

## CS3011 Database Systems Lab

Jan-Apr 2014

### Description

The objectives of the library system are to allow students/faculty to:

- withdraw and return books
- search the library's books
- pay overdue charges

and librarians to:

- add/delete books to/from the library's holding
- move books from one shelf of the library to another.

The social features of the database should allow users to:

- add books to their personal bookshelves
- rate and review books
  - see what their friends are reading
  - get suggestions for future reading choices based on their reviews of previously read books.

Below are a few desired library-related features that you should include (in addition to others you deem necessary):

1. The system should contain information about each valid user of the system: *name*, *password*, *address*, *Id*, unpaid *fin*es, the identity of each book the patron has currently withdrawn and its *due-date*.
2. The system should contain information about each librarian: *name*, *password*, *address*, *Id*.
3. The system should contain information about each book in the library's holdings: *isbn* number, *title*, *author(s)*, *year* (of publication), *copy number*, *shelf-Id*, current *status* (on-loan, on-shelf, on-hold, on-loan-and-on-hold), the date on which the book entered loan and/or hold status. For books on loan, the system should contain

the *Id* of the user involved. For books on loan and overdue, the system should contain the date on which the last reminder email was sent. For books on hold the system should contain an ordered list of *Ids* of users who have requested hold status.

4. The system should contain information about each shelf in the library: *ShelfId*, *capacity* (number of books that it can hold).

The database should satisfy the following integrity constraints.

1. A book cannot be on hold for a student user for more than 10 days (this restriction does not apply to faculty). If after removing a book from hold status as a result of this constraint, the hold list is empty, the book reverts to the on-shelf status.
2. A user cannot withdraw a book if his/her unpaid fines exceed Rs 1000.
3. A student user cannot withdraw more than 3 books at any one time (this restriction does not apply to faculty).
4. The date on which the last reminder email for an overdue book was sent cannot be more than 15 days.
5. A book on loan for more than one month becomes overdue.

### **Assignment Tasks**

Task 1: Build a web interface with the above features

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