DESIGN DOCUMENT

1. Introduction

This document outlines the design details for the ……...project. It describes the system structure, components, class design, and user interface layout to guide development.

2. System Overview
3. Architecture Diagram:
4. Use Case Diagram
(Use diagramming tools such as Draw.io)

Sample

Actors:

- *Admin*
- *Student*

Use Cases:

- *Login*
- *Register*
- *Search Book*
- *Issue Book*
- *Return Book*
- *View Book List*
- *Generate Report*s

Use Case: Issue Book

- *Actor: Librarian*
- *Preconditions: Book available, User eligible*
- *Basic Flow:*
1. *Select user*
2. *Search book*
3. *Issue book*
- *Alternate Flow: Book not available → display error*
- *Postconditions: Book marked as borrowed, transaction recorded*

(Repeat for: Login, Return Book, Search Book, Register User, etc.)

5. Class Diagram
Including Class Descriptions:
6. Database Design
Table Structure
7. UI Design / Wireframes

Include mockups of key screens:

- Login screen
- Admin dashboard
- Student dashboard
- Book search and issue form

(Use Figma, Balsamiq,….

8. Technology Stack

9. Security and Validation

- Input validation on all fields
- Login authentication
- Exception handling for DB and null values
- Role-based access control

10. Limitations and Assumptions

- Only Admins can issue/return books
- Max 5 books per student
- No real-time notifications
- No barcode scanning

11. Appendices (Optional)

- Glossary of terms (ISBN, JDBC, etc.)
- References (Java documentation, tutorials, textbooks)

End of Design Document