

Assignment 03: Library System

Performance Measures

1. Demonstrate that you can develop a solution to a problem using all the needed knowledge and skills covered in the course to date.
2. Use the ArrayList class as a data structure to handle a collection of objects
3. Use good object-oriented analysis, design and programming

Description (Requirements)

Create a Java program that simulates a Library System.

The Library System should allow the user to enter commands at the keyboard.

- The user is asked to login with their name and password (as it is recorded in the list of Patrons). The user is given up to three attempts to login. The program terminates after the third unsuccessful attempt. The user successfully logs in if the login name and password match that of a patron in the list of patrons.
- The user selects from a menu to do the various actions offered after successfully logging in. The available actions should include:
 - Display all the books in the library
 - Display a list of books this patron currently has checked out
 - Search for a book by title
 - Search for a book by author
 - Check out a book (only if it is not already checked out)
 - Check in a book that this patron currently has checked out
 - Display a list of all patrons of the library (only if the current patron is designated as a librarian)
 - Change your password
 - Quit the program

Notes:

For this program you should create the list of Book objects using a method that creates "hard coded" Book objects and adds them to the list of books and create the list of Patron objects using a method that creates "hard coded" Patron objects and adds them to the list of patrons.

Submit - Use the "Assignments Drop Box" in Blackboard - do NOT submit via email

Create a **zip file** containing all the required files *Name the file with your name, e.g. SueJones03.zip*

Submit ALL files in one zip file consisting of:

1. Your properly documented **source** code— **do not** submit the byte code files (i.e. .class files)
2. A completed run of the test cases YOU create (with execution results)
3. A sample of the output from running your program (Output03.txt)
4. The answers to the "Standard Questions" (StandardQuestions03.txt)

Standard Questions

- A. How much time did you spend on this assignment?
- B. What difficulties did you experience?
- C. What were the results of running your test cases/program? Run the program enough times to see that it works correctly – more about testing in subsequent assignments.