ASSIGNMENT 3

# Aim:

Implement C++ program to create 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 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 length of two sides in the case of rectangles, and as base and height in the case of triangle, and used as follows:

* Area of Rectangle = x\*y
* Area of triangle = 0.5\* x\*y

# Objectives:

To implement class and function to find area of rectangle and triangle

# Theory:

* A *Class* is a user defined data-type which has data members and member functions.
* Data members are the data variables and member functions are the functions used to manipulate these variables and together these data members and member functions defines the properties and behavior of the objects in a Class.
* A  *function* is a set of statements that take inputs, do some specific computation and produces output.
* The idea is to put some commonly or repeatedly done task together and make a function so that instead of writing the same code again and again for different inputs, we can call the function.

# Source code:

#include<iostream>

using namespace std;

class shape

{

public:

double x,y;

};

class input:public shape

{

public:

void get\_data()

{

cout<<"\n\nEnter the value of x (it can be length or base)\n";

cin>>x;

cout<<"Enter the value of y (it can be breadth or height)\n";

cin>>y;

}

};

class output:public shape

{

public:

void display\_area(input abc)

{

int choice;

q:cout<<"\nEnter your choice :\n~press 1. Area of Rectangle\n~press 2. Area of Triangle\n";

cin>>choice;

switch(choice)

{

case 1: cout<<"\nArea of rectangle = "<<(abc.x\*abc.y)<<endl;

break;

case 2: cout<<"\nArea of triangle = "<<(0.5\*abc.x\*abc.y)<<endl;

break;

default: cout<<"Enter correct choice\n";

goto q;

}

}

};

int main()

{

input i;

output o;

p:i.get\_data();

o.display\_area(i);

char ch;

cout<<"Do you want to continue? (~press Y/N)\n";

cin>>ch;

if(ch=='y'||ch=='Y')

goto p;

return 0;

}

# output:

/\*

Enter the value of x (it can be length or base)

4

Enter the value of y (it can be breadth or height)

8

Enter your choice :

~press 1. Area of Rectangle

~press 2. Area of Triangle

1

Area of rectangle = 32

Do you want to continue? (~press Y/N)

n

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Process exited after 16.01 seconds with return value 0

Press any key to continue . . .

\*/

# conclusion:

Through this program we learn to implement class and function.