EX. NO.: 02	SOFTWARE REQUIREMENT SPECIFICATION

AIM

To write a software requirements specification for the book bank system.

SOFTWARE REQUIREMENT SPECIFICATION

1. INTRODUCTION

1.1 PURPOSE

- This document defines the functional and non-functional requirements of book bank system.
- The Book bank system includes the following:
  i. Tracking book availability and browsing history.
  ii. Automates the issue and return process.
  iii. Personalized book recommendations.
  iv. Ai-based demand prediction.

1.2 DOCUMENT CONVENTION

- This document follows IEEE 830 1998 SRS standards.

1.3 INTENDED AUDIENCE & READING SUGGESTIONS

- The intended audience for a book bank system includes:
  i. Software developers
  ii. Project managers
  iii. System Administrators
  iv. Students
  v. Faculty advisors

1.4 PRODUCT SCOPE

- A book bank system's product scope encompasses the following:
  i. Managing a collection of textbooks and resources.
  ii. Enabling students to access for a nominal fee.
  iii. Facilitating online registration, reservation and retrieval of books.

1.5 REFERENCES

- "Book Bank Scheme I" launched by Adi Dravidar and Tribal welfare Department in TN.

- "Online Book Bank Monitoring System" project at University of Makerere(2005).

2. OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

Web based application is designed to streamline book availability tracking, automate the book issue and return process, facilitate online registration and reservation, and enable easy retrieval of books. Additionally, it generates reports on inventory levels and provides insights into student's borrowing history.

2.2 PRODUCT FUNCTIONS

- The core functionality of book-bank system includes the following:
  i. User management: Ability to manage user accounts(students and librarians).
  ii. Authentication and data privacy.
  iii. Online registration and reservation of books.
  iv. Automated inventory management based on book availability and usage.
  v. User-friendly interface and mobile accessibility.

2.3 USER CLASSES AND CHARACTERISTICS:

- The system has two main user classes:
  i. Students, who can search, borrow, reserve books, and view history.
  ii. Librarians, who manage inventory, track records, and generate reports, each with role-based access.

2.4 OPERATING ENVIRONMENT

- The book bank system will run on the following environment:
  i. Operating system: Windows/ Linux/ macOS
  ii. Processor: Minimum 2.5GHz, RAM: Min 4GB
  iii. Web server: Apache or cloud-based hosting
  iv. Internet connection: Min 5Mbps for smooth access
  v. User Devices: Desktop, Laptop, Tablet or smartphone
- This setup ensures smooth performance security and accessibility for all users.

2.5 DESIGN AND IMPLEMENTATION

- For the implementation of book bank system, following tech-stack can be use.
  i. Front-end: HTML, CSS, JavaScript(React.js)
  ii. Back-end: Java Spring Boot
  iii. Storage: Postgre SQL

2.6 ASSUMPTION & DEPENDENCY

i. For users: Internet enabled devices, Have a modern web browser.
ii. For developers: Periodic maintenance & regular updates.

3. SPECIFIC REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

i. User registration, login, and role-based access (students, librarians).
ii. Real-time book availability tracking and search.
iii. Automated book issue, return, and due-date reminders.
iv. Online book reservation and notifications.
v. AI-based book recommendations and demand prediction.
vi. Reports on inventory and borrowing history.

3.2 EXTERNAL INTERFACE REQUIREMENTS

- User Interface: Responsive web UI.
- Hardware Interface: Supports barcode scanners/RFID (if applicable).
- Software Interface: Uses Spring Boot (backend), React (frontend), PostgreSQL (database).
- Communication Interface: RESTful APIs for frontend-backend communication.

3.3 SYSTEM FEATURES

- Secure authentication and role-based access.
- AI-powered recommendations and analytics.
- Real-time inventory updates.

3.4 NON- FUNCTIONAL REQUIREMENTS

- Security: Data encryption and secure authentication.
- Usability: Simple and user-friendly interface.
- Scalability: Supports future library expansions.

3.5 PERFORMANCE REQUIREMENTS

- Faster response time for book search.
- Handles a greater number of concurrent users.
- API uptime ≥ 99%.

RESULT

Thus, the Software Requirement Specification for book bank system was written successfully.