

Submit: Library Lab

The libraries of SmallTownX need a new electronic rental system, and it is up to you to build it. SmallTownX has two libraries. Each library offers many books to rent. Customers can print the list of available books, borrow, and return books.

We provide two classes, Book and Library, that provide the functionality for the book database. You must implement the missing methods to make these classes work.

Step One: Implement Book

First we need a class to model books. Start by downloading the attached [Book.java](#) file. This class defines methods to get the title of a book, find out if it is available, borrow the book, and return the book. However, the skeleton that we provide is missing the implementations of the methods. Fill in the body of the methods with the appropriate code. The main method tests the methods. When you run the program, the output should be:

```
Title (should be The Da Vinci Code): The Da Vinci Code
Rented? (should be false): false
Rented? (should be true): true
Rented? (should be false): false
```

Hint: Look at the main method to see how the methods are used, then fill in the code for each method.

Step Two: Implement Library

Next we need to build the class that will represent each library, and manage a collection of books. All libraries have the same hours: 9 AM to 5 PM daily. However, they have different addresses and book collections (i.e., [arrays](#) of Book objects).

Download the attached [Library.java](#) file. We provide a main method that creates two libraries, then performs some operations on the books. However, all the methods and member variables are missing. You will need to define and implement the missing methods. Read the main method and look at the compile errors to figure out what methods are missing.

Notes

- Some methods will need to be static methods, and some need to be instance methods.
- Be careful when comparing Strings objects. Use `string1.equals(string2)` for comparing the contents of `string1` and `string2`.
- You should get a small part working at a time. Start by commenting the entire main method, then uncomment it line by line. Run the program, get the first lines working, then uncomment the next line, get that working, etc.
- You must not modify the main method.

The output when you run this program should be similar to the following:

```
Library hours:
  Libraries are open daily from 9am to 5pm.
Library addresses:
  10 Main St.
  228 Liberty St.
```

```
Borrowing The Lord of the Rings:
  You successfully borrowed The Lord of the Rings
  Sorry, this book is already borrowed.
  Sorry, this book is not in our catalog.
```

```
Books available in the first library:
  The Da Vinci Code
  Le Petit Prince
  A Tale of Two Cities
```

```
Books available in the second library:
  No book in catalog
Returning The Lord of the Rings:
  You successfully returned The Lord of the Rings
```

```
Books available in the first library:
  The Da Vinci Code
  Le Petit Prince
  A Tale of Two Cities
  The Lord of the Rings
```

Submission

Push your completed version of both `Book.java` and `Library.java` to a Github repo and submit the URL for that repo.

-  [Book.java](#)
-  [Library.java](#)

Submission status

Submission status	No attempt
Grading status	Not graded
Last modified	-
Submission comments	