# C++ Assignment-1

1. Write a C++ Program to calculate area of a circle to demonstrate the access modifier (A) public (B) private (C) protected.

2. Write a C++ program to calculate the area and perimeter of a triangle by creating a class named 'Triangle' with separate member functions for (i) taking input from user, (ii) Calculate the area, (iii) Calculate the perimeter, (iv) printing of data. Two functions must be defined inside the class and two functions must be defined outside the class.

3. Write a C++ program to create a class 'Number_List', which has separate member functions to create an integer array at run time, to sort given Integer and to find the minimum and maximum of the array.

4. Print the pattern using class and objects

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5. Write a C++ program to create a class complex having two integers real and imaginary. Create a three constructors function taking no argument, one argument and two arguments for three constructors. Show () and sum() functions are member functions, displaying and finding the addition of two objects respectively.

6. Write a C++ Program using constructor and destructor for checking if the given year is leap year or not.

7. Write a C++ program to create a class string, which stores string with constructor, displays the string and joins two strings with join user defined function taking two arguments of string object.

8. Write a C++ program to demonstrate
   (A) Copy Constructor (B) Parameterized Constructor (C) Virtual destructor

9. Write a C++ program to find Square of a Number using inline function.

10. Write a menu-driven C++ program to calculate volume of cube, cuboid, cone, cylinder, and sphere using function overloading. For an incorrect choice, proper error message should be displayed.

11. Write a C++ program to overload the function calculate() as follows-

    void calculate(int m, char ch) with one integer argument and one character argument. If ch is ‘r’ then the function reverse the digits of integer m. If ch is ‘p’, then the function will check whether integer m is prime or not. It should be noted that the number of digits in m should be greater than 1. Note: no library function should be used.

12. Write a C++ program to overload operator ‘+’ to concatenate two strings and hence reverse the concatenated string.

13. Write a C++ program to overload the following operators
    a) ‘>>’ to accept time from user (in hours: mins:sec)
    b) ‘+’ to add two different user-given time.
    c) ‘<<’ to display the time in hours: mins: sec format.
    d) ‘==’ to check whether two user-given times are equal or not.

14. Write a C++ program to swap two numbers using friend function without using third variable.

15. Write a C++ program to add two complex numbers using friend function.