KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
Information and Computer Science Department
ICS202: Data Structures
HOMEWORK 1 (Term 071)
Due Date: Wednesday, September 26th, 2007

Program description:
A Book is described as follows

```
public class Book implements Comparable
{
        private String Title;
        private int Status;
        private String Author;
}
```

You must:

(a) Create a **Book** class that `implements Comparable` interface. The class has:
   (i) Three instance variables, ***Title***, ***Status*** and ***Author***
   (ii) Two constructors with the following headers:
   ```
   public Book ()
   public Book (double Title, String Author)
   ```
   (iii) **get** (accessor) methods for all the instance variables.
   (iv) **void setStatus(int s)** method to the set the status of the book
   (v) A status value of 1 means the book has been borrowed (checkedout) and status of 0 means the book is present in the library.
   (iv) An appropriate ***toString*** method that would print all instance variables on the same line.
   (v) A ***compareTo*** method with the following header:
   ```
   public int compareTo(Object obj)
   ```
   that does the comparison based on **Title** of the Book.

(b) Write a visitor class, AuthorVisitor. This visitor will take the name of an author as input from its constructor, we will call this "***visauthor***". The AuthorVisitor will put all books that have the same author as ***visauthor*** in a container that belongs to the AuthorVisitor class. Provide a method called getAuthCont() that will return this container.

(c) Write a visitor class, BorrowVisitor, that visits a container of books and sets the status of each book to be Borrowed.

(d) Write a test class, TestApplication, to test your visitors.

1. Your program should create at least 10 objects of Book class
2. Use the AuthorVisitor to get a container of books that belong to a specific author.

3. Use the BorrowVisitor to set the status of all books in the container belonging to AuthorVisitor.
4. Print the contents of the container created in step 1, using a printing visitor from the labs.

Submission Instructions:

- All the classes for this homework must be stored in a package **`ics202.hw01`.**
- You must import the necessary packages needed for your program.
- You need to submit two things:
    1. A printed copy of your report at the beginning of your class on the due date.
    2. Submit your entire **`ics202`** package into the webCT under the Assignments option.