## 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 $N^{th}$.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:

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

Now take a number $n$ as input. Output the $n^{th}$ 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 $N^{th}$ 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.