**ASSIGNMENT NO:** 3

**PROBLEM STATEMENT:**

Implement C++ program to create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called function get\_data() to initialize base class data members and another member function display\_area() to cmpute and display the area of figures. Make classes to suit their requirements. Using these three classes, design a program that will accept dimension of a triangle or a rectangle interactively, and display the area. Remember the two values given as input will be treated as lengths of two sides in the case of rectangles, and as base and height in the case of triangles, and used as follows:

Area of Rectangle=x\*y

Area of triangle=1/2\*x\*y

**AIM OF ASSIGNMENT:**

Program to Calculate the area of rectangle and triangle to understand the concept of Class Inheritance.

**DESCRIPTION:**

In this program, we have created a base class called shape in which there is a protected access specifier to declare the two variables as double data type. There are two derived classes to inherit the protected data members of the base class shape(using the public access specifier). One is to store the values of the variables input by the user (lengths of two sides in case of rectangle and base and height in case of triangle) and the other is to calculate the area of rectangle and triangle, and display the result. There is menu driven structure included in the program to calculate area of the shapes and display results according to the users choice. Do while loop is also used to run the menu driven program till the user wants to.

**OOP CONCEPT USED:**

* Class Inheritance including:
* Base class
* Derived Classes
* Protected and Public Access Specifiers
* Member Functions Include:
* Initialise the variables
* Compute area and Dispay the data
* Menu Driven Statements
* Object Creation of Class

**CONCLUSION:**

Hence, we learnt the concept of Class Inheritance and use of protected and public access specifier deeply and calculated area of rectangle and triangle interactively.