Fibonacci Series in C

Fibonacci Series in C: In case of fibonacci series, *next number is the sum of previous two numbers* for example 0, 1, 1, 2, 3, 5, 8, 13, 21 etc. The first two numbers of fibonacci series are 0 and 1.

There are two ways to write the fibonacci series program:

- Fibonacci Series without recursion
- Fibonacci Series using recursion

Fibonacci Series in C without recursion

Let's see the fibonacci series program in c without recursion.

```
#include<stdio.h>
int main()
{
 int n1=0,n2=1,n3,i,number;
 printf("Enter the number of elements:");
 scanf("%d",&number);
 printf("\n%d %d",n1,n2);//printing 0 and 1
 for(i=2;i<number;++i)//loop starts from 2 because 0 and 1 are already printed
 {
  n3=n1+n2;
  printf(" %d",n3);
  n1=n2;
  n2=n3;
 }
  return 0;
 }
```

Output:

```
Enter the number of elements:15
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377
```

Fibonacci Series using recursion in C

Let's see the fibonacci series program in c using recursion.

```
#include<stdio.h>
void printFibonacci(int n){
    static int n1=0,n2=1,n3;
    if(n>0){
        n3 = n1 + n2;
        n1 = n2;
        n2 = n3;
        printf("%d ",n3);
        printFibonacci(n-1);
    }
}
int main(){
    int n;
    printf("Enter the number of elements: ");
    scanf("%d",&n);
    printf("Fibonacci Series: ");
    printf("%d %d ",0,1);
    printFibonacci(n-2);//n-2 because 2 numbers are already printed
  return 0;
 }
```

Output:

```
Enter the number of elements:15
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377
```