

HW 5: (*Another look at HW4*)

- The goal of this coding exercise is to create two classes `BookstoreBook` and `LibraryBook`. Both classes have these attributes:
 - author: String
 - title: String
 - isbn : String
- The ***BookstoreBook*** has an additional data member to store the price of the book, and whether the book is on sale or not. If a bookstore book is on sale, we need to add the reduction percentage (like 20% off...etc). For a ***LibraryBook***, we add the call number (that tells you where the book is in the library) as a string. The call number is automatically generated by the following procedure:

The call number is a string with the format `xx.yyy.c`, where `xx` is the floor number that is randomly assigned (our library has 99 floors), `yyy` are the first three letters of the author's name (we assume that all names are at least three letters long), and `c` is the last character of the isbn.
- In each of the classes, add the setters, the getters, at least three constructors (of your choosing) and override the `toString` method (see sample run below).
- Your code should display the list of all books keyed in by the user

What's new in HW5:

- Create an abstract class that you call **Book**. The class **Book** should have the fields and the code that is shared by both the **BookstoreBook** and the **LibraryBook** classes. Both of those classes extend the **Book** class. Test your code with an array of 100 elements of Book. Call that array **list** (You can't have an array to store the BookstoreBook objects and another one to store the LibraryBook objects. One array (**list**) to hold all the book objects that your code creates).
- Create a class that you call BookList in which you put **list** as a private field. Your code must have the following structure:

```
public class Main {
    public static void main(String args[]) {
        // Instantiate the class BookList here ...
    }
}
// _____
abstract class Book {
    //code of the abstract class Book
}
// _____
class BookstoreBook extends Book {
    // fields and specific code to the BookstoreBook class goes here
}
// _____
class LibraryBook extends Book {
    // fields and specific code to the LibraryBook class goes here
}
// _____
class BookList {
    private Book[] list;
    public BookList() {
        list = new Book[100];
        // Additional code goes here if needed...
    }
}
```

Sample Run (Same as in HW4)

The user's entry is marked in boldface

Welcome to the book program!

Would you like to create a book object? (yes/no): **yEs**

Please enter the author, title and the isbn of the book separated by /: **Ericka Jones/Java made Easy/458792132**

Got it!

Now, tell me if it is a bookstore book or a library book (enter BB for bookstore book or LB for library book): **BLB**

Oops! That's not a valid entry. Please try again: **Bookstore**

Oops! That's not a valid entry. Please try again: **bB**

Got it!

Please enter the list price of JAVA MADE EASY by ERICKA JONES: **14.99**

Is it on sale? (y/n): **y**

Deduction percentage: **15%**

Got it!

Here is your bookstore book information

[458792132-JAVA MADE EASY by ERICKA JONES, \$14.99 listed for \$12.74]

Would you like to create a book object? (yes/no): **yeah**

I'm sorry but yeah isn't a valid answer. Please enter either yes or no: **yes**

Please enter the author, title and the isbn of the book separated by /: **Eric Jones/Java made Difficult/958792130**

Got it!

Now, tell me if it is a bookstore book or a library book (enter BB for bookstore book or LB for library book): **LB**

Got it!

Here is your library book information

[958792130-JAVA MADE DIFFICULT by ERIC JONES-09.ERI.0]

Would you like to create a book object? (yes/no): **yes**

Please enter the author, title and the isbn of the book separated by /: **Erica Jone/Java made too Difficult/958792139**

Got it!

Now, tell me if it is a bookstore book or a library book (enter BB for bookstore book or LB for library book): **LB**

Got it!

Here is your library book information

[958792139-JAVA MADE TOO DIFFICULT by ERICA JONE-86.ERI.9]

Would you like to create a book object? (yes/no): **no**

Sure!

Here are all your books...

Library Books (2)

[958792130-JAVA MADE DIFFICULT by ERIC JONES-09.ERI.0]

[958792139-JAVA MADE TOO DIFFICULT by ERICA JONE-86.ERI.9]

Bookstore Books (1)

[458792132-JAVA MADE EASY by ERICKA JONES, \$14.99 listed for \$12.74]

Take care now!