Library Management System

Objective

The main objective of the system is to provide a user-friendly interface that the librarian can easily use. It must also not require a very high system configuration and can be worked on multiple platforms at the same time. The librarian, who will be the main admin will be able to add new books, delete previous books, retrieve details of the books present in the library. The librarian can maintain the process of issuing and submitting the books by the students. He/she must also be able to add or delete the students who can issue the books.

Language and software used:

Main Language: JAVA
Database: MySQL

Modules

The system has these main modules which are completely under the control of the librarian who is the main administrator of the project.

- ❖ Insertion to Database
  User-friendly interface to add new books as well as new students.
- ❖ Deletion to Database
  User-friendly interface to remove unused books and passed out students.
- ❖ Search
  The administration can search any book or user with the unique ID given to them.

Database

Student

- Name
  The full name of the student
  "name"
- Roll Number
  The roll number or any unique ID of the student
  "rollno"
- Class
  The class/course in the student is studying
  "studentclass"
- Section
  The section/branch in which the user is studying
  "Section"
- Contact
  The contact details of the student. This can be either a mobile
  number or a mail Id.
  "Contact"

All Books

- Name
  The name of the book
  "name"
- The Book ID
  The unique book ID of the book which is used for all the main
  process
  "bookId"
- Address
  The location of the book where it is physically present in the library.
  "address"
- Edition Details
  The details of the version and edition of the book
  "edition"
- Remark
  Any useful remark related to the book can be added here
  "remark"

Issued Books

- Borrower's Name
  "name"
- Roll No
  The roll number of the student who is borrowing the book
  "rollno"
- Book Name
  "bookName"
- Book ID
  "bookId"
- Date
  The date of the issuing of the book. Here the admin can add the date according to its need and format.
  "date"

*** NOTE: all the values must of at most 20 Letters.

Classes

- ❖ home
  The main class which has all the links to other class. This is the first and servers as the home for most of the other classes.
- ❖ student
  This can be considered as the main class for all activities related to students. All the links to other student activities are here.
- ❖ newStudent
  For adding a new student to the database
- ❖ deleteStudent
  For deleting the students from the database
- ❖ editStudent
  For editing the details of the student
- ❖ seachStudent
  For searching a particular student from the database
  ** Under Development
- ❖ issue
  To issue a book to the student

❖ returnbook
  For returning the book
❖ record
  This can be considered as the main class for all functions related to books.
❖ Newbook
  For adding a new book to the database
❖ deletebook
  For deleting a book

  ** Classes under development: searchbook(for searching a book), allbook
  (For getting the list of all the books), issuedbook (For getting the list of all
  the issued books)

State Diagram

```
                        ┌─────────────────────┐
                        │   Student Panel     │
                        └─────────────────────┘
```

Student Panel

Add new student

+ Name
+ Roll No.
+ Class
+ Section
+ Contact

Delete Student

+ Roll Number

Edit Student

+ Name
+ Roll No.

-> Class
-> Section
-> Contact

Search

+ Name
+ Roll No.

ADD

DELETE

UPDATE

SEARCH

Student Table