

Library Management System



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Revision History

Name	Date	Reason For Changes	Version
Req. gathering	15/072024	Gathering & analyzing software requirements specification.	1
System analysis	17/07/2024	Inserting in depth analysis with necessary diagrams.	2

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Online System for National School Libraries

1. Introduction

1.1 Purpose

The main purpose of this web application is to enhance the efficiency and effectiveness of managing school libraries across Sri Lanka. It aims to minimize book wastage, improve accessibility to educational resources, provide necessary equipment and knowledge for students and teachers, and enhance overall educational productivity.

1.2 Scope

The scope of this project covers the development of a comprehensive software solution aimed at addressing the specific needs of Sri Lankan national school libraries. It includes functionalities for inventory management, quality control, distribution logistics, and student and teacher engagement.

1.3 Product Perspective

This web application system will integrate with existing library management systems and databases. It will provide a user-friendly interface for stakeholders involved in the library supply chain, including students, teachers, librarians, and government agencies.

1.4 Product Functions

Key functions of the web application include:

- Inventory management
- Quality assurance (QA)
- Distribution, planning, and tracking of books and other educational resources
- Student and teacher registration and engagement
- Reporting and feedback mechanism
- Government advisory services for libraries

1.5 User Characteristics

Users of the application will include students, teachers, librarians, government officials, advisers, and administrative staff involved in educational management. The application will be user-friendly, and users with different levels of technical expertise will be able to use it effortlessly.

1.6 Limitations

While the web application aims to optimize library management processes, there may be limitations such as network connectivity issues, data accuracy dependencies, and regulatory constraints.

1.7 Assumptions and Dependencies

With the development of this application, creators assume access to reliable data sources, cooperation from relevant stakeholders, and adherence to regulatory requirements governing library management and education in Sri Lanka.

2. Overall Description

2.1. Product Perspective

The system is designed to streamline operations and management processes for both National School Libraries and Fertilizer Distribution for Farmers, ensuring efficient management, distribution, and regulatory compliance.

2.2. Product Features

- Catalog and Inventory Management
- Maintain centralized databases for resources.
- Conduct quality checks and generate plans based on demand.
- User Management
- Enable user registration, profile management, and notifications.
- Tracking and Reporting
- Provide real-time tracking and generate comprehensive reports.

2.3. User Classes and Characteristics

- Librarians, Teachers, Students
- Manage and use library resources.
- Government Officials, Farmers, Logistics Personnel
- Oversee regulatory compliance, place orders, and manage distribution.

2.4. Operating Environment

Web-based platform accessible via mobile phones and desktops with internet support.

Compatibility with existing hardware and software infrastructure.

2.5. Design and Implementation Constraints

Adhere to data privacy and government regulations.

Consideration of limited internet connectivity.

2.6. Assumptions and Dependencies

Reliable internet access.

Collaboration with external entities for regulatory compliance and integration.

2.7. System Features

I. User Registration and Authentication

II. User Roles and Permissions

III. Catalog and Inventory Management

IV. Order Placement, Borrowing, and Tracking

V. Distribution and Scheduling

VI. Shipment Tracking and Due Dates

VII. User Profile and History

VIII. Quality Checks, Reviews, and Ratings

IX. Notifications and Reminders

X. Reporting and Analytics

XI. Integration with External Systems

XII. Accessibility and Multilingual Support

XIII. Security and Privacy

XIV. System Administration

2.8. External Interface Requirements

I. User Interfaces

Web and mobile interfaces for user interaction.

II. Hardware Interfaces

Integration with GPS devices and other relevant hardware.

III. Software Interfaces

Integration with government databases, library management systems, and payment gateways.

IV. Communications Interfaces

Real-time data synchronization and updates.

2.9. Other Nonfunctional Requirements

I. Performance Requirements

Handle concurrent user requests without performance degradation.

Load data and generate reports within acceptable timeframes.

II. Safety Requirements

Ensure secure handling and storage of data.

III. Security Requirements

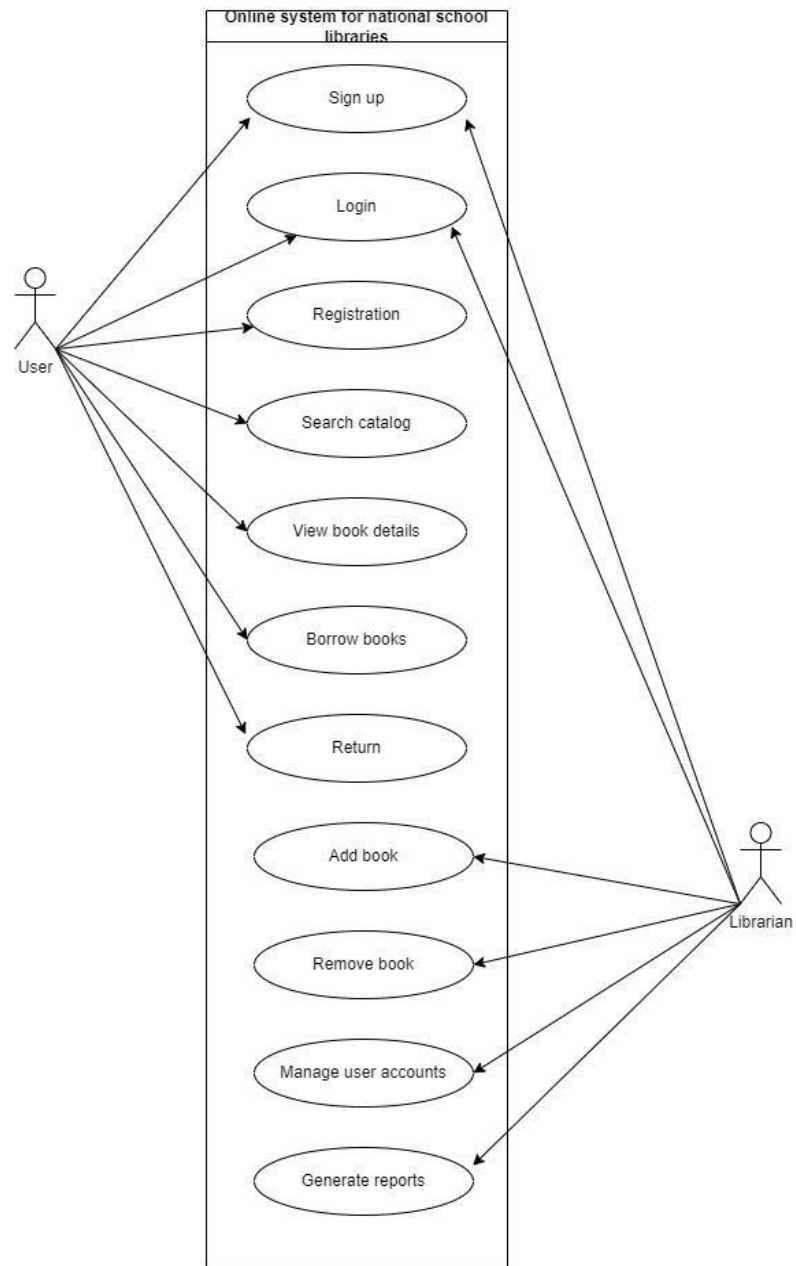
Implement robust authentication and authorization mechanisms.

IV. Software Quality Attributes

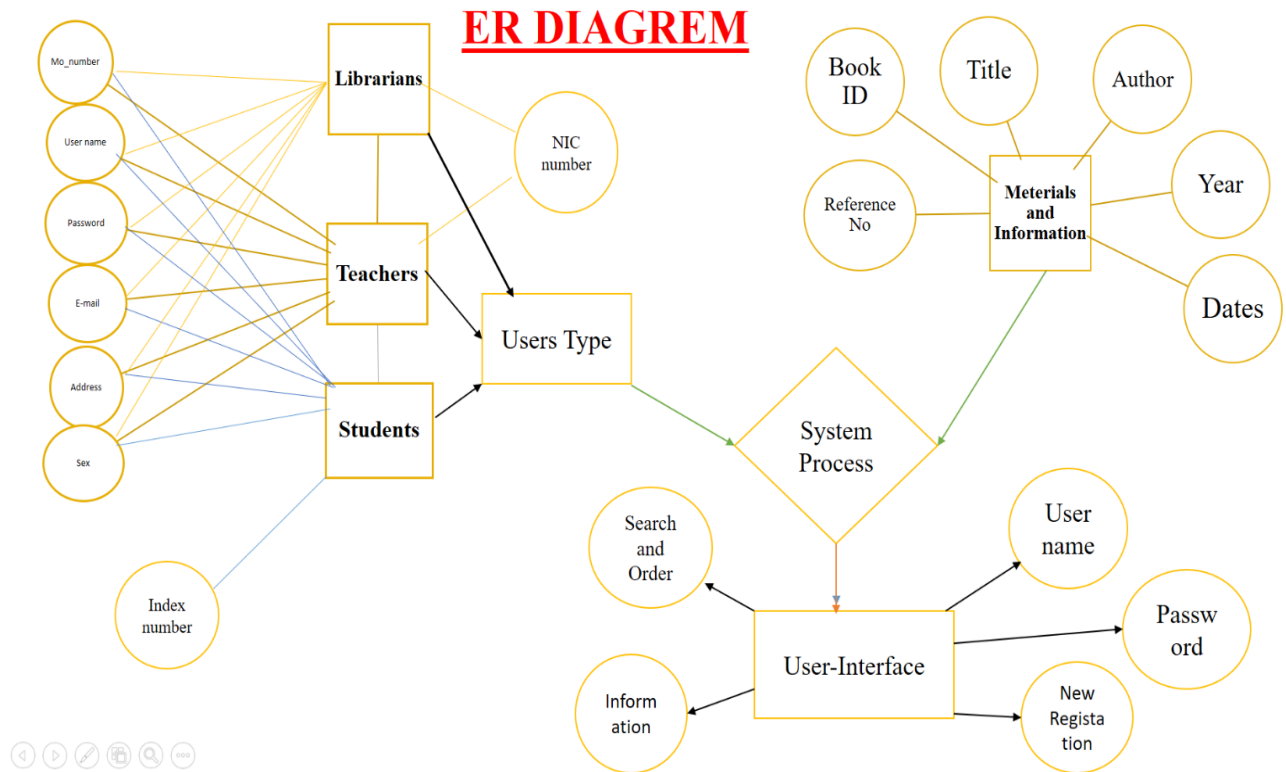
Ensure reliability, maintainability, and scalability of the system.

3.System Design

3.1. User Cases Diagram



3.2 ER Diagram



3.3 Block Diagram

