**Lab Manual # 07**

**Implementation of Conditional Instructions, Loops, Labels and Conditional Instructions using EMU8086**

**LOOPS & LABELS:**

The LOOP instruction is mainly used to simulate the different loops. The Loop instructions use the CX register to indicate the loop count.

The syntax of the Loop instruction is:

LOOP label

* The Loop instruction decrements CX without changing any flags
* If CX is not zero after the decrement, control is transferred to the destination label
* The jump is a SHORT jump only

**Example:** Let’s say we are creating array num1 with five elements, we are accessing each of the element using its address and moving it to register AL. We are getting the address of the array using LEA command.

LOOP instruction is used to iterate the program 5 times as CX is initially set to 5. Each time LOOP executes once, the register CX is decremented by 1.

org 100h

lea bx, [num1]

mov cx,5

back:

mov al, [bx]

inc bx

loop back

ret

num1 db 1,2,3,4,5

**Lab Tasks**

**Execute the following tasks CLO [1]**

**TASK 1:**

Write a code to perform multiplication on 8-bit data (5 data values) and store the result in the next

memory locations.

**TASK 2:**

Write a code to add the numbers of two arrays respectively and multiply their results?

**TASK 3**:

Write a program to find the minimum number of a byte sized array and store it in a variable min.

**TASK 4:**

Search a number in an array (Define any array and search any number from it).

**TASK 5:**

Write a program to calculate the factorial of a given number?