



Software Requirement Specifications
For
Library Management System

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1. Introduction

1.1 Background

This document outlines the software requirement specification for the *Library Management System*. The objective of this Analysis Phase was to:

- Define the scope for the Library Management System.
- Serve as the baseline for the design of the Library Management System.

Library Management System is a computerized application for the librarian to supervise all the activities regarding the management of the library. Using this application, librarian can record various transactions such as adding members, adding books, removing books, issuing books, returning books and so on. In addition to this, an admin must be provided who has the right to add/remove the librarian.

1.2 Scope

The Library Management System provides the librarian with book information, member information and many other facilities. The Library Management System is supposed to have the following features: -

- Providing facility for admin to add or remove librarian
- Mechanism to reset the password in case librarian forgets it.
- Mechanism to change the password
- Facility to view books that are available.
- Providing facility for librarian to add new members
- Providing facility for librarian to add and remove books from library.
- Providing facility for librarian to add a new category of book.
- Providing facility for librarian to issue and return books.

1.3 Product Perspective

The Library Management System is a package to be used by Librarians to improve the efficiency of Libraries. The Library Management System benefits greatly the members and the Librarian of institute. The system provides books catalog and information to members and helps them decide on the books to issue from the library. The Librarian can keep the books catalog updated all the time so that the members get the updated information all the time.

1.4 Key Assumptions, Dependencies and Constraints

The successful execution of the assignment will depend on the following factors:

Assumptions

- Admin is the only person who is authorized to add or remove librarian.
- Librarian is the only person who can manage store inventory system in this application.
- Librarian can issue books to a person only after creating an account for him/her.

Dependencies

- MySQL server to store the database.
- Apache Tomcat web server to implement several Java EE specifications including Java Servlets, Java Server Pages (JSP).

Constraints

- The Librarian must enter the correct username and password to enter into this application.
- The information of all the users must be stored in a database that is accessible by this application.
- The information of all the books must be stored in a database that is accessible by this application.

1.5 Software Platform

This section describes the software tools used in the system.

1. Font end:

The front end is designed using JSP and javascript

- i. JSP: JavaServer Pages (JSP) is a server-side programming technology that enables the creation of dynamic, platform-independent method for building Web-based applications. JSP have access to the entire family of Java APIs, including the JDBC API to access enterprise databases
- ii. Javascript: JavaScript (JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed

2. Back end

- i. **MYSQL-** MYSQL is used as database as it is easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write. The SQL phrase stands for Structured Query Language

User Interface Specifications

The user interface is one of the most important parts of any program because it determines how easily you can make the program do what you want. the goal of user interface design is to produce a user interface which makes it easy, efficient, and enjoyable to operate a machine in the way which produces the desired result. The operator needs to provide minimal input to achieve the desired output, and also that the machine minimizes undesired outputs.

Home Page:

Home page consists of Search box on left side and Admin or Librarian Login on the right side. In the search field, we can search the books by providing the book name.

Admin Login:

In this page, Admin can enter username and password. Once the Admin enters the proper details he/she will be redirected to the next page where he/she can manage functionalities.

Add Librarian:

In this page, Admin can add new librarian by entering his/her details like name, age, gender, mobile number, email Id and Admin will provide the default password to the Librarian.

Remove Librarian:

In this page, Admin can remove a Librarian by providing his/her username.

View Librarian:

In this page, Admin can see the details of the Librarian.

Librarian Login:

In this page, Librarian can enter username and password. Once the Librarian enters the proper details he/she will be redirected to the next page where he/she can manage functionalities.

Set Security Code:

In this page Librarian, can set a security code. This security code is used when he/she forgets the password.

Forgot Password:

In this page, Librarian can reset his/her password by entering the security code and username.

Change Password:

In this page, Librarian can change password by providing username, old password and anew password.

Add Member:

In this page, Librarian can add new member by entering his/her details like name, age, gender, mobile number, email Id.

Add Book:

In this page, Librarian can add a new book to the store by entering book details like book title, Author's name, Year of publication and Category.

Add Category:

In this page, Librarian can add new category existing book category list.

Remove Book:

In this page, Librarian can remove any book from the book list by providing the book id.

Issue Book:

In this page, Librarian can issue a book for the member by entering book id and member id.

Return Book:

In this page, Librarian can update the date on which the book is returned by entering book id and member id.

Issue Details of a Member:

In this page, Librarian can view the list of books issued to a member along with issued date and return date.

View All Members:

In this page, Librarian can view details of the members in the library.

View All Books:

In this page, Librarian can view details of books present in the library.

View issue Details:

In this page, Librarian can see the details of the books issued so far.

Functional requirements

- **Admin Login:** Here Admin can login to the system so that he/she can manage functionalities like Add or Remove Librarian and View Librarian details.
 - **Add Librarian:** Here Admin can add new Librarian.
 - **Remove Librarian:** Here Admin can remove Librarian.
 - **View Librarian:** Here Admin can see details of Librarian.
- **Librarian Login:** Here Librarian can login to the system so that he/she can manage functionalities like add new member, add book, remove book etc.
 - **Set Security Code:** Here Librarian can set a security code. With the help of this he can retrieve his/her password.
 - **Forgot Password:** Here librarian can reset his/her password by providing answer to the security question.
 - **Change Password:** Here Librarian can change his/her password.
 - **Add Member:** Here Librarian can add new member by entering his/her details.
 - **Add Book:** Here Librarian can add new book by entering book details.
 - **Remove Book:** Here Librarian can remove any book by providing book id.
 - **Add Category:** Here Librarian can add new book category.
 - **Issue Book:** Here Librarian can issue book by entering member id and book id.
 - **Return Book:** Here Librarian can update the date on which book is returned.
 - **View All Members:** Here Librarian can see all the member details.
 - **View All Books:** Here Librarian can see all the book details.
 - **Issue Details:** Here Librarian can see all the issued book details.
 - **Issue Details of Member:** Here librarian can provide the details of a books taken by a member.
- **Search:** Here we can search the required book by providing book name.