

Exercise – Objects

Objective

The objective of this exercise is to understand how to create and use objects in Java

Overview

This exercise is in two parts. First we're going to create some objects based around a scenario and then you're going to model something of your own.

With all these exercises it is best to test each step as you write. To do this with objects create a class with a main method in it, then create the objects in this method and print out the various fields and output from methods as you write it. For example, after writing a setName method, a good test is to create an object of that type, call setName, then call getName, printing out the results.

Step 1 - Books

1. Create a class that describes a book. It should have a name, author and price as instance variables
2. Write a constructor that sets all the fields in the class
3. Create getter and setter methods for each of the fields in the class. Make sure that you set your fields/instance variables to private - this is both good practice and good for security!
4. Create getBookDetails() that returns book details (name, author and price)
5. In your main class create a number of books and print out the contents of them
6. Declare an array variable to store up to three Book objects
7. Add the books (Book objects) to the array created in previous step and loop through the array printing out the contents of each object

Step 2 - Creating your own objects

Think of a real-world object and model it in Java form. Think about the fields you will need to describe the object and any methods that will act on it. Then write the code for your object including a constructor, getter and setter methods, and a `getDetails()` method.

See if you can think of a situation where a private method may be useful for your object. Have a play around with scope and the differences between public, private, and protected.