Finish Car & Passenger Example
public class Bell {
    private int num;

    public Bell() {
        this.num = 3;
    }

    public static void main(String[] args) {
        Bell b = new Bell();
        b.num = 5;
    }
}
What is count?

```java
public class Widget {
    char ch;
    static int count;

    Widget(char ch) {
        this.ch = ch;
        count++;
    }

    public static void main(String[] args) {
        Widget widgetA = new Widget('A');
        Widget widgetB = new Widget('B');
        System.out.println(Widget.count);
    }
}
```
class CarFactory {
    private static int numCarsMade = 0;
    public static int numCarsMade() { return numCarsMade; }

    public static Car[] makeCar( int numCars) {
        Car[] list = new Car[numCars];

        for ( int i = 0; i < list.length ; i++) {
            list[i] = new Car( 2015, "Honda", "CR-V", "Green", 0);
            numCarsMade++;
        }

        return list;
    }
}
More uses of Scanner

Scanner scan = new Scanner("These are some words.\n+ "and more words.");

while( scan.hasNextLine() ){
    String line = scan.nextLine();
    System.out.println(line);
}
scan.close();
Demo P3
Scanner for Car and Persons

Person Minjoon Seoyeon Alejandro Chloe

Car 2012 Honda Accord Maroon 50000
Circle Class

Design a Circle Class

- Field: radius
- Constructor: radius is the argument
- Methods: `getArea()`, `getCircumference()`, `toString()`
- Recall: Area = $\pi \times radius \times radius$; Circumference = $\pi \times diameter$

Draw a UML Class diagram

Create TestCircle Class

- Create circles with radius 3.5 and 34.1
- Print out area, circumference, and radius
Rectangle

1. Design a Rectangle class
   - **Fields**: width & height as double with default of 1.0 and private
   - **Constructors**: no-arg constructor & a constructor with specified width and height, public
   - **Methods**: getArea() and getPerimeter(), public

2. Draw a UML diagram for the class then implement the class.

3. Write a TestRectangle program that:
   - Creates 2 rectangles (4 by 10) and (3.5 by 25.4)
   - Display width, height, area and perimeter

Textbook Exercise 9.1
Design a bike class.
  Instance Fields: numWheels, Color, unique id
  Class Field: numBikesCreated, used to assign unique id’s to each bike.
  Constructor: numWheels and Color, automatically sets the unique identifier.
  Instance Methods: Number of Wheels and id can be accessed but not changed. Color can be changed. Add a toString() method to return all instance field values in String form.
  Class Method: returns the number of bikes created.

Draw the UML diagram and then write the code.

Create a BikeShop class that creates 10 bikes and stores in an array.
  Print out each bike’s number of wheels, color and id using the toString method.
Portal Snake UML