We saw that an array is a way to have a single variable refer to multiple pieces of data. It is a convenient way to bundle together data if all of the elements are the same type.

```
int[] intArray = new int[3];
```

intArray refers to three ints accessed as intArray[0], intArray[1], and intArray[2].

Java has another way to bundle data together called a class. Here's a class definition that defines what to bundle. A class definition is like a blueprint: it doesn't actually bundle the data but does tell you how data will will be bundled in the future.

```
public class ThreeInts {
    public int first;
    public int second;
    public int third;
}
```

This is saying that a variable of type ThreeInts will contain three elements of data named first, second, and third. Here's an example of using it.

```
ThreeInts myThree = new ThreeInts();
myThree.first = 10;
myThree.second = 20;
myThree.third = 30;
System.out.println(myThree.first + myThree.second +
    myThree.third);
```

NOTES: By convention, classes are named using CamelCaseWithFirstCharacterUpper while the data inside, called the fields, are named using camelCaseWithFirstCharacterLower. Also, a public class named Xyz needs to be placed in a file named Xyz.java.

1) Practice the mechanics of making a class by putting the ThreeInts class definition into a file and making a main program in a second file that executes the above code. Place both files in the same folder so that the main can find the class. Run the main program.

The most comon use of classes is to model real world things. For example, a point in space can be represented as a class that bundles three numbers, x, y, and z. A book might be modeled as a title, author, ISBN, and year of publication. Etc.

2) Model a place on Earth as a longitude, latitude, and name. Be sure to give the class and its fields meaningful names.

3) Write a static method that takes two parameters of your new class type and prints the distance between the two locations. You can find a function to calculate the distance in this StackOverflow page (a Java version is about 1/5 of the way down the page)[1]. For example, the output might look like

   ```
   Distance from 'My house' to 'Disneyland' is 631.45 km.
   ```

4) Test your class and method by writing a small program that creates two objects of your location class, fills them with data for places important to you, and then having the method print the distance. You can check whether it's working by comparing with the https://distance.to website.

You will learn in your programming courses that you will usually mark fields as private instead of public. This means you cannot access them directly using dot.notation. This is true for most larger programs, but occasionally it's useful to make fields public if it's being done simply to bundle a few pieces of data and nothing else fancy is going on.

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[1] Whenever you find code online that is useful to you, always always always give credit to the source as a comment near where you use the code. For example:
```
// Distance code from https://stackoverflow.com/questions/27928
```