COAL_A_p200165_R3

Running Program In Dos Box:

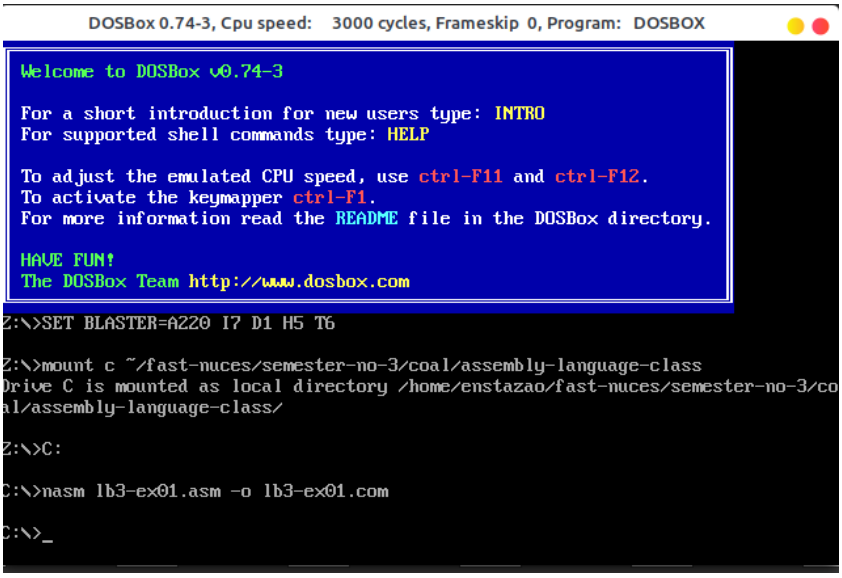
In Lab 03 we have seen different registers and we have learned that how can we move data into RAM and also we have stored data In the RAM and we picked data from RAM using registers.

AX register that is also called an **accumulator register**. We used **ax** and **bx** that is **Base Register** we used them for these operations.

```
;A Simple Program
[org 0x0100]
    mov ax, 5     ;Move the constant 5 to ax register
    mov bx, 10

    add bx, ax     ;Add ax to bx

    mov ax, 0x4c00
    int 0x21            ;..exit
```

This is the first program we have executed. We have executed this program in **DOSBOX** using **nasm** assembler.

If there is no error in the code then code will be assembled successfully.



Second Program:

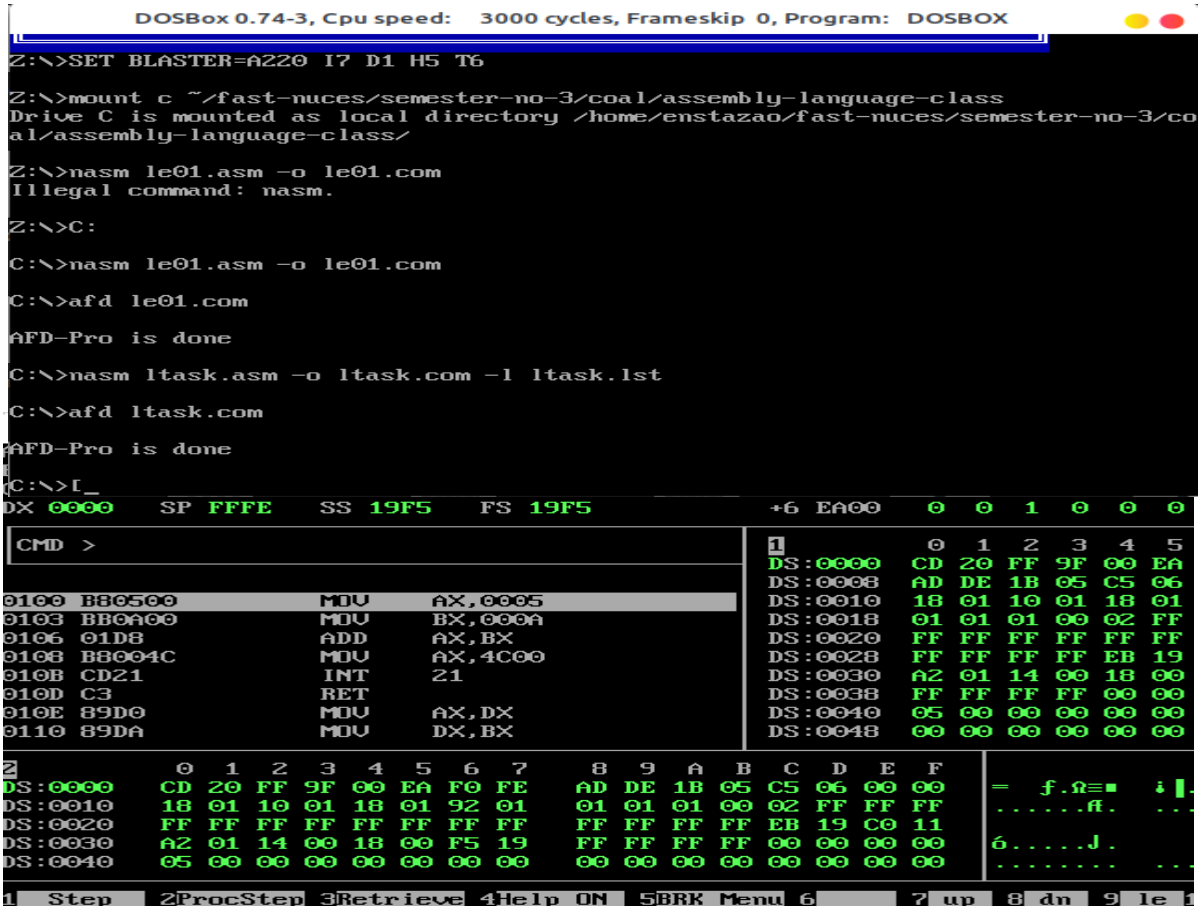
```
; A Program to swap two variables
[org 0x01000]
    mov ax, 5    ;Move the value 5 to ax register
    mov bx, 10   ;Move the value 10 to ax register

    mov cx, ax   ;Move the value of ax to cx register
    mov ax, bx   ;Move the value of bx to ax register
    mov bx, cx   ;Move the value of cx to ax register

    mov ax, 0x4c00  ;Move the 4c00 to ax register
    int 0x21        ;..exit
```

We have also used **AFD** which is an **Advance free debugger** that is used to debug your code.

This is the **AFD Debugger** that is used to debug the code. Also we have seen listing file in the lab that contain **assembled machine code**.

The last thing we have done in LAB03 is the Lab Task. In the Lab task we have to calculate the square of 6.

LAB TASK:



```
;A program to calculate the sqaure of Six
[org 0x0100]

        mov ax, 0
        mov cx, 6

        outerloop:
                add ax, [num1]

                sub cx, 1
                jnz outerloop

        mov ax, 0x4c00
        int 0x21
num1: dw 6
```

I have used loop in this task. Basically I used labels to create repetition. **Jnz** flag will set if the previous arithmetic or logical operation produce result of zero. If the zero flag is set the **after jnz** instruction repetition is created else program will be executed and no jump is made.
That's all we have done in our lab three.

Name : Jawad Ahmed
Roll No: 20P-0165
Section : 3A