**CS120 Fundamental of Programming**

**Lab No. 5: Repetition Structure**

**Objective:**

The objective of this lab is to practice decision structures in C and logical operators.

**Example 1:**

A program to find the sum of first n natural numbers where n is entered by user. Note: 1,2,3... are called natural numbers.

#include<stdio.h>

 int main()

{

int n, count, sum=0;

printf("Enter the value of n.\n");

scanf("%d",&n);

for(count=1;count<=n;++count)

{

sum+=count;

}

printf("Sum=%d",sum);

return 0;

}

**Example 2:**

C program to Generate Numbers of Fibonacci sequence are known as Fibonacci numbers. First few numbers of series are 0, 1, 1, 2, 3, 5, 8 etc, Except first two terms in sequence every other term is the sum of two previous terms, For example 8 = 3 + 5 (addition of 3, 5).

#include<stdio.h>

int main()

{

int n, first = 0, second = 1, next, i;

printf("Enter the number of terms\n");

scanf("%d",&n);

printf("First %d terms of Fibonacci series are :\n",n);

for ( i = 0 ; i < n ; i++ )

{

if ( i <= 1 )

next = i;

else

{

next = first + second;

first = second;

second = next;

}

printf("%d\n",next);

}

return 0;

}

**Example 3:**

C program to Generate Multiplication Table, This program asks user to enter an integer and this program will generate the multiplication table upto 10.

#include<stdio.h>

 int main()

{

int n, i;

printf("Enter an integer to find multiplication table: ");

scanf("%d",&n);

for(i=1;i<=10;++i)

{

printf("%d \* %d = %d\n", n, i, n\*i);

}

return 0;

}

**Exercises**

1. Write a C program to find the sum of all integers between any two numbers x and y which are taken as input from the keyboard.
2. Write a C program to find the number of positive, negative and zeros in 10 numbers which are input from the keyboard.