

Quiz # 3 - ICS 103 Lab Sec-54: Computer Programming in C - Term 191**Name:** **KEY SOLUTION** **ID:**

The Fibonnaci sequence is defined as follows:

$$F_0 = 1, \quad F_1 = 1, \quad \dots \quad F_n = F_{n-1} + F_{n-2}$$

Write a complete C code that prompts the user to enter 2 numbers n and m ($n < m$) then finds the number of terms of the Fibonacci sequence between the integer values n and m.

You need a function that accepts as inputs n and m and returns the number of terms of the Fibonacci sequence.

Sample Program Run:

```
Enter 2 positive numbers (n<m): 1000 90
Enter 2 positive numbers (n<m): 90 1000
Fibonacci terms in [90, 1000] = 5
```

```
#include <stdio.h>
// -----
int fibFunction(int , int );
// -----
int main()
{
    int n,m;
    do{
        printf("Enter 2 positive numbers (n<m): ");
        scanf("%d%d", &n, &m);
    }while(n >= m);
    printf("Fibonacci terms in [%d, %d] = %d\n", n,m, fibFunction(n,m));
    return 0;
}

// -----
int fibFunction(int min, int max){
    int count, t1 = 0, t2 = 1, nextTerm = 0;

    nextTerm = t1 + t2;
    while(nextTerm < min){
        t1 = t2;
        t2 = nextTerm;
        nextTerm = t1 + t2;
    }
    count = 0;
    while(nextTerm < max){
        t1 = t2;
        t2 = nextTerm;
        nextTerm = t1 + t2;
        count++;
    }
    return count;
}
// -----
```