Computer Programming Paradigm Lab

Lab Experiment No. 1

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Batch: C Div: D10A

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: