

[Coal - Lab]

[Lab Report #04]

(Assembly Language Programs)

➤ **Write a Program for Calculator by User Given :**

```
include 'emu8086.inc'
.model small
.stack 100h
.data
    a db ?
    b db ?
    c db ?
.code
main proc
    jmp titledisplay
start:
    mov ah,2
    mov dl,0ah
    int 21h
    print "Enter First Number : "
    mov ah,1
    int 21h
    mov a,al
    mov ah,2
    mov dl,0ah
    int 21h
    mov ah,2
    mov dl,0ah
    int 21h
    mov ah,2
    mov dl,0dh
    int 21h
    print "Enter Second Number : "
    mov ah,1
```

```
int 21h
mov b,al
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
int 21h
print 'Press 1 For Addition.'
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
int 21h
print 'Press 2 For Subtraction.'
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
int 21h
print 'Press 3 For Multiplication.'
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
int 21h
print 'Press 4 For Division.'
int 21h
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
```

int 21h

print "Enter a Number Between (1-4) : "

mov ah,1

int 21h

mov c,al

mov cl,c

cmp cl,'1'

je equal1

cmp cl,'2'

je equal2

cmp cl,'3'

je equal3

cmp cl,'4'

je equal4

jmp notequal1

equal1:

mov ah,2

mov dl,0ah

int 21h

mov ah,2

mov dl,0ah

int 21h

mov ah,2

mov dl,0dh

int 21h

mov ah,0

print "ADD = "

mov al, a

sub al, '0'

mov bl, b

sub bl, '0'

add al, bl

mov bl,10

div bl

mov dl,al

mov cl,ah

add dl,30h

mov ah,2

int 21h

mov dl,cl

```
mov ah,2  
add dl,30h  
int 21h
```

```
equal2:  
mov ah,2  
mov dl,0ah  
int 21h  
mov ah,2  
mov dl,0ah  
int 21h  
mov ah,2  
mov dl,0dh  
int 21h  
print "SUB = "  
mov bl,a  
sub bl,b  
cmp bl,0  
mov dl,bl  
mov ah,2  
add dl,30h  
int 21h  
;jmp exit
```

```
equal3:  
mov ah,2  
mov dl,0ah  
int 21h  
mov ah,2  
mov dl,0ah  
int 21h  
mov ah,2  
mov dl,0dh  
int 21h  
print "Mul = "  
mov al,a  
sub al,30h  
mov bl,b  
sub bl,30h  
mul bl  
mov bl,10  
div bl
```

```
mov dl,al
mov cl,ah
mov ah,2
add dl,30h
int 21h
mov dl,cl
mov ah,2
add dl,30h
int 21h
;jmp exit
```

```
equal4:
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
int 21h
print "DIV = "
mov ah,0
mov al,a
sub al,30h
mov bl,b
sub bl,30h
div bl
mov dl,al
mov cl,ah
mov ah,2
add dl,30h
int 21h
mov dl,cl
mov ah,2
add dl,30h
int 21h
jmp exit
```


```
notequal1:
print "Wrong Option!"
jmp exit
```

```

titledisplay:
mov ah,2
mov dl,0
int 21h
mov ah,2
mov dl,0
int 21h
mov ah,2
mov dl,0
int 21h
mov ah,2
mov dl,0
int 21h
mov ah,2
mov dl,0
int 21h
print "CACULATOR"
mov ah,2
mov dl,0ah
int 21h
mov ah,2
mov dl,0dh
int 21h
jmp start
exit:
main endp
end main

```

Output:

 emulator screen (80x25 chars)

```

CACULATOR
Enter First Number : 9
Enter Second Number : 8
Press 1 For Addition.
Press 2 For Subtraction.
Press 3 For Multiplication.
Press 4 For Division.
Enter a Number Between <1-4> : 1
ADD = 17
SUB = 1
Mul = 72
DIV = 11

```