CS-217 Object Oriented Programming

ASSIGNMENT 01 (Total Marks: 100)

Due Date: 11:59 PM 12th, April 2021

INSTRUCTIONS

- Zero marks will be awarded to the students involved in plagiarism.

- All the submissions will be done on google classroom.

- You have to submit zip folder containing all .java files. The name of the folder should be named after course section and roll number. i.e. CS217_Section_RollNO

- Naming convention must be followed strictly.

- No late submissions will be entertained in any case.

- Assignment should be implemented in java

Library Management System

You have to implement a console-based library management system in this assignment. A library management system is a system which aims in developing a computerized system to maintain all the daily work of a library. The system helps both students and library manager to keep a constant track of all the books available in the library.

Features of the system

- There should be two types of users that interacts with the library management System. First is the library manager (admin) and second is the student.
- The books are separate entities which are associated to library stock and also to the students for borrowing.
- Multiple students can read, search and borrow particular books from library. Each time student borrows a book, the availability of the book decreases depending on the number of available copies of the particular book. If one student borrowed last copy a particular book. It should become unavailable for other students.
- The library management system should have a general console menu that allows switching to different modes (admin or student). For example, the general menu will show options like
- Press # to open the admin menu.
- Press $ to open the student menu.
- Press < to exit.
  Example menu is shown below

```
-------Library Management System-------
     Enter #: Switch To Admin Mode
     Enter $: Switch To Student Mode
     Enter <: Exit
```

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- Each user mode will have its own set of operation which can be performed on library management system.
- (Students) The user in student mode will have a roll no associated to the user class (this will help differentiate different students).
- (Admin mode) The user in admin mode will have password associated to the user class. Upon pressing # the library management system will ask to validate the associated password for the admin mode.

```
            (admin)-Enter Password:
```

- Upon successful password verification the user should be able to view the admin console menu.
- There should be console showing a menu on the screen which is visible to the library manager(admin) and student. For example, the menu displayed to the library manager will have the following options.
- Press 1 to add a new book.
- Press 2 to modify a book record.
- Press 3 to delete a book detail.
- Press 4 to add student record upon issue of a book (it should record issue date, return date and fine (penalty)
- Press 6 to view all available books.
- Press 7 to view the records of all books issued in a particular month
- Press 8 to change the password.
- Press 9 to go back to general menu.

```
--------(Admin)-Library Management System--------

•     Press 1: Add book.
•     Press 2: Modify book record.
•     Press 3: Delete a book.
•     Press 4: Issue book
•     Press 6: View all available books.
•     Press 7: View the Records of all books issued in a particular month
•     Press 8: Change the password.
•     Press 9: Go back to general menu.
```

Similarly, for the student end there should a menu displaying the following options.
- Press 1 to search a book available in the library stock.
- Press 2 to borrow a particular book from library.
- Press 3 to read a particular book
- Press 4 to go back to the general menu etc.

```
--------(Student)-Library Management System--------

•     Press 1: Search a book.
•     Press 2: Borrow a particular book.
•     Press 3: Read a particular book.
•     Press 4: Return borrowed book.
•     Press 5: Go back to the general menu etc.
```

The basic scenario of library management system is to add library data in the admin mode and validate all the operations by switching modes to student and admin (completing all defined operations in the console menus). For this assignment you can use java Arrays for this assignment.