Library Management System

Interim Report

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Chapter 1: Introduction

1.1 Project Overview

The Library Management System (LMS) is designed to manage the functionalities related to a library's operations, including borrowing and returning books, managing user memberships, tracking inventory, and generating reports. This system helps streamline administrative tasks and enhance the user experience by automating manual processes, allowing librarians and users to access information quickly and efficiently.

1.2 Objectives

i. To automate the library's day-to-day operations.
ii. To enable easy book borrowing and returning processes.
iii. To keep an up-to-date record of available and borrowed books.
iv. To manage users' memberships, including student and staff registrations.
v. To generate various reports related to book usage, inventory, and user activity.

Chapter 2: Similar Systems

2.1 Comparative Analysis

Before designing the system, several existing library management systems were analyzed to understand their strengths and weaknesses:

1.Koha

Koha is an open-source integrated library system. It offers features such as book borrowing, cataloging, and reporting, but it requires heavy technical knowledge for setup and maintenance.

2.Evergreen

Evergreen is a highly scalable library system. It handles multi-branch libraries but might be too complex for small-to-medium institutions.

3.SLiMS (Senayan Library Management System)

SLiMS is a simple-to-use system, but it lacks customizable reports and advanced user management functionalities.

2.2 Lessons Learned

From the analysis, the following were identified as key features and limitations:

I. **Key Features to Implement**: Book tracking, membership management, reporting features, and an intuitive user interface.
II. **Key Challenges to Avoid**: Excessive complexity in user management, difficult setup processes, and lack of mobile support.

Chapter 3: Solution

3.1 Functional Requirements

3.1.1 User Management

I. Register and manage different user types (e.g., students, staff).
II. Allow users to view available books and check borrowing history.

3.1.2 Book Inventory Management

I. Add, update, and remove books from the library system.
II. Track book availability, categories, and location in the library.

3.1.3 Borrow and Return Books

I. Enable users to borrow books and automatically update the inventory.
II. Provide due date reminders and penalty management for late returns.

3.1.4 Search Functionality

I. Allow users to search for books by title, author, ISBN, or category.

3.1.5 Report Generation

I. Generate reports on borrowed books, overdue books, inventory status, and user activity.

3.2 Non-functional Requirements

3.2.1 Performance

The system should handle up to 100 concurrent users without noticeable slowdowns.

3.2.2 Security

User data, especially passwords and borrowing histories, should be encrypted and stored securely.

3.2.3 Usability

The interface should be user-friendly, even for non-technical users, with clear navigation and instructions.

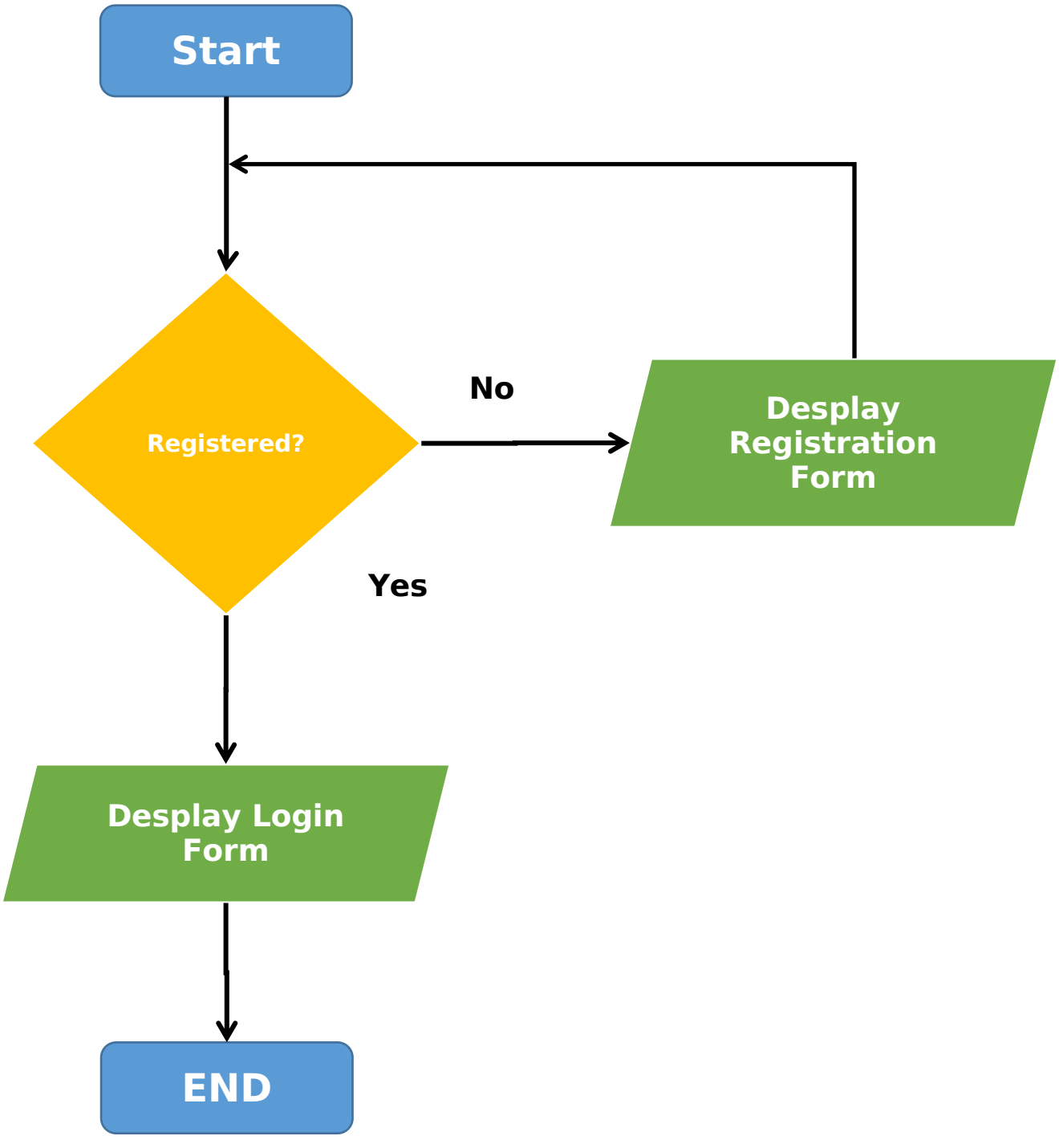
3.2.4 Scalability

The system should be able to handle growth in the number of books and users over time.

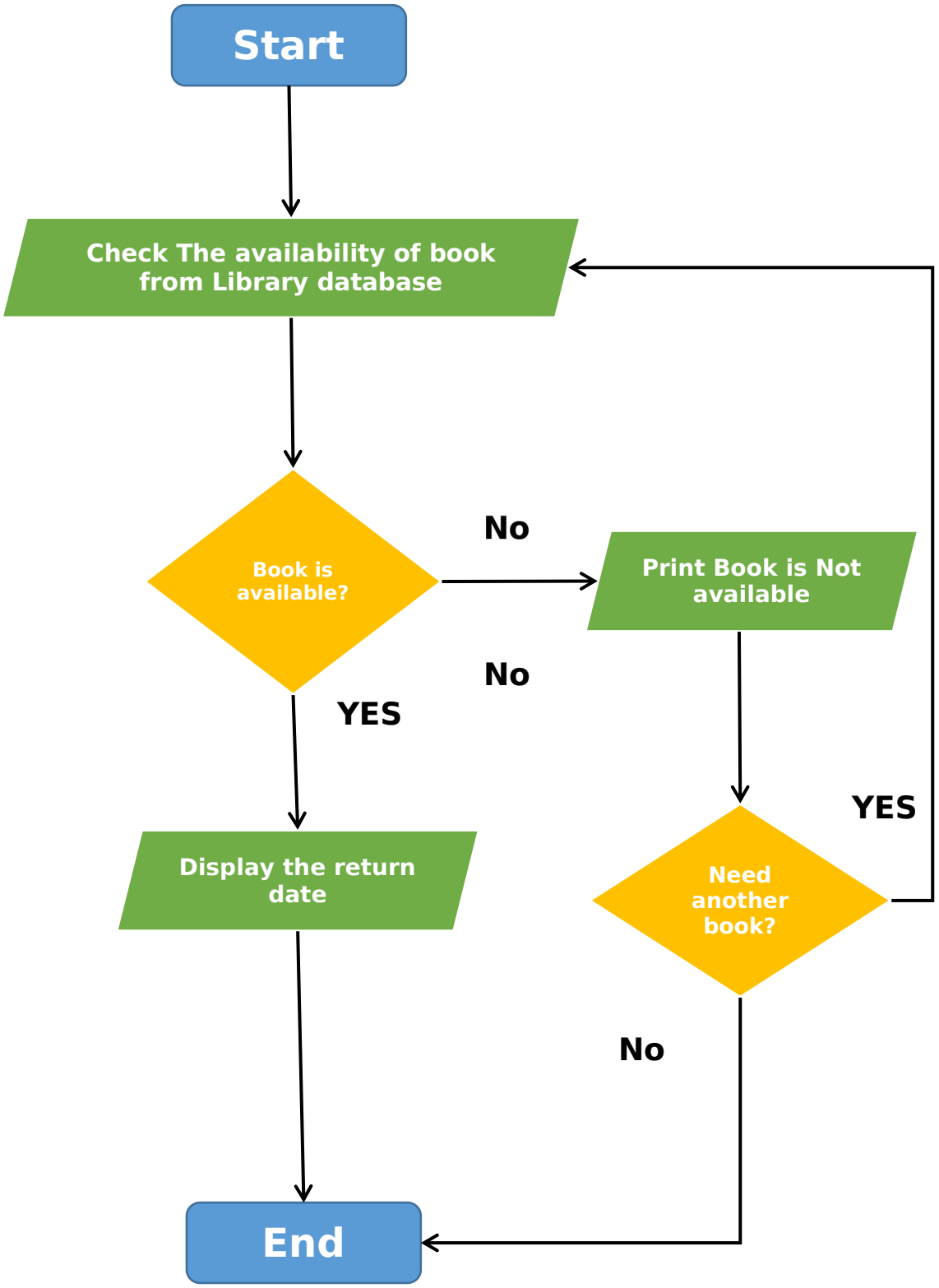
3.3 Flowcharts

Below are sample flowcharts representing key functionalities. Replace placeholders with your system's actual flowcharts.

3.3.1 User Registration Flowchart



3.3.1 Book Borrowing Flowchart



3.3.2 Book Returning Flowchart