**Program using Recursion**

1)Write a program in C to print the first 50 natural numbers using recursion.

Expected Output:

The natural numbers are : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

**2.** Write a program in C to calculate the sum of numbers from 1 to n using recursion.

Example:  
Input the last number of the range starting from 1 : 5  
Expected Output:

The sum of numbers from 1 to 5 :

15

**3.** Write a program in C to print the Fibonacci Series using recursion. >  
Test Data :  
Input number of terms for the Series : 10  
Expected Output:

1 1 2 3 5 8 13 21 34 55

**4.** Write a program in C to print the array elements using recursion.   
Input the number of elements to be stored in the array :6  
Input 6 elements in the array :  
element - 0 : 2  
element - 1 : 4  
element - 2 : 6  
element - 3 : 8  
element - 4 : 10  
element - 5 : 12

The elements in the array are :

2 4 6 8 10 12

**5.** Write a program in C to print the array elements in reverse order using recursion.   
Input the number of elements to be stored in the array :5  
Input 5 elements in the array :  
element - 0 : 3  
element - 1 : 1  
element - 2 : 4  
element - 3 : 2  
element - 4 : 6

The elements in the reverse order :

6 2 4 1 3

**6.** Write a program in C to count the digits of a given number using recursion.   
  
Input a number : 537  
Expected Output :

The number of digits in the number is : 3

**7** Write a program in C to find the sum of digits of a number using recursion.   
  
Input any number to find sum of digits: 25

Expected Output:

The Sum of digits of 25 = 7

**8.** Write a program in C to get the largest element of an array using recursion.   
  
Input the number of elements to be stored in the array :5  
Input 5 elements in the array :  
element - 0 : 5  
element - 1 : 10  
element - 2 : 15  
element - 3 : 20  
element - 4 : 25  
Expected Output :

Largest element of an array is: 25

**9.** Write a program in C to reverse a string using recursion.   
  
Input any string: program

Expected Output:

The reversed string is: margorp

**10.** Write a program in C to find the Factorial of a number using recursion.   
  
Input a number : 5  
Expected Output:

The Factorial of 5 is : 120

**11.** Write a program in C to convert a decimal number to binary using recursion.   
  
Input any decimal number : 66  
Expected Output :

The Binary value of decimal no. 66 is : 1000010

**12.** Write a program in C to print even or odd numbers in a given range using recursion.   
Test Data :  
Input the range to print starting from 1 : 10  
Expected Output :

All even numbers from 1 to 10 are : 2 4 6 8 10

All odd numbers from 1 to 10 are : 1 3 5 7 9

**13.** Write a C program to check whether a given string is a palindrome or not using recursion.   
  
Input a word to check for palindrome : mom  
Expected Output :

The entered word is a palindrome.

**14.** Write a program in C to calculate the power of any number using recursion.   
  
Input the base value : 2  
Input the value of power : 6  
Expected Output :

The value of 2 to the power of 6 is : 64

**15.** Write a program in C to copy one string to another using recursion. >  
  
Input the string to copy : w3resource  
Expected Output :

The string successfully copied.

The first string is : program

The copied string is : program

**16)** C Program to Search an Element in an Array using Recursion. (Linear search)

**17)** C Program to Search an Element in an Array using Recursion. (Binary search)