**Software Requirements Specification**

**For**

**Library Management System**

**CATEGORY:** Web Application

**PURPOSE:**

The software resource specification is made with the purpose of outlining the software architecture and design of the Library Management System. The purpose of this project is to provide an efficient environment to enable the functioning of a complete library system online (right from issuing books as well as levying fines for the instructor to viewing the book catalogue and requesting books for the students).

**SCOPE:**

The proposed Library management system can be used by Educational institutes and private libraries. It can also be used by corporate or government offices who still rely on paper/manual data entry as their primary mode of storing information.

**INTRODUCTION:**

* **Existing System**

The existing manual system either involves paperwork or manual data entry and is not secure. It is inefficient due to not only the time involved but also due to the manual labor which goes into the task. Thus, not only is the current system prone to breach but it is also dependent on physical modes of storage (in the forms of paper logs, data spreadsheets in hard-disks, etc). which makes the whole system vulnerable to many problems.

* **Proposed System**

Library Management System will have the following modules:

* **Librarian**
* **Authentication & Registration:** The librarians will register themselves with the help of a confidential access key provided to them by the Institute’s management. This key will not be accessible by anyone else. In case they wish the system will also help them choose a strong password
* **Adding book details:** The book details can be entered by the librarian manually as well as automatically with the help of the ISBN number.
* **Updating book details:** Updating the edition and the price.
* **Issue books:** Search within the database for availability, in case the book is available the librarian will issue the book to the student provided he is not a defaulter and possesses less than the limit of books that can be issued.
* **Return books:** Update the stock of books and the student profile.
* **Levy Penalty:** The system will automatically calculate the dues that are to be paid by a particular student in case they miss the returning deadline.
* **Clear dues**: Updates the student profile.
* **Balance Sheet**: Record of all transactions
* **Mail defaulters list:** The librarian can mail the list of defaulters along with their penalty details.
* **Student:**
* **Authenticate:** Students can register themselves into the system without the intervention of the librarian.
* **Manage Profile:** With the help of this utility, the student can keep a track of when they have to return the book and manage their pending dues if any.
* **Reserve book:** The student can raise a complaint regarding non availability of books.
* **Search Catalog:** The students can check the availability status of the books remotely.

**Advantages for librarian:**

* Automated method to enter book details.
* The librarian can access and manage the system from the comfort of their home.
* Due to features providing automated imposition of fines, the library admin does not have to keep track of the defaulters manually.
* With the click of a button, they can alert the defaulters.
* Easier for them to keep track of the finances with the help of the timely reports generated by the Library management system.

**Advantages for student:**

* They can check for the availability of the books remotely.
* Easy management of profile i.e. they can easily keep track of their impending dues and the dates on which to return the borrowed books.

**FUNCTIONAL REQUIREMENTS:**

Functional requirements of our system are:

* An authentication system that can log the users into the system as well as classify them (according to their roles, which are the staff (librarian) and the students).
* Maintaining Stock of Books.
* Entering & updating book details manually as well as automatically.
* Issuing and returning books.
* Maintaining Borrower credentials.
* Keeping track of defaulters.

**NON-FUNCTIONAL REQUIREMENTS:**

Non-Functional requirements of our system are:

* Librarian registration facility is designed in such a way that librarian registration is not possible without the intervention of administration.
* Maximum time availability
* Better component design to get efficiency at peak time
* Flexible architecture will be ideally suited to add more features in the future.
* Secure storage of confidential data

**SOFTWARE TOOLS:**

* **Database Server:** MySQL.
* **Client:** Any Web Browser.
* **Development tools:** Visual Studio Code, Jetbrains PyCharm.
* **Programming languages :** Javascript, Python.

**DEPLOYMENT:**

* **Operating system server:** Windows 10.

**HARDWARE SPECIFICATIONS**

* **Processor:** Intel Core i3
* **RAM:** 4GB
* **Hard Disk:** 500 TB