Write a java program to create a base class vehicle with method start engine and stop engine create two sub classes car and motorcycle over write the start and stop engine methods in each sub classes to start and stop the engine differently.

public class Main {

class Vehicle {

public void startEngine() {

System.out.println("Starting engine...");

}

public void stopEngine() {

System.out.println("Stopping engine...");

}

}

class Car extends Vehicle {

@Override

public void startEngine() {

System.out.println("Starting car engine... Vroom!");

}

@Override

public void stopEngine() {

System.out.println("Stopping car engine... Silence.");

}

}

class Motorcycle extends Vehicle {

@Override

public void startEngine() {

System.out.println("Starting motorcycle engine... Roar!");

}

@Override

public void stopEngine() {

System.out.println("Stopping motorcycle engine... Quiet.");

}

}

public static void main(String[] args) {

Main main = new Main();

Vehicle vehicle = main.new Vehicle();

vehicle.startEngine();

vehicle.stopEngine();

System.out.println();

Car car = main.new Car();

car.startEngine();

car.stopEngine();

System.out.println();

Motorcycle motorcycle = main.new Motorcycle();

motorcycle.startEngine();

motorcycle.stopEngine();

}

}

OUTPUT:

Starting engine

Stopping engine

Starting car engine:Vroom

Stopping car engine:Silence

Starting motorcycle engine:Roar

Stopping motorcycle engine:Quiet

=== Code Execution Successful ===

Create program in java to generate abstract class a also class b inherits class a generate object for class b and display the text call me from b.

abstract class A{

public abstract void displayText();

}

public class B extends A{

public void displayText(){

System.out.println("Call me");

}

public static void main(String[] args){

B b=new B();

b.displayText();

}

}

Output:

Call me

=== Code Execution Successful ===

Write a java program for a number is less than 10 greater than 50 out of exception else it displays the square of the number.

import java.util.Scanner;

public class NumberChecker{

public static void main(String[] args){

Scanner scanner=new Scanner(System.in);

System.out.print("Enter a number:");

try{

int num=scanner.nextInt();

if(num<10 || num>50){

throw new Exception("Number not between 10 and 50");

}

else{

int square=num\*num;

System.out.println("The square : "+square);

}

}

catch(Exception e){

System.out.println(e.getMessage());

}

}

}

Output:

Enter a number:110

Number not between 10 and 50

=== Code Execution Successful ===

Write a program in java to Create simple box class with data members width height depth with volume method create two sub classes box weight class and shipment class with cost data member display the volume of box and box weight and cost.

class Box{

double width;

double height;

double depth;

public Box(double width,double height,double depth){

this.width=width;

this.height=height;

this.depth=depth;

}

public double volume(){

return width\*height\*depth;

}

}

class BoxWeight extends Box{

double weight;

public BoxWeight(double width,double height,double depth,double weight){

super(width,height,depth);

this.weight=weight;

}

}

class Shipment extends BoxWeight{

double cost;

public Shipment(double width,double height,double depth,double weight, double cost){

super(width,height,depth,weight);

this.cost=cost;

}

}

public class Main{

public static void main(String[] args){

Shipment shipment=new Shipment(10,20,30,50,100);

System.out.println("Box Volume: "+shipment.volume());

System.out.println("Box Weight: "+shipment.weight);

System.out.println("Shipment Cost: "+shipment.cost);

}

}

Output:

Box Volume: 6000.0

Box Weight: 50.0

Shipment Cost: 100.0

=== Code Execution Successful ===