class Box {

double width;

double height;

double depth;

Box() {

}

Box(double w, double h, double d) {

width = w;

height = h;

depth = d;

}

void getVolume() {

System.out.println("Volume is : " + width \* height \* depth);

}

}

public class MatchBox extends Box {

double weight;

MatchBox() {

}

MatchBox(double w, double h, double d, double m) {

super(w, h, d);

weight = m;

}

public static void main(String args[]) {

MatchBox mb1 = new MatchBox(10, 10, 10, 10);

mb1.getVolume();

System.out.println("width of MatchBox 1 is " + mb1.width);

System.out.println("height of MatchBox 1 is " + mb1.height);

System.out.println("depth of MatchBox 1 is " + mb1.depth);

System.out.println("weight of MatchBox 1 is " + mb1.weight);

}

}

class Vehicle {

// Instance fields

int noOfTyres; // no of tyres

private boolean accessories; // check if accessorees present or not

protected String brand; // Brand of the car

// Static fields

private static int counter; // No of Vehicle objects created

// Constructor

Vehicle() {

System.out.println("Constructor of the Super class called");

noOfTyres = 5;

accessories = true;

brand = "X";

counter++;

}

// Instance methods

public void switchOn() {

accessories = true;

}

public void switchOff() {

accessories = false;

}

public boolean isPresent() {

return accessories;

}

private void getBrand() {

System.out.println("Vehicle Brand: " + brand);

}

// Static methods

public static void getNoOfVehicles() {

System.out.println("Number of Vehicles: " + counter);

}

}

class Car extends Vehicle {

private int carNo = 10;

public void printCarInfo() {

System.out.println("Car number: " + carNo);

System.out.println("No of Tyres: " + noOfTyres); // Inherited.

// System.out.println("accessories: " + accessories); // Not Inherited.

System.out.println("accessories: " + isPresent()); // Inherited.

// System.out.println("Brand: " + getBrand()); // Not Inherited.

System.out.println("Brand: " + brand); // Inherited.

// System.out.println("Counter: " + counter); // Not Inherited.

getNoOfVehicles(); // Inherited.

}

}

public class VehicleDetails { // (3)

public static void main(String[] args) {

new Car().printCarInfo();

}

}

class Counter {

int i = 0;

Counter increment() {

i++;

return this;

}

void print() {

System.out.println("i = " + i);

}

}

public class CounterDemo extends Counter {

public static void main(String[] args) {

Counter x = new Counter();

x.increment().increment().increment().print();

}

}

public class Animal {

public Animal() {

System.out.println("A new animal has been created!");

}

public void sleep() {

System.out.println("An animal sleeps...");

}

public void eat() {

System.out.println("An animal eats...");

}

}

public class Bird extends Animal {

public Bird() {

super();

System.out.println("A new bird has been created!");

}

@Override

public void sleep() {

System.out.println("A bird sleeps...");

}

@Override

public void eat() {

System.out.println("A bird eats...");

}

}

public class Dog extends Animal {

public Dog() {

super();

System.out.println("A new dog has been created!");

}

@Override

public void sleep() {

System.out.println("A dog sleeps...");

}

@Override

public void eat() {

System.out.println("A dog eats...");

}

}

public class MainClass {

public static void main(String[] args) {

Animal animal = new Animal();

Bird bird = new Bird();

Dog dog = new Dog();

System.out.println();

animal.sleep();

animal.eat();

bird.sleep();

bird.eat();

dog.sleep();

dog.eat();

}

}