***Computer Programming Paradigm Lab***

***Lab Experiment No. 1***

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**Aim:**

Basic C++ Program (with member, constructor, destructor and methods).

**Problem Statement:**

Write a C++ program to implement Triangle class which has the following members

- Three sides

- Four constructors (one with no parameter, one with single parameter (equilateral triangle),

one with two parameters (isosceles triangle), one with three parameters (scalene triangle),

- A destructor

- Methods to read data and display data along with area of respective triangles.

**CODE:**

#include <iostream>

#include <math.h>

using namespace std;

class Triangle{

    float a,b,c,h;

    float Area;

    public:

    Triangle(){

        b=5, h=10;

        Area = 0.5\*b\*h;

    }

    Triangle(float a){

        Area = (sqrt(3)\*a\*a)/4;

    }

    Triangle(float a, float b){

        float h;

        h = sqrt((a\*a)-((b\*b)/4));

        Area = 0.5\*b\*h;

    }

    Triangle(float a, float b, float c){

        float s;

        s = (a\*b\*c)/2;

        Area = sqrt(s\*(s-a)\*(s-b)\*(s-c));

    }

    void diplay(){

        cout<<"Area: "<< Area<<endl;

    }

};

int main(){

    cout<<"D10A\_60\_Shashwat Tripathi"<<endl;

    Triangle x;

    x.diplay();

    Triangle y(3);

    Triangle w(5, 6);

    Triangle z(5, 12, 13);

    y.diplay();

    w.diplay();

    z.diplay();

}

**OUTPUT:**

