**Source code**

Java project that shows how to develop functionality to calculate the area for different geometric dimensions based on the number of parameters passed.

package slproject;

import java.util.ArrayList;

class Parentclass {

public float area;

public void displayarea()

{

System.out.println(area+"cm2");

}

}

class Square extends Parentclass {

float l;

Square(float l)

{

this.l=l;

calculatearea();

}

void calculatearea()

{

area=l\*l;

}

}

class Rectangle extends Parentclass {

float l,b;

Rectangle(float l, float b)

{

this.l=l;

this.b=b;

calculatearea();

}

void calculatearea()

{

area=l\*b;

}

}

//Area of Trapezoid = (1/2) × (base1 + base2) × height

class Trapezoid extends Parentclass {

float b1,b2,h;

Trapezoid(float b1, float b2, float h)

{

this.b1=b1;

this.b2=b2;

this.h=h;

calculatearea();

}

void calculatearea()

{

area=0.5f\*(b1+b2)\*h;

}

}

public class Findarea {

public static void main(String[] args) {

Square obj1 = new Square(5.0f);

Rectangle obj2 = new Rectangle(3.0f, 4.0f);

Trapezoid obj3 = new Trapezoid(7.0f, 5.0f, 4.0f);

ArrayList<Parentclass> objlist = new ArrayList<>();

objlist.add(obj1);

objlist.add(obj2);

objlist.add(obj3);

try {

for(Parentclass pc : objlist) {

System.out.print("Area of "+pc.getClass().getSimpleName()+" is ");

pc.displayarea();

}

}

catch(Exception e)

{

e.printStackTrace();

}

finally

{

System.out.println("Project ends here");

}

}

}

**OUTPUT:**

