**A.Y:2023-24**

**Lab Code: 20IT3353 Lab Name: Object Oriented Programming Lab**

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**WEEK- 5( SET1 &set2)**

* **IN-LAB:**

1. Create a class **ComplexNumber** to represent complex numbers (numbers in the form **a + bi**). Implement methods to add two complex numbers and a friend function to multiply two complex numbers.
2. Create a class **Circle** that represents a circle with a radius. Implement a friend function to calculate the area and circumference of the circle. Demonstrate the use of the friend function to perform these calculations.
3. Create a class **User** with a private member **password**. Implement a friend function **checkPassword** that checks if a given password matches the user's password. Demonstrate this by creating a user object and checking the password using the friend function.
4. Create a class **Circle** that represents a circle with a radius. Create a friend class **Geometry** that can calculate the area and circumference of the circle. Demonstrate the use of the friend class to perform these calculations.
5. Write a C++ program that defines a class with two private integer members and a friend

function that calculates their sum.

1. Implement a friend function to calculate the area of a rectangle.
2. Write a C++ program to convert temperature from Celsius to Fahrenheit using friend functions..
3. Create a class User with private member password. Implement friend class PasswordChecker that checks if a given password matches the user’s password. Demonstrate this by creating user object and checking the password using the friend class.

* **POST-LAB:**

Create a C++ program with a class that has multiple friend functions. Each friend function should access and display different private members of the class.

Create a class to store complex numbers and implement a friend function to add them.