Lab Report

Course Code: CSE 314

Course Title: Microprocessors and Microcontrollers Lab

Experiment No: 04

Experiment Name: Write a program in assembly language that calculates the factorial of a number.

Submitted To: Ms. Sultana Rokeya Nahar

Assistant Professor

Dept of CSE

Submitted By:

Name	: Md Shoayeb islam
Id No	: 1814351071
Batch	: 43
Semester	: 7th
Section	: A
Department	: CSE

Date of Submission: 03-06-2021

Theory : This is A factorial Number in assembly language. The Program describe main proc the program is start this line. And we know that the reset code for emulator 8086 to write an assembly language mov ax, data and mov ds, ax this the reset code we know that. Here mov al,4 that means the al register will assign value 4. Then mov cl,3 that means the cl register will assign value is 3. Then mov bl, al that basically means the value of 4 that was stored is al register that's copy form al to bl. And Here the sub bl,1 that means the 4 that was store in bl register sub by 1 that's mean 3. And we declared this label this label is username user define we can reply this. Here MUL BL this the multiplication operator as I know and this operator work mul bl = al = al*bl. Mul bl means multiplication with al and bl and after this multiplication this result will be stored in the al register. Here sub bl,1 that's mean the value of bl will be decrement by 1. Then loop label that's mean this loop will be looping up to this 3 times. And after this looping we will get the result. After that the value of al register will be assign Ans variable that I was declared in the data section. And this ans variable is db is data byte that can store 8-bit register but it can not store the 16-bit register. Then end the program.

Implementation Code:
```
ORG 100H
.DATA
ANS DB?
. CODE
MAIN PROC
MOV AX, @DATA
MOV DS, AX
MOV AL, 4
MOV CL, 3
MOV BL, AL
SUB BL,1
LABEL:
MUL BL
SUB BL,1
LOOP LABEL
MOV ANS, AL
END MAIN
RET
```

Result: 24

Comments: I understand the procedure of the code. Then I Implement it. And I write the code in emu8086. I run the code successfully. I got the result and then check

output but the output is right.