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**Problem Statement –**

Create Vehicle Interface with name, maxPassanger, and maxSpeed variables. Create

LandVehicle and SeaVehicle Inteface from Vehicle interface. LandVehicle has numWheels

variable and drive method. SeaVehicle has displacement variable and launch method. Create Car

class from LandVehicle, HoverCraft from LandVehicle and SeaVehicle interface. Also create

Ship from SeaVehicle. Provide additional methods in HoverCraft as enterLand and enterSea.

Similarly provide other methods for class Car and Ship. Demonstrate all classes in a application.

**Program –**

import java.util.Scanner;

interface Vehicle{

String name="Lamborghini";

}

interface LandVehicle extends Vehicle{

int numWheels=4;

void drive();

}

interface SeaVehicle extends Vehicle{

String startDate="24/03/2021";

void launch();

}

class Car implements LandVehicle{

int maxPassenger;

int maxSpeed;

String colour;

public Car(int maxPassenger, int maxSpeed, String colour) {

this.maxPassenger = maxPassenger;

this.maxSpeed = maxSpeed;

this.colour = colour;

}

public void drive(){

System.out.println("the car is on drive");

}

public void display(){

System.out.println("Company is : "+name);

System.out.println("The number of wheels of car is : " +numWheels);

System.out.println("Max passengers can sit is :" + maxPassenger + "\nMax speed can be : " + maxSpeed + "\nColour of car is : "+ colour);

}

}

class Ship implements SeaVehicle{

int maxPassenger;

int maxSpeed;

String colour;

public Ship(int maxPassenger, int maxSpeed, String colour) {

this.maxPassenger = maxPassenger;

this.maxSpeed = maxSpeed;

this.colour = colour;

}

public void launch(){

System.out.println("The ship is launched");

}

public void display(){

System.out.println("Company is : "+name);

System.out.println("Launch date is "+startDate);

System.out.println("Max passengers can sit is :" + maxPassenger + "\nMax speed can be : " + maxSpeed + "\nColour of ship is : "+ colour);

}

}

class HoverCraft implements LandVehicle,SeaVehicle{

public void launch(){

System.out.println("The HoverCraft is launched");

}

public void drive(){

System.out.println("the hoverCraft is on drive");

}

public void enterLand(int a,int b,String c){

System.out.println("HoverCraft is entering land");

Car C=new Car(a,b,c);

C.display();

}

public void enterSea(int a,int b,String c){

System.out.println("hovercraft is entering sea");

Ship S=new Ship(a,b,c);

S.display();

}

}

public class Interfaces{

public static void main(String[] args) {

System.out.println("Choose from the following \n1.Car\n2.Ship\n3.HoverCraft");

Scanner sc = new Scanner(System.in);

int choice = sc.nextInt();

switch(choice){

case 1 :

System.out.println("Enter max passengers of car ");

int a= sc.nextInt();

System.out.println("Enter max speed of car ");

int b= sc.nextInt();

System.out.println("Enter colour of car ");

String c= sc.next();

Car c1=new Car(a,b,c);

c1.display();

break;

case 2 :

System.out.println("Enter max passengers of ship ");

int a1= sc.nextInt();

System.out.println("Enter max speed of ship ");

int b1= sc.nextInt();

System.out.println("Enter colour of ship ");

String s= sc.next();

Ship s1=new Ship(a1,b1,s);

s1.display();

break;

case 3 :

System.out.println("choose for following \n 1.Enter land \n2.Enter Sea");

int val =sc.nextInt();

switch(val){

case 1 :

System.out.println("Enter max passengers of car ");

int x= sc.nextInt();

System.out.println("Enter max speed of car ");

int y= sc.nextInt();

System.out.println("Enter colour of car ");

String z= sc.next();

HoverCraft h = new HoverCraft();

h.drive();

h.enterLand(x,y,z);

break;

case 2 :

System.out.println("Enter max passengers of ship ");

int p= sc.nextInt();

System.out.println("Enter max speed of ship ");

int q= sc.nextInt();

System.out.println("Enter colour of ship ");

String r= sc.next();

HoverCraft h1 = new HoverCraft();

h1.launch();

h1.enterSea(p,q,r);

break;

}

break;

default:

System.out.println("invalid Choice");

}

}

}

**Output –**

