HW on Inheritance

* The goal of this coding exercise is to wite the code for two classes ***BookstoreBook*** and ***LibraryBook***. Both classes have these fields:

author: String

tiltle: 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 shelved 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
* Create an abstract class that you name ***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

//You may add an abstract method if you see fit…

}

//\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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**

**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 ad 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]

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Bookstore Books (1)

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

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Take care now!