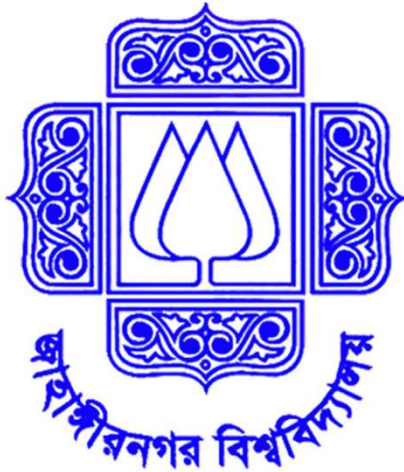


Jahangirnagar University (JU)



Institute of Information Technology

Lab Report-1

Assembly Language

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Class Roll. 2023

Experiment 1.

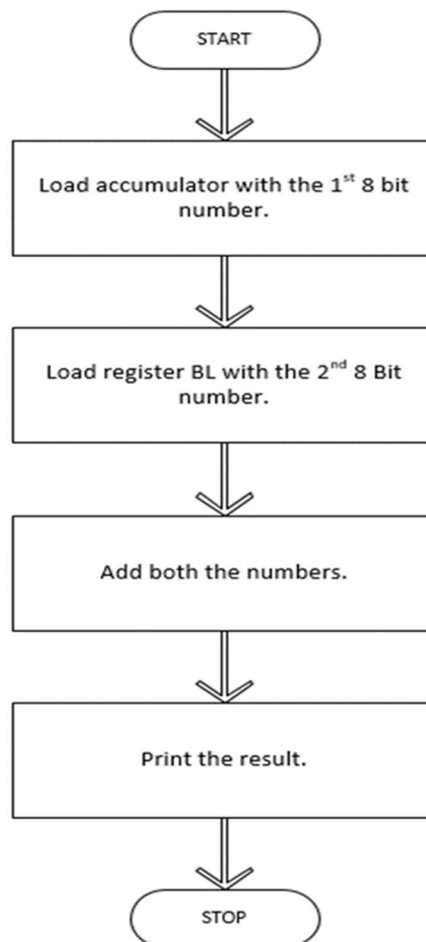
Title. Addition of two 8-bit numbers.

Algorithm.

Addition of two 8-bit numbers:

1. Input data from user to register AL (first number)
2. Move the first number from register AL to register BL.
3. Input data from user to register AL (second number)
4. Move the second number from register AL to register BH.
5. Add these two numbers (contents of register BL and register BH; store in register BL)
6. Subtract 48 from register BL
7. Store the result from register BL to register DL
8. Print
9. Stop

Flow chart.



Program Source Code.

```
org 100h
.data
a db 0ah,0dh,"enter 1st no :$"
b db 0ah,0dh,"enter 2nd no :$"
c db 0ah,0dh,"Adding two numbers :$"

.code
mov ax,@data
mov ds,ax
    ;input first number
    lea dx,a
    mov ah,09h
    int 21h

    mov ah,01
    int 21h
    lea dl,ah
    int 21h
    mov bl,al

    ;input second number
    lea dx,b
    mov ah,09h
    int 21h

    mov ah,01
    int 21h
    lea dl,ah
    int 21h
    mov bh,al

    sub bh,30h
    sub bl,30h

    ;third number
    lea dx,c
    mov ah,09h
    int 21h

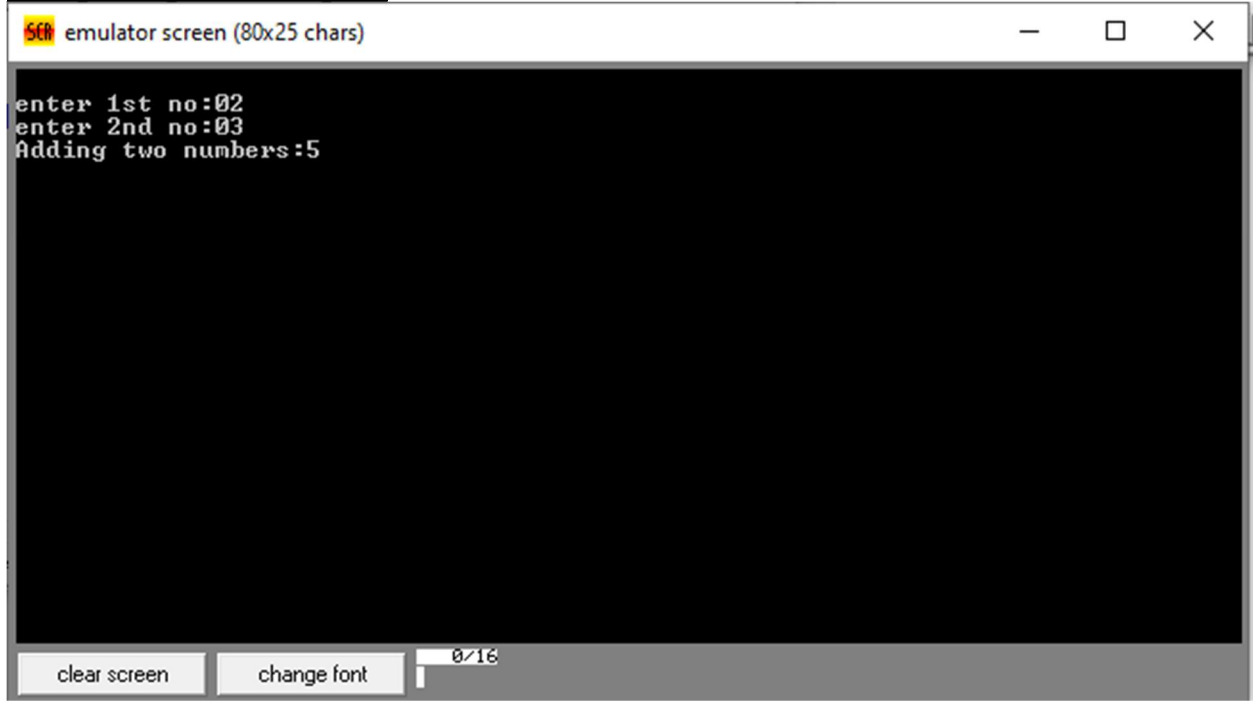
    add bh,bl
    add bh,30h
    mov dl,bh

    mov ah,02
```

int 21h

ret

Sample input & output:



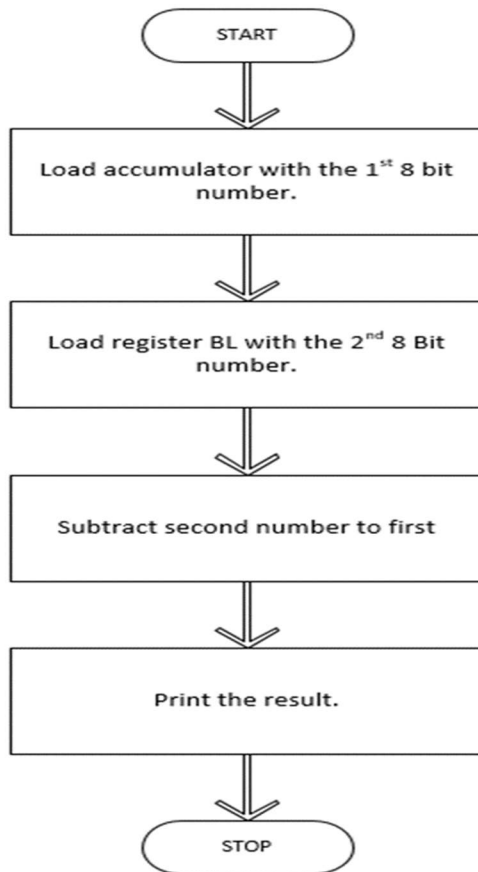
Experiment 2.

Title. Subtraction of two 8-bit numbers.

Algorithm.

1. Input data from user to register AL (first number)
2. Move the first number from register AL to register BL.
3. Input data from user to register AL (second number)
4. Move the second number from register AL to register BH.
5. Subtract these two numbers (contents of register BL and register BH; store in register BL)
6. Add 48 from register BL
7. Store the result from register BL to register DL
8. Print
9. Stop

Flow chart.



Program Source Code.

```
org 100h
.data

a db 0ah,0dh,"enter 1st no :$"
b db 0ah,0dh,"enter 2nd no :$"
c db 0ah,0dh,"Subtracing two numbers :$"

.code
mov ax,@data
mov ds,ax
    ;input first number
lea dx,a
mov ah,09h
int 21h

mov ah,01
```

```
int 21h
lea dl,ah
int 21h
mov bl,al
```

```
    ;input second number
    lea dx,b
    mov ah,09h
    int 21h
```

```
    mov ah,01
    int 21h
    lea dl,ah
    int 21h
    mov bh,al
```

```
    sub bh,30h
    sub bl,30h
```

```
    ;third number
    lea dx,c
    mov ah,09h
    int 21h
```

```
    sub bh,bl
    add bh,30h
    mov dl,bh
```

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

```
ret
```

Sample input & output:



The image shows a window titled "scf emulator screen (80x25 chars)". The window contains a black area with white text that reads: "enter 1st no:03", "enter 2nd no:06", and "subtract two numbers:3". At the bottom of the window, there is a grey bar with two buttons labeled "clear screen" and "change font", and a small text indicator "0/16".

```
scf emulator screen (80x25 chars)
enter 1st no:03
enter 2nd no:06
subtract two numbers:3
clear screen  change font  0/16
```