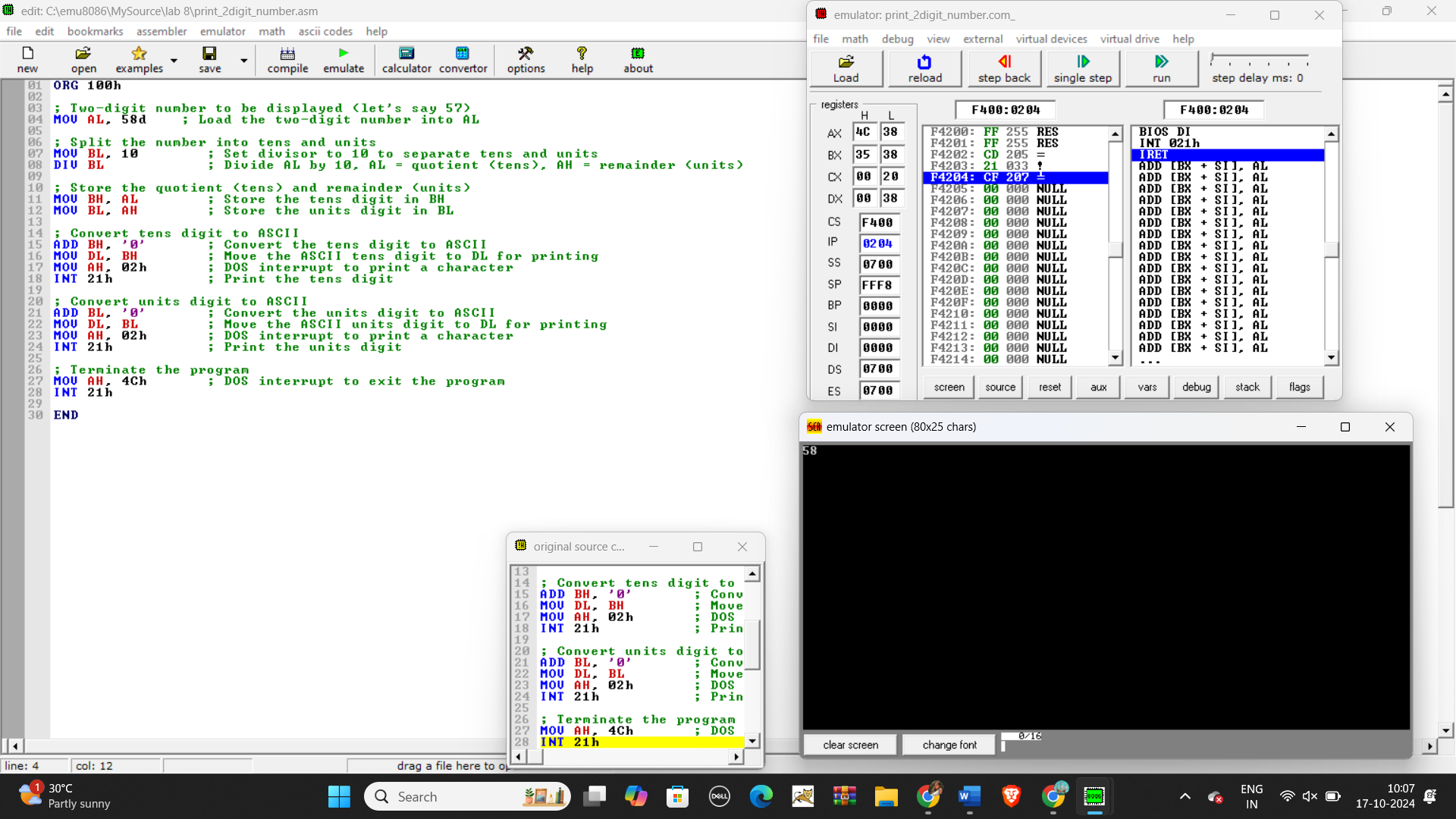
msg DB 'The two digit number is: $'

END

**Output:**

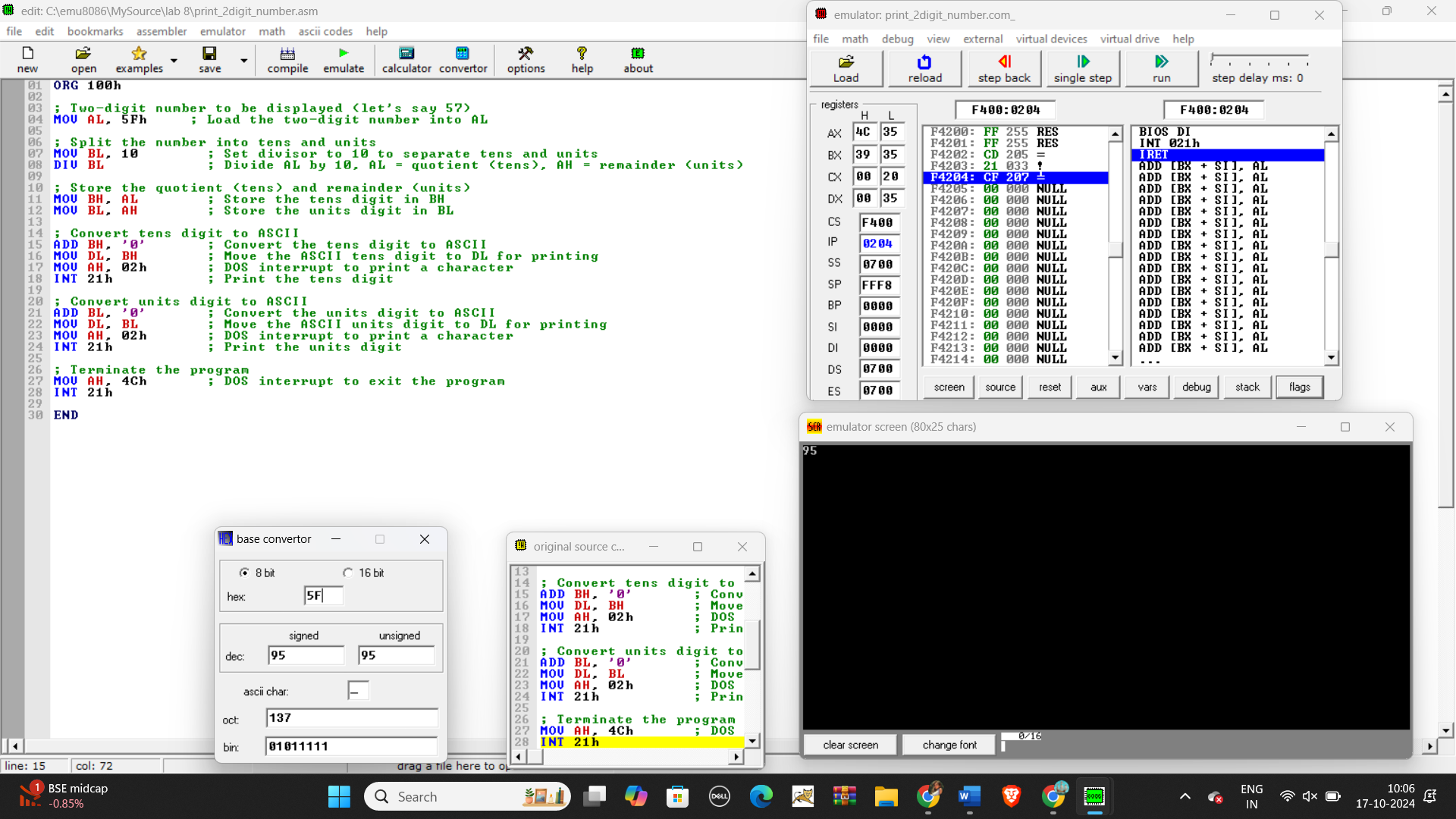
**For 58d**

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**For 5Fh**

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**Q 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

mov ah, 01h

int 21h

sub al, ‘0’

mov bl, al

mov dx, OFFSET msg\_input2

mov ah, 09h

int 21h

mov ah, 01h

int 21h

sub al, ‘0’

mov cl, al

add bl, cl

add bl, ‘0’

mov dx, OFFSET msg\_output

mov ah, 09h

int 21h

mov dl, 0dh

mov ah, 02h

int 21h

mov dl, 0Ah

int 21h

mov ah, 4ch

mov 21h

msg\_input DB 'Enter the first single digit: $'

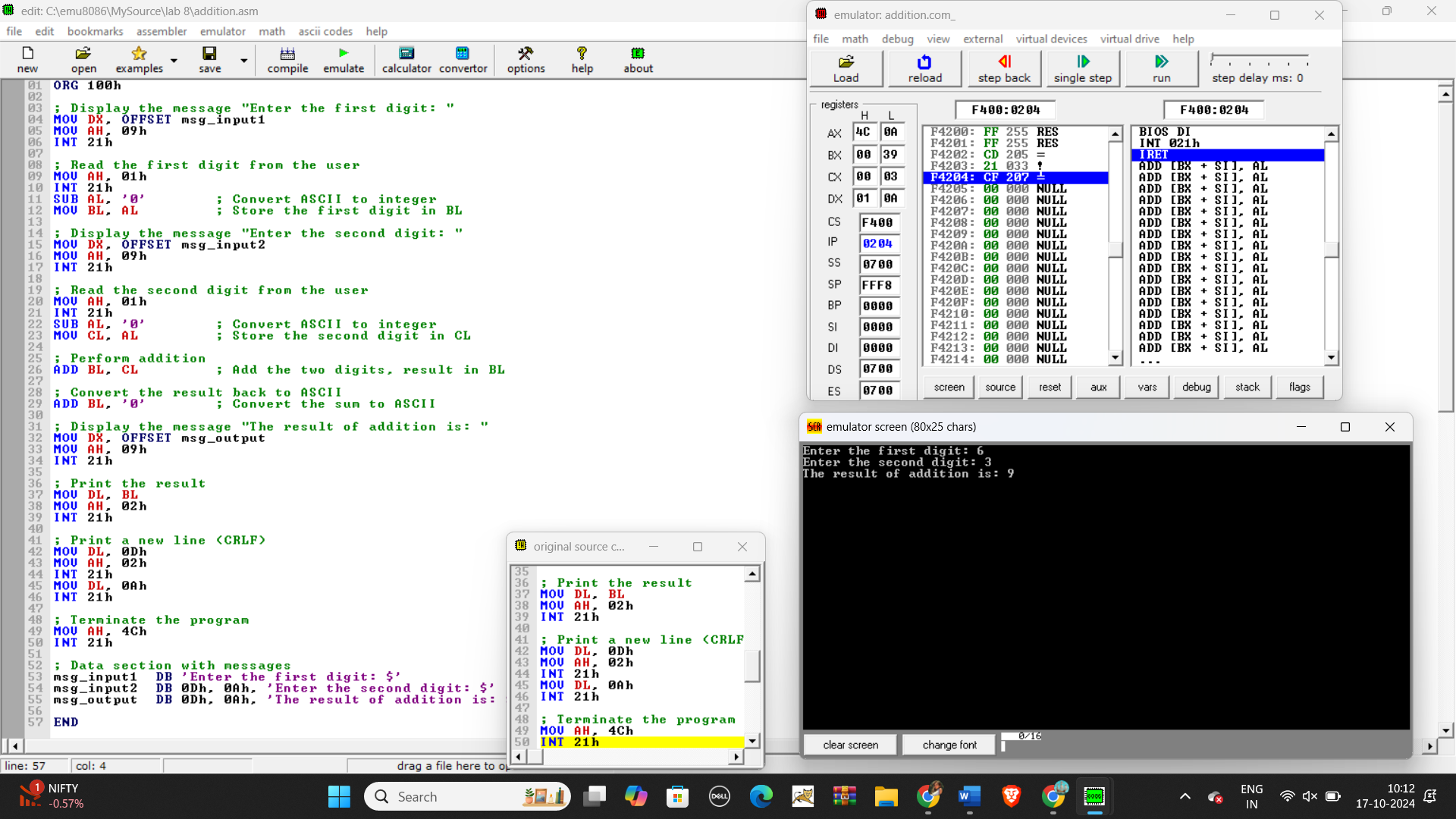
msg\_output DB 0Dh, 0Ah, 'Enter the second single digit: $'

msg\_error DB 0Dh, 0Ah, 'The result of addition is: $ ‘

END

Output:





Git hub Repository link:

<https://github.com/SruthiVihitha/COA-Lab_task-8.git>