**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 compute and display area of figures . Make classes to suit their requirements . Using these three classes , design a program that will accept dimmesion of a triangle or a rectangle interactively and display the area . Remember the two treated as lengths of two sides in the case of rectangle 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:**

To understand concept of inheritance.

**Description:**

In that problem statement , there is used concept of inheritance .here shape is base class and rectangle , triangle are two classes are derived class . Using that classes , calculate area of rectangle as well as area of triangle.

**OOP concept used :**

Inheritance ,switch case.

**Program:**

#include<iostream>

using namespace std;

class Shape

{

public:

double length,width;

void get\_data() //accept length and width

{

cout<<"Enter the length::";

cin>>length;

cout<<"Enter the width::";

cin>>width;

}

void display() //display length and width

{

cout<<"length::"<<length;

cout<<"\t width::"<<width<<endl;

}

};

class rectangle:public Shape //inheritance base class shape

{

public:

double result;

void cal() //calculate area of rectangle

{

get\_data();

display();

result=(length\*width);

}

void display\_area() //display area of rectangle

{

cout<<"area of rectangle::"<<result<<endl;

}

};

class triangle:public Shape //inheritance of shape class

{

public:

double result;

void cal() //calculate area of triangle

{

get\_data();

display();

result=(length\*width)/2;

}

void display\_area() //display area of triangle

{

cout<<"area of triangle::"<<result<<endl;

}

};

int main()

{

int ch;

char rep='n';

rectangle r;

triangle t;

do

{

cout<<"1.Area of rectangle 2.Area of triangle"<<endl;

cout<<"Enter the choice::";

cin>>ch;

switch(ch) // switch case used for multiple operation

{

case 1:

r.cal();

r.display\_area();

break;

case 2:

t.cal();

t.display\_area();

break;

default:

cout<<"Enter the valid choice::"<<endl;

break;

}

cout<<"do you want repeat process (Y/N)::";

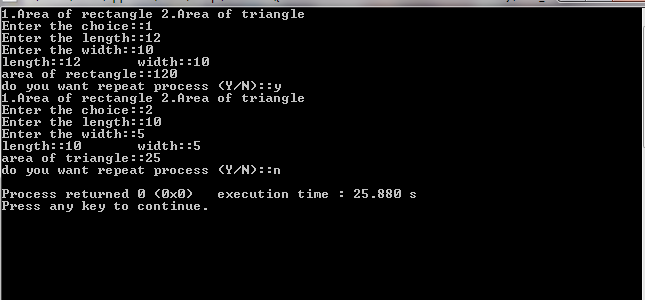
cin>>rep;

}while(rep=='Y'||rep=='y');

return 0;

}

**Output:-**

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