**Experiment: 10**

PART A

(PART A: TO BE REFFERED BY STUDENTS)

**Aim:** **To study Classes and Objects in C++.**

**Learning Outcomes: Learner would be able to**

Write classes for entities in the problem domain, and create and use objects to perform the desired tasks.

**Task 1:** Create a class named 'Student' with a string variable 'name' and an integer variable 'roll\_no'. Assign the value of roll\_no as '2' and that of name as "John" by creating an object of the class Student.

**Task 2:** Write a program to print the area and perimeter of a triangle having sides of 3, 4 and 5 units by creating a class named 'Triangle' with a function to print the area and perimeter.

**Task 3:** Print the sum and difference of two complex numbers by creating a class named 'Complex' with separate functions for each operation whose real and imaginary parts are entered by the user.

**Task 4:** Create a class student having data members name, rollno & branch of student. Also declare two methods i.e. getData( ) & display( ) for taking input & display the same. Write a complete C++ code for display the information of a single student.

**Theory:**

**Specifying Class:-**

* Generally, a class specification has two parts:
  1. Class declaration.
     + It describes type and scope of class members
  2. Class function definition.
     + It describes how the class functions are implemented.
* **Syntax:**

class class\_name{

private:

variable declarations:  
 function declarations;

public:

variable declarations:  
 function declarations;

};

Declaring Objects: When a class is defined, only the specification for the object is defined; no memory or storage is allocated. To use the data and access functions defined in the class, you need to create objects.

Syntax:

ClassName ObjectName;

Accessing data members and member functions: The data members and member functions of class can be accessed using the dot(‘.’) operator with the object. For example if the name of object is obj and you want to access the member function with the name printName() then you will have to write obj.printName() .

PART B

(PART B: TO BE COMPLETED BY STUDENTS)

Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the portal at the end of the practical. The filename should be **PPS\_batch\_rollno\_experimentno Example: PPS\_B2\_B001\_Exp1**

|  |  |
| --- | --- |
| **Roll No.:** | **Name:** |
| **Prog/Yr/Sem:** | **Batch:** |
| **Date of Experiment:** | **Date of Submission:** |

**Task 1:**

**Task 2:**

**Task 3:**

**Task 4:**

**Conclusion (Learning Outcomes):** Reflect on the questions answered by you jot down your learnings about the Topic: Structure and Union

**Home Work Questions:**

1. Define Classes and objects?

2. What are access specifiers?