LIBRARY MANAGEMENT SYSTEM

PHASE – II

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LIBRARY MANAGEMENT SYSTEM - ER MODEL

This part is going to show and describe the Entity Relationship model for the library base on the description given in requirement analysis section. This model has many physical objects such as student, librarian, faculty, stock, book, journal, magazine, DVD, fine, account, location corresponding to the entities. Moreover, there are some operations between these entities such as checkout, hold, reserving from stock, paying fines, signing up for an account and so on as its relations.

The database stores the information of its members such as name, phone number, address, email address, UF id, sex, start date of membership and date of birth. Each member has a unique UF id. A member can be either a student or a staff. The major of each student is stored in the database as well. Each staff can be either a librarian or a faculty member. For faculties, the name of their department and the courses they teach are stored. Each faculty can reserve one or more item from stock for his/her course. Each member will sign up for an account. In that account they have access to their information. Each account is identified by its username. They can see the list of the item they have checked out or they can check the status of their items on hold. They also can pay their fines if applicable. The general information about the items in the library such as the item ID, title, category, price, status, location, number of copies and duration is stored in the stock. In the design of the ER model, the information about book, DVDs journals, magazines, and exam papers has been separated from stock. By this approach, different copies of the same item can be stored in the stock. Each item in the stock is identified by its ID. For books and journals, title, name of the publisher, author, ISBN and published year is stored. For DVDs, the title, rating, director, manufactured date and the ISSN is stored. For magazines, the information about its title, ISSN and publisher is stored in the database. In each of them ISSN is the primary key. Each of the items in the stock is located in a location. The location is identified by its name. The information about the name, address and the phone number is stored in the location. Each librarian works in a specific location.
Entity Relationship Diagram
The web interface of the database contains many web pages. The first page is the home page of the library. In this page, there are several tabs, homepage, login, and about. Each of these tabs led the user to a new web page. There are also two more options for the user, first is the basic search and the second one is advanced search. If a user wants to login to his/her account and new tab will open. This page consists of the tabs as the home page tab and it has couple of options. A drop down which will let the user to indicate the type of his/her membership, then it contains two text boxes for entering username and password and a login button. It also has an option by which the user is able to sign up for a new account, if he/she doesn’t have one. User can sign up for a new account by entering name, UF id, email address, phone number, address, and choose a unique user name and password.

After user sign up for a new account, the user is led to a new web page based on the type of user (students, faculty, or librarian). In case of student, the page has four tabs: home, about, log out, search. This page also contains many options such as search, pay fines, update profile and check account status. In case of faculty, in addition to the tabs and the options for a student, it has two more options: recommend a new item and reserve an item. In case of a librarian, in addition to the tabs and options for a student, it has several more options like check out items, managing fines, managing library members list such as add, remove or update a member information, managing items (update, add, modify items), manage reserve items, recommend a new book, manage request for a renewal, send emails to the members and account management.

In case of fines for different members a new page will open which consists of the tabs described before and some other options such as payment mode, which can be either by debit card or credit card. In case of advance search, a new page will open which has some options for searching through the stock. This page contains a drop down, by which the user can select if he/she is interested to search in the stock by using name, title, ISBN, ISSN. The user can also make a filter in which kind of item he/she is interested to do the search such as DVDs, books, exams, magazines, and journals. The result of the search will appear in a different page which in addition to the previous tabs, consists of a list of the items found and the time of item, number of copies, the status of the item, its waiting list queue and its duration.
Web Interface Diagram

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