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# LIBRARY MANAGEMENT SYSTEM

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Software Engineering Proposal of Final project

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## Proposal for library management system

### Introduction:

A library contains many books, in many departments, it's very hard for a human to keep track of all the ins and outs, which book is borrowed, and which is due for return, what are the relevant information for each book to help categorize and organize the library easier, so the librarian decides to ask a development team to create a system that manages these challenges and eases his work routine.

### Purpose:

The purpose of this project is to create a system that stores information that helps the librarian and the customer, where both parties can perform their desired tasks on the system quickly and easily.

### Definitions:

*Admin* – someone who oversees the whole system and is responsible for the data incoming and manipulating it

*User* – the customers that will use this system to book, borrow and return their books

*Librarian* – someone who will use the system to keep track of all users and add books.

*Application* – the main program that the users will use, it's a friendly and easy to use system

*Database* – an entity that will be used to store all the data entered by the users, as well as be used to update and manipulate the incoming data

*GUI* – a graphical user interface that will show all the systems functionality in a user-friendly way that is easy to understand and interact with

*Developers* – the personnel responsible for developing the system

*Deployment environment* – the device that the system will run and operate on

### Goals and objectives:

- user and librarian can log in to their accounts
- if a user doesn't have account, they are prompted to create one
- show each user their dashboard based on their role
- user should be able to view available books, books they have borrowed and their return dates
- user should be able to view book details ex: author, publish date, genre ...etc.
- admin should be able to add librarian, view librarian, or delete librarian.
- librarian should be able to view all users' activities, see a dashboard that shows all books and their status ex: available, borrowed

- librarian should be able to edit and manipulate the data, restock books, and set a book to be unavailable
- all the data entered should be stored in the database
- when a user, librarian or admin update the system, the database should be updated

#### Work plan:

1. design the schema for the database
2. implement the database using MySQL database
3. test the database manually first by populating it with dummy data
4. build the user and librarian login and registration
5. route each user to their dashboard based on their type
6. build the backend of the user functionalities, and connect it to the database
7. test that the database gets updated with the right data
8. build the backend of the admin functionalities
9. test that the database gets updated with the right data
10. testing the whole system
11. final deployment

#### Technologies used:

backend: JAVA

frontend: javaFX

database: MySQL

IDE: IntelliJ

This system will be a desktop application and will run locally on any device its downloaded on, the time expected to deliver this project is approximately 30 days.