PROGRAM TO FIND Nth term of fibonacci series (non-recursive)

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ASSIGNMENT 1

DATA STRUCTURES (CS-403)

2022

**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.

// 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.