2022

# ASSIGNMENT 1
# DATA STRUCTURES (CS-403)

## PROGRAM TO FIND NTH TERM OF FIBONACCI SERIES (NON-RECURSIVE)

SUBMITTED BY: UMANG KANCHAN (MCA SEM-1)
SUBMITTED TO: DR. TIRTHANKAR GAYEN

# ALGORITHM

Step 1. Start

Step 2. Read index

Step 3. Call fibNonRecursive(index) and store the returning value in fibNum.

Step 4. In fibNonRecursive(index):

a=0,b=1

for(int i=1;i<index;i++){

b=a+b;

a=b-a;}

Step 5. Return a from fibNonRecursive(index)

Step 6. Print fibNum.

Step 7. End.

```c
// Assignment 2
// Subject: DATA STRUCTURE
// Topic: PROGRAM TO FIND Nth TERM OF FIBONACCI SERIES (NON-RECURSIVE).
// Submitted By: UMANG KANCHAN (MCA sem-1).

#include <stdio.h>

int fibNonRecursive(int index)
{
    int a = 0;
    int b = 1;
    for (int i = 1; i < index; i++)
    {
        b = a + b;
        a = b - a;
    }
    return a;
}

int main()
{
    int index, fibNum;
    printf("Enter the index\n");
    scanf("%d", &index);
    fibNum = fibNonRecursive(index);
    printf("The number at index %d in the Fibonacci series is %d. \n", index, fibNum);
    return 0;
}
```

TEST CASE 1:

Enter the index:

5

The number at index 5 in the Fibonacci series is 3.

TEST CASE 2:

Enter the index:

8

The number at index 5 in the Fibonacci series is 13.