Assignment #03 – COAL – AI -3-1

Saghir Ali – 67005

Simple Calculator in EMU 8086:

This is a simple and efficient calculator program developed by Saghir Ali using x86 assembly language.

It provides basic arithmetic operations in a clean, menu-driven interface that is easy to use and understand.

Working:

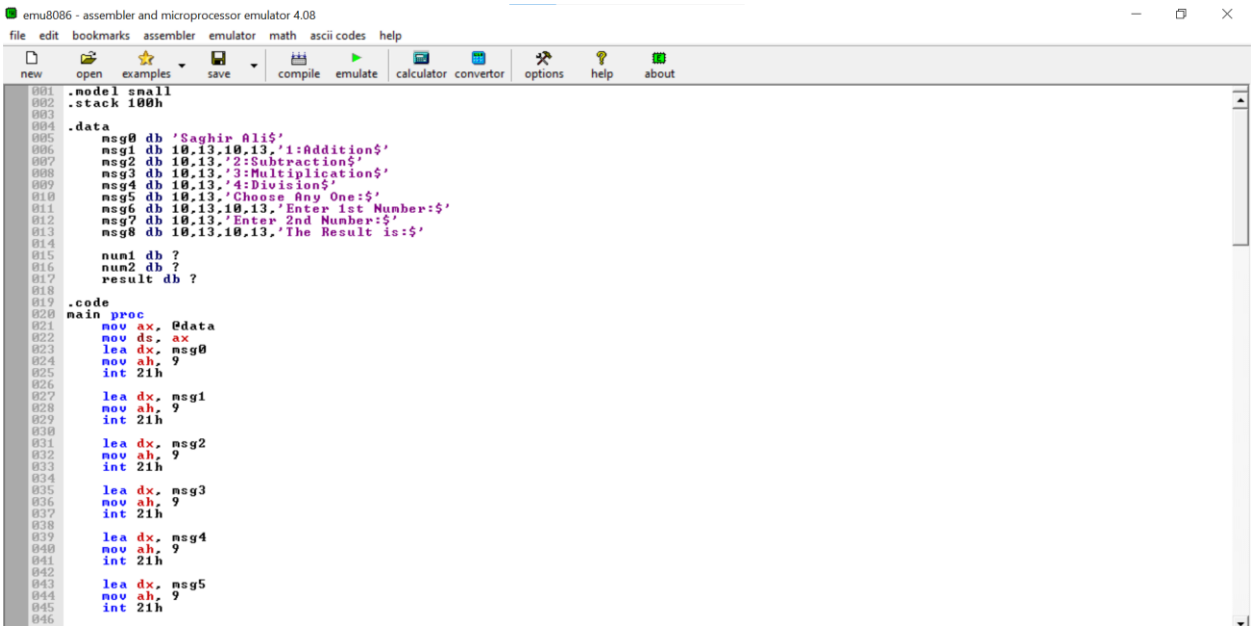
The calculator starts by displaying Saghir Ali as name followed by a menu of available operations.

Users select their desired operation by entering corresponding numbers (1-4). The program then prompts for two single-digit inputs, performs the selected arithmetic operation, and instantly displays the calculated result.

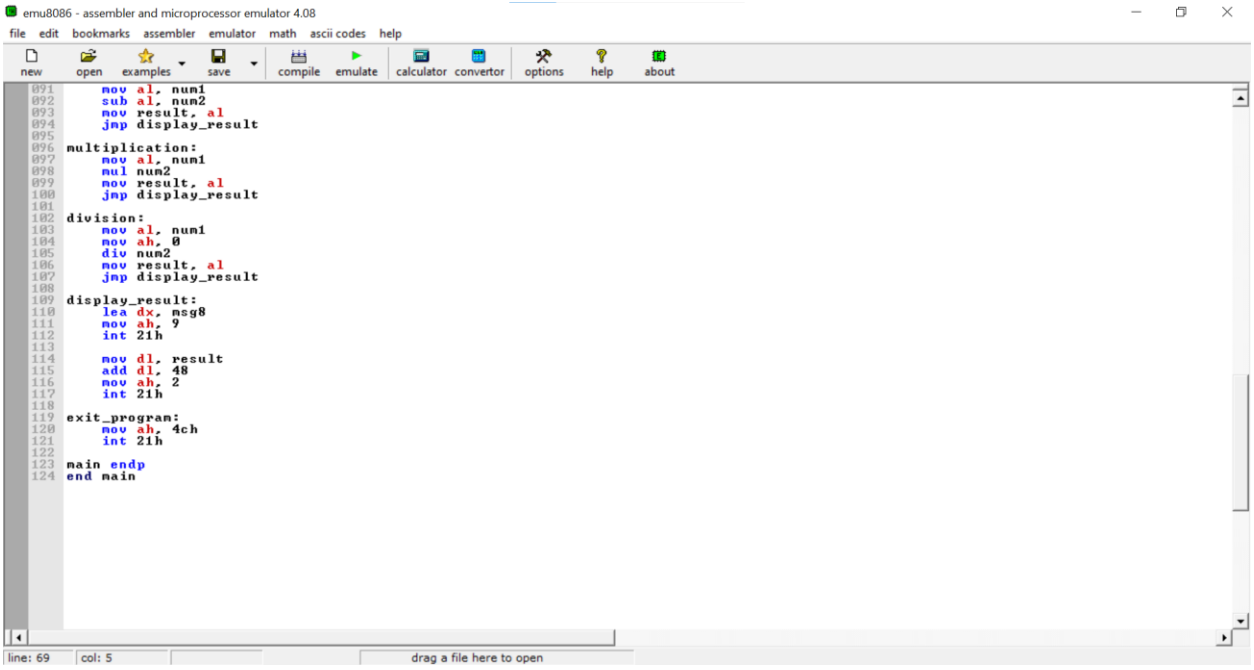
The operations are

1. **Addition**
2. **Subtraction**
3. **Multiplication**
4. **Division**

CODE :



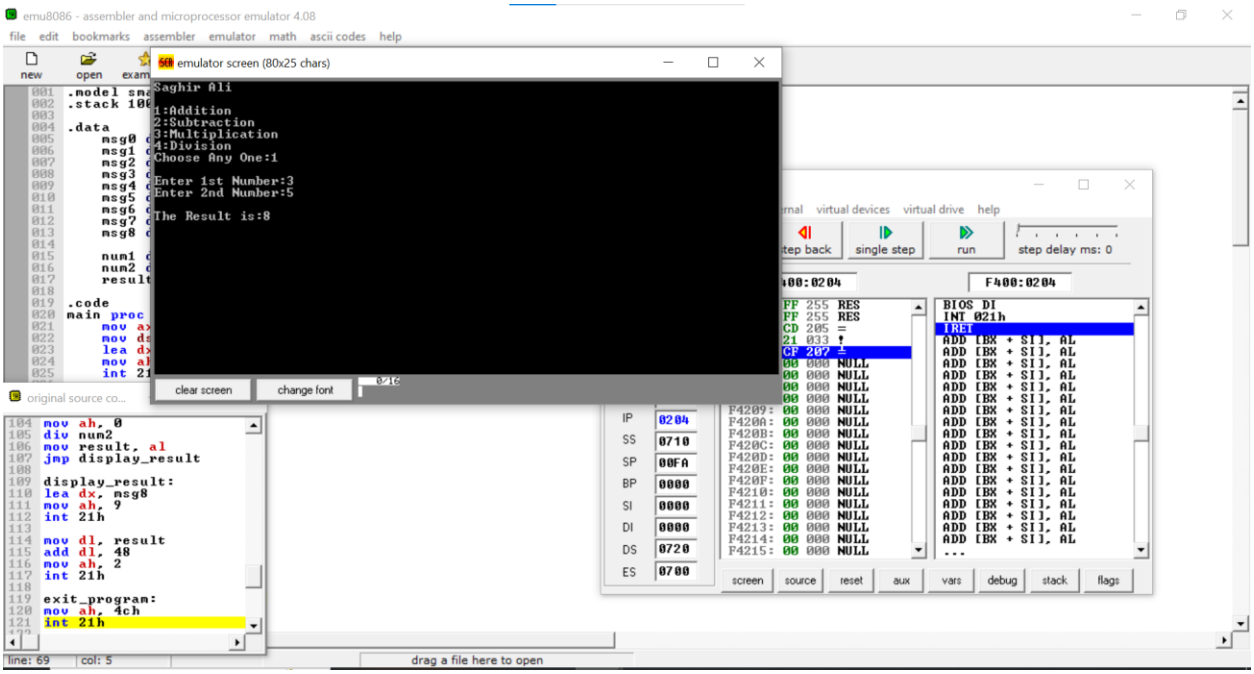

```
.model small
.stack 100h

.data
    msg0 db 'Saghir Ali$'
    msg1 db 10,13,10,13,'1:Addition$'
    msg2 db 10,13,'2:Subtraction$'
    msg3 db 10,13,'3:Multiplication$'
    msg4 db 10,13,'4:Division$'
    msg5 db 10,13,'Choose Any One:$'
    msg6 db 10,13,10,13,'Enter 1st Number:$'
    msg7 db 10,13,'Enter 2nd Number:$'
    msg8 db 10,13,10,13,'The Result is:$'

    num1 db ?
    num2 db ?
    result db ?

.code
main proc
    mov ax, @data
    mov ds, ax
    lea dx, msg0
    mov ah, 9
    int 21h

    lea dx, msg1
    mov ah, 9
    int 21h

    lea dx, msg2
    mov ah, 9
    int 21h

    lea dx, msg3
    mov ah, 9
    int 21h

    lea dx, msg4
    mov ah, 9
    int 21h

    lea dx, msg5
    mov ah, 9
    int 21h
```



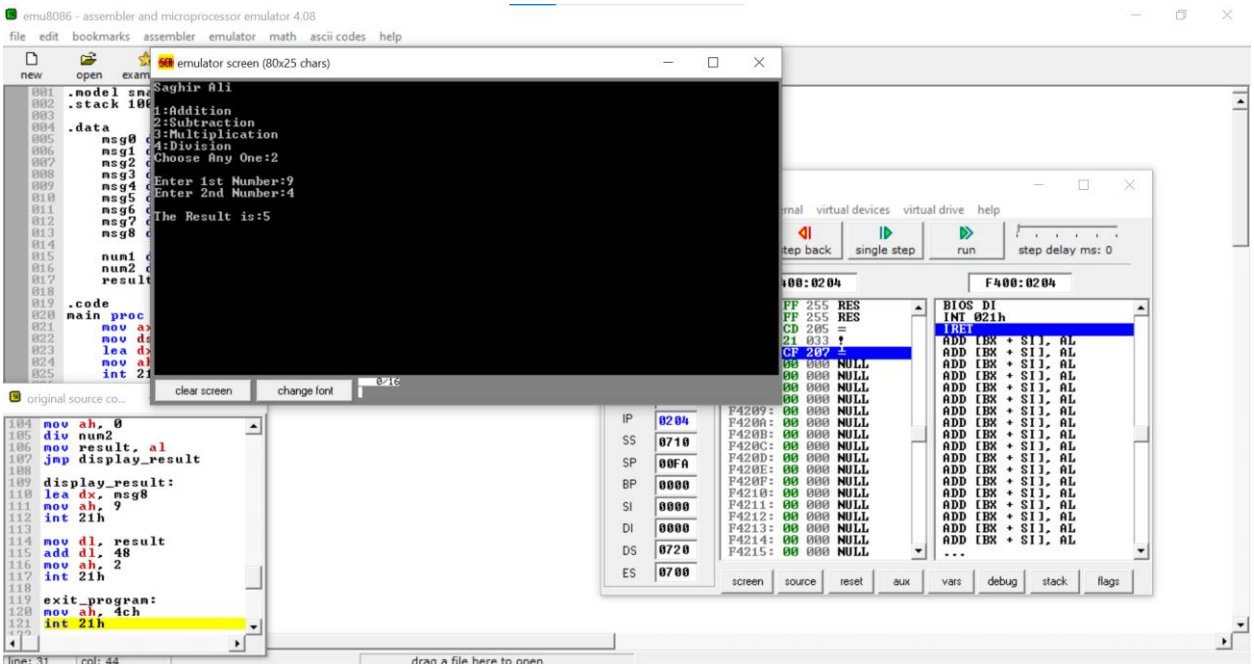

```
    mov al, num1
    sub al, num2
    mov result, al
    jmp display_result

multiplication:
    mov al, num1
    mul num2
    mov result, al
    jmp display_result

division:
    mov al, num1
    mov ah, 0
    div num2
    mov result, al
    jmp display_result

display_result:
    lea dx, msg8
    mov ah, 9
    int 21h

    mov dl, result
    add dl, 48
    mov ah, 2
    int 21h

exit_program:
    mov ah, 4ch
    int 21h

main endp
end main
```

Working Operations:

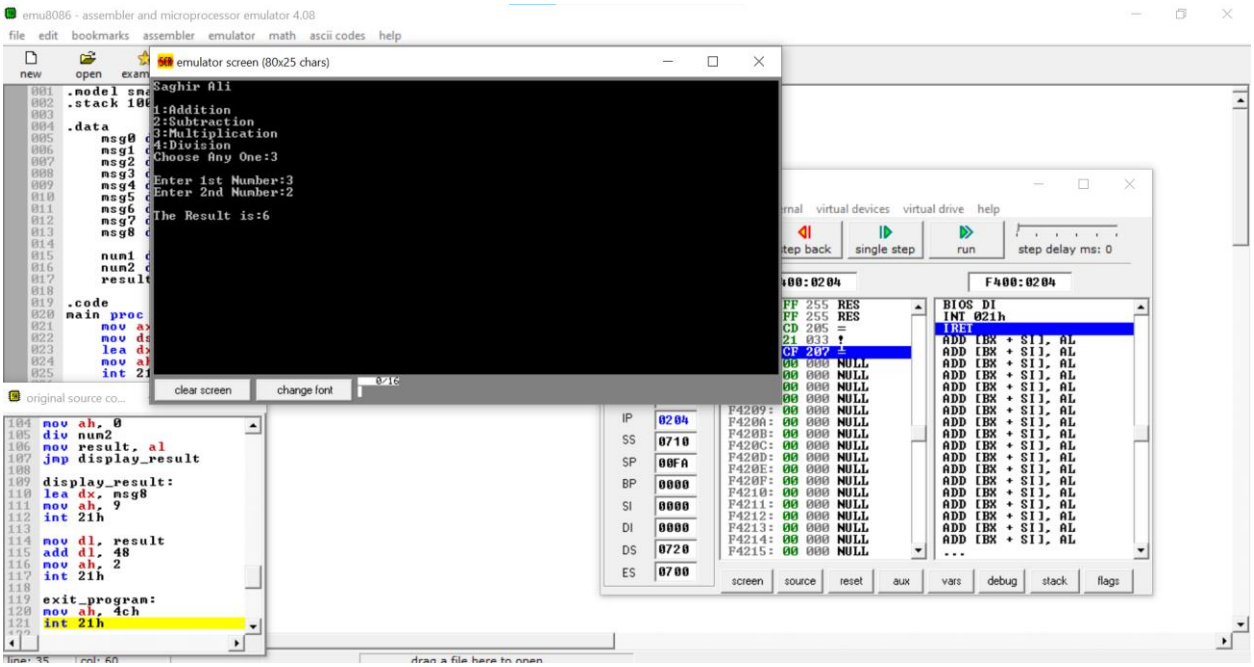
1. Addition



2. Subtraction:



3. Multiplication:



4. Division: