**Proposal for Library Management System**

**Course:** Software Construction and Development

**Prepared by:**

* Name: MUHAMMAD AQEEL SAP ID: 56983
* Name: ABDUL MOIZ MANSAB SAP ID:44647

**1. Introduction**

A library is the heart of any school or college. Managing books, students, and staff manually can be slow and prone to mistakes. A Library Management System (LMS) makes this easier by automating these tasks. Students can quickly find the books they need, while staff can manage inventory and track issues and returns effortlessly, making the whole library experience smoother and more organized for everyone.

**2. Stakeholders**

| **Stakeholder** | **Purpose** |
| --- | --- |
| **Library Staff** | Issue and return books, maintain records, manage student accounts. |
| **Students/Users** | Borrow and return books, search catalog, view issued books. |
| **Administrators** | Manage staff accounts, supervise library operations, generate reports. |

**3. Main Features**

* **Book Management:** Add, update, remove, and categorize books.
* **User Management:** Create and maintain student/staff accounts with unique IDs.
* **Issue/Return Tracking:** Assign due dates, track returns, and calculate fines for overdue books.
* **Search Functionality:** Locate books quickly by title, author, or category.
* **Reports & Notifications:** Generate usage/fine reports and notify users of due/overdue books.
* **Security & Authentication:** Protect user records and ensure only authorized access.

**4. Functional Requirements**

| **Feature** | **function** | **Requirement Specification** |
| --- | --- | --- |
| **Book Management** | Add new books | Staff shall add books with details (title, author, category, quantity). |
|  | Update existing books | Staff shall edit or update book details when required. |
|  | Remove books | Staff shall delete outdated or damaged books from the catalog. |
| **User Management** | Add new users | Admin shall add new students or staff with unique IDs. |
|  | Update user information | Admin shall modify user details such as name, class, or role. |
|  | Remove users | Admin shall remove inactive or graduated users from the system. |
| **Issue/Return Management** | Issue books | Staff shall issue books with assigned due dates. |
|  | Return books | Staff shall record returned books and updates their availability. |
|  | Overdue tracking | System shall automatically calculates fines for overdue books. |
| **Search Functionality** | Search by title, author, or category | Users shall search and filter books using multiple criteria. |
| **Reports & Notifications** | Generate usage reports | Admin shall generate reports for book usage, fines, and user activity. |
|  | Notify overdue books | System shall send automated reminders about due/overdue books. |
| **Security & Authentication** | User login | Only authorized staff shall access system features. |
|  | Data integrity | It shall ensures records cannot be altered without permission. |