DATE:19.11.14

**ASSIGNMENT NO.5**

->PROBLEM STATEMENT:

Write a program in C print the Fibonacci series where the number of terms is inputted from the user.

**->ALGORITHM:**

**Step 1:**Input the number of terms we want to print,n

**Step 2:-** Initialise a←0,b←1,c←0,i←1

**Step 3:-** Print a

**Step 4:-**Print b

**Step 5:-** While(i <=n-2)

1. c←a+b
2. Print c
3. a←b
4. b←c
5. Increment i by 1

[End of while loop]

**Step 6:-** End

->CODE:

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*TO PRINT THE FIBONACCI SERIES\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#include<stdio.h>

#include<conio.h>

void main()

{

/\*Declaration of variables\*/

int n,c=0,a=0,b=1,i=1;

clrscr();

/\*Input the number of terms we want to print\*/

printf("\n enter the number of terms we want to print\n");

scanf("%d",&n);

printf("\n The fibonacci series is as follows\n");

/\*Print the first two terms\*/

printf("%d",a);

printf(", %d",b);

/\*Print the rest of the terms of the fibonacci series\*/

while(i<=n-2)

{

c=a+b;

printf(", %d",c);

a=b;

b=c;

i=i+1;

}

getch();

}

->OUTPUT

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*OUTPUT\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*1ST RUN\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enter the number of terms we want to print

8

The fibonacci series is as follows

0, 1, 1, 2, 3, 5, 8, 13

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*2ND RUN\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enter the number of terms we want to print

20

The fibonacci series is as follows

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

**->DISCUSSION:**

**What is fibonacci series?**A series of whole numbers in which each number is the sum of the two preceding numbers. Beginning with 0 and 1, the sequence of Fibonacci numbers would be 0,1,1, 2, 3, 5, 8, 13, 21, 34, etc. using the formula **n = n(-1) + n(-2), where the n(-1) means "the last number before n in the series" and n(-2) refers to "the second last one before n in the series."** The Fibonacci numbers were originally defined by the Italian mathematician Fibonacci, also known as Leonardo da Pisa, in the 13th century.

In this program we have inputted the number of terms that we want to print where 0 and 1 are the first two terms.