Function (Solve all the following problems using function):

1. Write a C program to find power x of an integer N (N^x), where N, x are integer numbers ($N,\ x \in Z$).

2. Write a C program to find the maximum among three numbers and write another function to find the minimum of these three numbers.

3. Write a C program that has a function to find the maximum between two numbers and **use that function** to find the maximum among three numbers.

4. Write a C program to swap and print the values of two variables.

5. Write a C program to swap and print the values of two variables (without using any extra variables).

6. Write a C program to find the Nth.prime number.

7. Write a C program to find all prime numbers between two numbers **using a function that returns 1 if the given input integer is a prime number, 0 otherwise**.

8. Write a C program to calculate the sum of **n** numbers coming from the console.

9. Write a C program to convert a number **N** in source base **s** to its equivalent number in destination base **d** ($1 < s,\ d < 11$).

10. Consider the following series:

$$1 + \frac{3!}{2^2} + \frac{5!}{3^3} + \frac{7!}{4^4} + \ ...$$

Now take a number n as input. Output the nth term of this series.

Recursive Function (Solve all the following problems using recursion)

11. Write a C program to print the numbers from 1 to N.

12. Write a C program to print the even, odd numbers (separately) in a given range [M, N].

13. Write a C program to calculate the sum of numbers from 1 to N.

14. Write a C program to find power x of an integer N (N^x), where N, x are integer numbers ($N,\ x \in Z$).

15. Take an integer N as input and find its factorial ($N!$).

16. Write a C program to count the number of digits of a number N.

17. Write a C program to print the reverse of a number N.

18. Write a C program to generate the reverse of a number N.

19. Write a C program to find the GCD of two numbers.

20. Write a C program to find the LCM of two numbers.

21. Write a C program that takes as input a positive integer n and outputs the number of proper divisors of n.

22. Write a C program to find the Nth fibonacci number. Assume that the fibonacci series starts with 0, 1, 1, 2, 3….

23. Write a C program to count the number of zeros present in a number N.