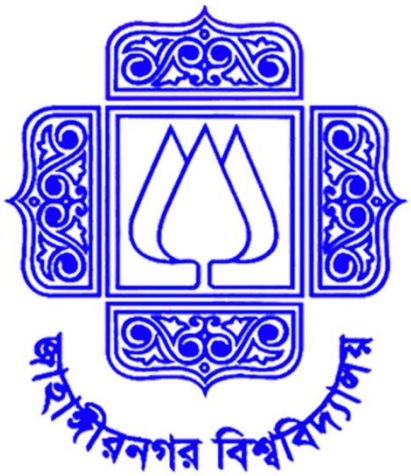
Jahangirnagar University (JU)



Institute of Information Technology

Lab Report-1

Assembly Language

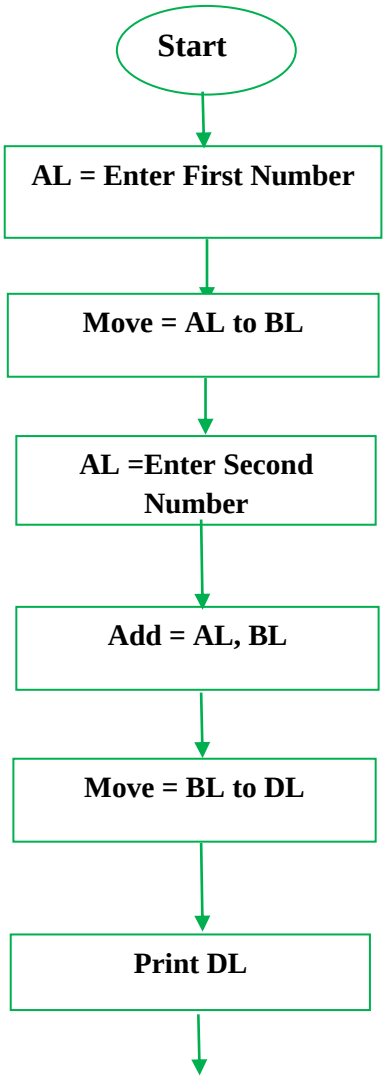
Name: md.Shakil Hossian **Class Roll:2023**

Experiment 1. Addition of two 8-bit numbers (Using an assembly language program).

Algorithm:

Step 1: Take First input from User and Load to AL (first number)
Step 2: Move AL data to BL register
Step 3: Take Second input from User and Load to AL (second number)
Step 4: Add these two numbers (contents of register BL and register AL)
Step 5: Subtract 48 from BL register for correct ASCII value
Step 6: Move BL data to DL
Step 7: Print DL
Step 8: Stop

Flow chart:



Program Source Code.

```
include 'emu8086.inc'
.stack 100h
.model small
.data
.code
    main proc

    print 'Enter First Number = '

    mov ah,01h
    int 21h
    sub al,48
    mov bl,al

    mov dl,10
    mov ah,02h
    int 21h

    mov dl,13
    mov ah,02h
    int 21h

     print 'Enter Second Number = '

    mov ah,01h
    int 21h
    sub al,48

    add bl,al
    add bl,48


    mov dl,10
    mov ah,02h
    int 21h
```

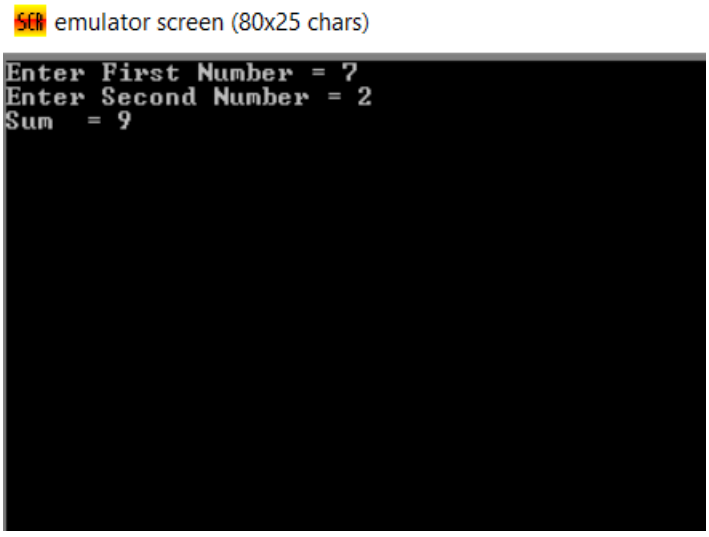
```
    mov dl,13
    mov ah,02h
    int 21h

    print 'Sum = '
    mov dl,bl

    mov ah,02h
    int 21h

    main endp
end main
```

Sample input and output:

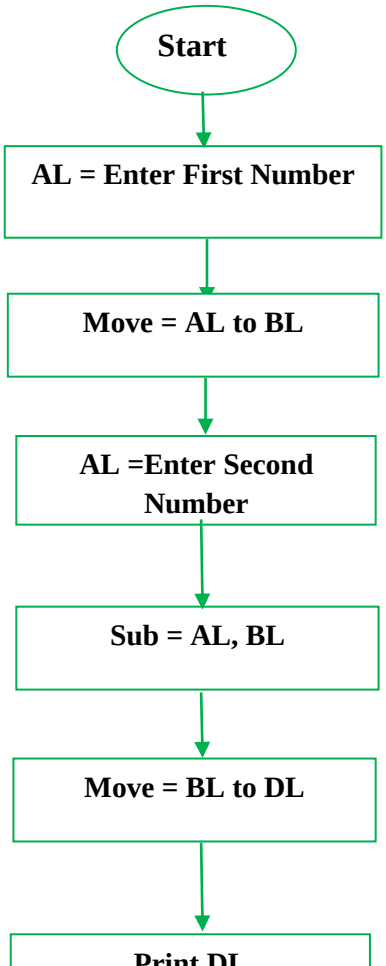


Experiment 2. Subtraction of two 8-bit numbers (Using an assembly language program)

Algorithm:

Step 1: Take First input from User and Load to AL (first number)
Step 2: Move AL data to BL register
Step 3: Take Second input from User and Load to AL (second number)
Step 4: Subtract these two numbers (contents of register BL and register AL)
Step 5: Subtract 48 from BL register for correct ASCII value
Step 6: Move BL data to DL
Step 7: Print DL
Step 8: Stop

Flow chart:



Program Source Code:

```
include 'emu8086.inc'
.stack 100h
.model small
.data
.code
    main proc

    print 'Enter First Number = '

    mov ah,01h
    int 21h
    sub al,48
    mov bl,al

    mov dl,10
    mov ah,02h
    int 21h

    mov dl,13
    mov ah,02h
    int 21h

     print 'Enter Second Number = '

    mov ah,01h
    int 21h
    sub al,48

    sub bl,al
```

```
    add bl,48


    mov dl,10
    mov ah,02h
    int 21h

    mov dl,13
    mov ah,02h
    int 21h

    print 'Subtraction   = '
    mov dl,bl

    mov ah,02h
    int 21h

    main endp
end main
```

Sample input and output: