ASSIGNMENT-7

1. A positive integer is entered through the keyboard; write a recursive function to find the binary equivalent of the number.

2. Write a recursive function that computes the sum of all numbers from 1 to n, where n is given as parameter.

3. Write a program to print Fibonacci Series using recursion.
   Test Data: Input number of terms for the Series (< 20) : 10
   Expected Output:
   Input number of terms for the Series (< 20) : 10
   The Series are:
   1 1 2 3 5 8 13 21 34 55

4. Write a recursive function for towers of Hanoi problem

   Output:

   ```
   Enter value of discs 3
   Move the disc 1 from A to C
   Move the disc 2 fromA to B
   Move the disc 1 from C to B
   Move the disc 3 fromA to C
   Move the disc 1 from B to A
   Move the disc 2 fromB to C
   Move the disc 1 from A to C
   ```

5. Write a program to store n elements in an array and print the elements using pointer.

6. Let A and B be two arrays. Write a function to create a new array C that contains elements alternately from A and B beginning with the first element of A. Use pointer to access the elements from the array C. If you run out of elements in one of the lists (arrays), then append the remaining elements of the other list (array) to C.

7. Write a recursive program to multiply two given matrices, use the pointers to pass the matrices to the recursive function. Validate the size of the matrices in the main function.

8. Write a program to read n integers into an array of int, to sort the elements in ascending order and to print the original and sorted elements. The program should not rearrange the elements of the array and should not create any other integer arrays.

   HINT - You may use two pointer arrays and rearrange the entries in these arrays.

9. Write a program to search for a given sub string inside a given string. If it is found in the string, then print the positions of all the occurrences.

10. Write a program to convert string into lowercase and uppercase without using library function in C++

   Output:

   Enter a string: Hello This is F section

   String in lower case: hello this is f section

   String in uppercase: HELLO THIS IS F SECTION

11. Write a program which calls a recursive function to determine the given string is palindrome or not and also write a recursive function to find the length the given string.

12. Write a program to sort the given names in lexicographical order (Alphabetical-order).

   Ex:- abc , abcd, aba , abd

   Result: aba , abc , abcd , abd