Lab 08 Solutions:

Car

```
public class Car {
	private String model;
	private int year;
	private int mileage;
	private double soom;
	private double hadd;

	// Methods

	public Car() {}
	public Car(String model, int year, int mileage, double hadd, double
soom) {
		this.model = model;
		this.year = year;
		this.mileage = mileage;
		this.hadd = hadd;
		this.soom = soom;
	}
	public void setModel(String model) {
		this.model = model;
	}
	public String getModel() {
		return this.model;
	}
	public void setYear(int year) {
		this.year = year;
	}
	public int getYear() {
		return this.year;
	}
	public void setMileage(int mileage) {
		this.mileage = mileage;
	}
	public int getMileage() {
		return this.mileage ;
	}
	public void setSoom(double soom) {
		this.soom = soom;
	}
	public double getSoom() {
		return this.soom;
	}
	public void setHadd(double hadd) {
		this.hadd = hadd;
```

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	}
	public double getHadd() {
		return this.hadd;
	}
	public double difference() {
		return hadd - soom;
	}
	public boolean similar(Car c2) {
		if (this.model.equalsIgnoreCase(c2.getModel()) && this.year ==
c2.getYear() &&
				(Math.abs(this.mileage - c2.getMileage()) <= 10000))
return true;
		else return false;
	}
	public void printCar() {
		System.out.println("This car is a "+model+" and was made in
"+year+". \nIt has "+
					mileage+" KM and soom is "+soom+" Hadd
is "+hadd);
	}
} //  Class Car



import java.util.Scanner;
public class testCar {
	public static void main(String[] args) {
		Scanner kb = new Scanner (System.in);
		Car car1 = new Car();
		System.out.print("Please enter car model, year, mileage, hadd and
soom ");
		car1.setModel(kb.next());
		car1.setYear(kb.nextInt());
		car1.setMileage(kb.nextInt());
		car1.setHadd(kb.nextDouble());
		car1.setSoom(kb.nextDouble());

		System.out.print("Please enter car model, year, mileage, hadd and
soom");
		Car car2 = new
Car(kb.next(),kb.nextInt(),kb.nextInt(),kb.nextDouble(),kb.nextDouble());

		// Print both cars info
		car1.printCar();
		car2.printCar();

		// Check if car1 and car2 are similar
		if (car1.similar(car2))
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                System.out.println("Both cars are similar and mileage is
within 10000");
            else
                System.out.println("Cars are not similar");

            kb.close();
      }
} // Class testCar
```

Ball

```
public class Ball {
private double x,y,distTraveledX, distTraveledY;
private static double totDistXAllBalls ;
private static double totDistYAllBalls ;
private static double lastX;
private static double lastY;

// Methods

public Ball() {
}
public Ball(double newX, double newY) {
      x=newX;
      y=newY;
}
public double getX() {
      return x;
}
public double getY() {
      return y;
}
public double getDistTraveledX() {
      return distTraveledX;
}
public double getDistTraveledY() {
      return distTraveledY;
}
public static double getTotDistXAllBalls (){
      return totDistXAllBalls;
}
public static double getTotDistYAllBalls (){
      return totDistYAllBalls;
}
public void move(double xDisp, double yDisp){
      if ( (x + xDisp) == lastX && (y + yDisp) == lastY )
      {
            System.out.println("The ball in position ("+x+","+y+
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                        ") cannot move to position ("+(x + xDisp)+","+(y +
yDisp)+")");
      }
      else {
            x += xDisp;
            y += yDisp;
            this.distTraveledX += Math.abs(xDisp);
            totDistXAllBalls+=Math.abs(xDisp);
            this.distTraveledY += Math.abs(yDisp);
            totDistYAllBalls+=Math.abs(yDisp);
            lastX=x;
            lastY=y;
      }
}
public String toString(){
      return "Ball @ ("+x+","+y+")";
      }
} // Class Ball


import java.util.Scanner;
public class testBall {
      public static void main(String[] args) {
            Scanner kb = new Scanner(System.in);
            Ball b1 = new Ball (2,2);
            System.out.println("B1 "+b1.toString());
            b1.move(3,-2);
            System.out.println("B1 "+b1.toString());
            b1.move(2, -7);
            System.out.println("B1 "+b1.toString());
            System.out.println("Distance travelled on X for b1 "+
b1.getDistTraveledX());
            System.out.println("Distance travelled on y for b1 "+
b1.getDistTraveledY());
            Ball b2 = new Ball ();
            System.out.println("B2 "+b2.toString());
            b2.move(7,-7);
            System.out.println("B2 "+b2.toString());
            b2.move(2,4);
            System.out.println("B2 "+b2.toString());
            System.out.println("Distance travelled on X for b2 "+
b2.getDistTraveledX());
            System.out.println("Distance travelled on y for b2 "+
b2.getDistTraveledY());
            System.out.println("Distance travelled on X for all balls "
            + Ball.getTotDistXAllBalls());
            System.out.println("Distance travelled on Y for all balls "
            + Ball.getTotDistYAllBalls());
            kb.close();
```

```
    }
} // Class testBall
```