

# Software Requirements Specification

## **Library System**

Date	Changes	Version
09-15-17	Initial Documentation	1.0
09-22-17	Updated Documentation	2.0

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# 1. Introduction

## 1.1 Purpose

The purpose of this document is to explain the requirements and features of our library program.

## 1.2 Scope

This project is designed for library staff and patrons of places with multiple libraries (such as universities). Staff members will be able to login into the system and update the library. This will be to keep an accurate record of what is actually available, due, missing books, new books, or books that were removed. Library users will be allowed to make an account. Users will also be allowed to search to see if the book they want is available, and if it is, which library the book is located at. If not, the system will tell the user if the book is checked out or if it is not in the database. Users can search through the catalog by title, genre, or ISBN and specify a certain library if they choose. Each book will have a short summary or description.

## 1.3 Definitions, acronyms, and abbreviations

RAM- Random Access Memory

ISBN- International Standard Book Number

## 1.4 Overview

The rest of this document will cover the overall description, the specific requirements, and an appendix for the system. The overall description will explain the overall use and purpose of the system. The specific requirements will express the details and design structure of the system and its features. The appendix includes some examples of what the system is expected to look like.

# 2. Overall Description

## 2.1 Product perspective

### 2.1.1 System Interfaces

The Library System will not require any additional systems to run on Windows.

### 2.1.2 User Interfaces

The user interface will consist of using the mouse/trackpad and keyboard of a computer to help navigate the functions.

#### 2.1.3 Hardware Interfaces

Windows computers are able to run the Library System.

#### 2.1.4 Software Interfaces

The Library System is only available on Windows computers.

#### 2.1.5 Communications Interfaces

This should allow staff to approve the registration of other staff members that will have access to update of the system.

#### 2.1.6 Memory

The Library System will just have a simple graphical design and does not take up much RAM.

#### 2.1.7 Operations

Operations for the system include return to main menu to select type of search to use, rating of the books, descriptions of the book.

#### 2.1.8 Site Adaptation Requirements

There are no adaptations for any installations.

## 2.2 Product functions

This system's purpose will be to keep track of books, update the book library and provide the book's information for the users.

## 2.3 User characteristics

This library system will be similar to existing library systems in a much simpler context. There will only have basic functions, so a user which has a basic knowledge on handling simple system are able to easily handle the system.

## 2.4 Constraints

This system will support Windows computers only. The program will only work when the user has access to the local network.

## 2.5 Assumptions and dependencies

Since this system depends on the database, as long as the database is operating without any problems, the system will work fine on all Windows operating system.

### 3. Specific requirements

#### 3.1 External interface requirements

Both users and admins will be able to see the login page (Appendix 4.1) when the system starts. They are then required to provide both their user ID (email) and password to use the features provided by the system.

For users, the search layout (Appendix 4.2) will show after logging in. There they can search for books, either by title or genre, and borrow the books of their choice. For admins, a similar layout with similar features will appear. However, admins will have the ability to add, delete and update books.

#### 3.2 Functions

##### 3.2.1 Phase 1:

##### 3.2.1.1 Account System

3.2.1.1.1 Accounts allow users to access the library

3.2.1.1.2 Associated functional requirements

3.2.1.1.2.1 The registration form will include:

3.2.1.1.2.1.1 Name

3.2.1.1.2.1.2 Email

3.2.1.1.2.1.3 Password

3.2.1.1.2.1.4 Phone Number

3.2.1.1.2.1.5 Address

3.2.1.1.2.2 The login form will Include:

3.2.1.1.2.2.1 Email

3.2.1.1.2.2.2 Password

3.2.1.1.2.3 Account Types:

3.2.1.1.2.3.1 Admin

3.2.1.1.2.3.2 User

##### 3.2.1.2 Admin Functions

3.2.1.2.1 Additional functions the admins have to the system

3.2.1.2.1.1 Add Books

3.2.1.2.1.2 Delete Books

3.2.1.2.1.3 Update Books

3.2.1.2.1.4 Bug Reports

##### 3.2.1.3 Tracking System

3.2.1.3.1 This system holds the location and other information about the books

#### 3.2.1.3.2 Associated functional requirements

##### 3.2.1.3.2.1 The tracking system will include:

###### 3.2.1.3.2.1.1 Description of book

###### 3.2.1.3.2.1.2 Location of book

###### 3.2.1.3.2.1.2.1 Library

###### 3.2.1.3.2.1.2.2 Shelf

#### 3.2.1.4 Search System

3.2.1.4.1 This provides users with different methods to search for a book and uses Tracking System to provide information about the book

##### 3.2.1.4.2 Associated functional requirements

3.2.1.4.2.1 The search system will be able to search for (in all libraries or in a select one):

###### 3.2.1.4.2.1.1 Title

###### 3.2.1.4.2.1.2 Genre

###### 3.2.1.4.2.1.3 ISBN

#### 3.2.1.5 Bug Report

3.2.1.5.1 This allows the users to report bugs

##### 3.2.1.4.2 Associated functional requirements

3.2.1.4.2.1 Description of bug

### 3.2.2 Phase 2:

#### 3.2.2.1 Rating System

3.2.2.1.1 This allows users to provide feedback on what they thought about the book.

##### 3.2.2.1.2 Associated functional requirements

###### 3.2.2.1.2.1 Scale (1-10)

###### 3.2.2.1.2.2 Review

#### 3.2.2.2 Checkout System

3.2.2.2.1 This allows users to check out a book online and pick it up in person.

##### 3.2.2.2.2 Associated functional requirements

###### 3.2.2.2.2.1 Selects a certain copy of a book

###### 3.2.2.2.2.2 Makes a return by date for 2 weeks later

### 3.2.3 Future Implementations

#### 3.2.3.1 Web-based system

3.2.3.1.1 This allows users to access the system online

##### 3.2.3.1.2 Associated functional requirements

- 3.2.3.1.2.1 Web Hosting
  - 3.2.3.1.2.2 New front end
- 3.2.3.2 Location System
  - 3.2.3.2.1 This shows the user where a selected library is located
  - 3.2.3.2.2 Associated functional requirements
    - 3.2.3.2.2.1 Map with the libraries
    - 3.2.3.2.2.2 Clicking on library sends user to google maps for directions

### **3.3 Performance requirements**

This system should be able to run without any fatal issues.

### **3.4 Logical database requirements**

A database is required for this system to contain all the information of the books

### **3.5 Design constraints**

The main constraints of this system is that it will only be available for Windows Operating Systems, and that the database is functioning without any errors.

### **3.6 Software system attributes**

#### **3.6.1 Reliability**

The system should be reliable enough that you can log in and search for a book without hitting any bugs or errors.

#### **3.6.2 Availability**

The system should be available as long as the servers the database is on are up and reachable.

#### **3.6.3 Security**

Input into the searches will be sanitized to avoid table Manipulation. Passwords will be secure in a non-plain text form.

#### **3.6.4 Maintainability**

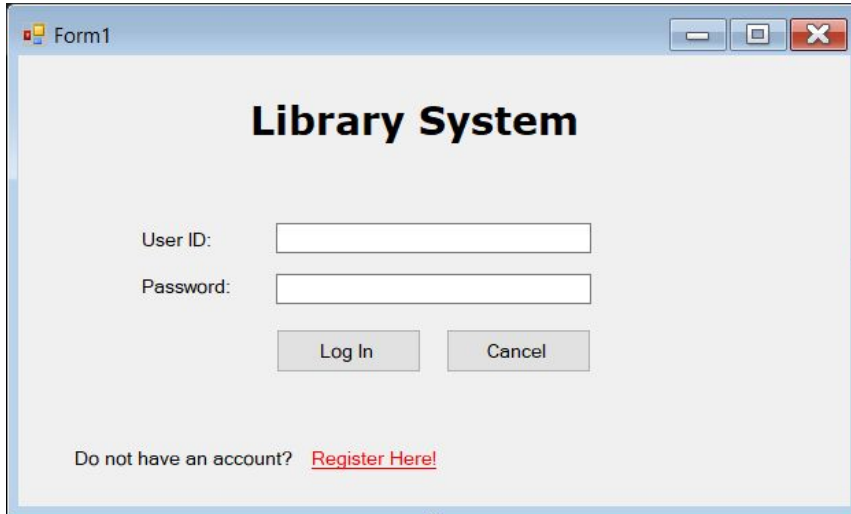
The crucial part of the system is the database. Keeping it correct to the current inventory of books will be the main form of updating. Future ideas can vary from easy to implement to hard( like the location tracking system)

### 3.6.5 Portability

This system is designed to run on computers on a local network, so it is very limited on portability.

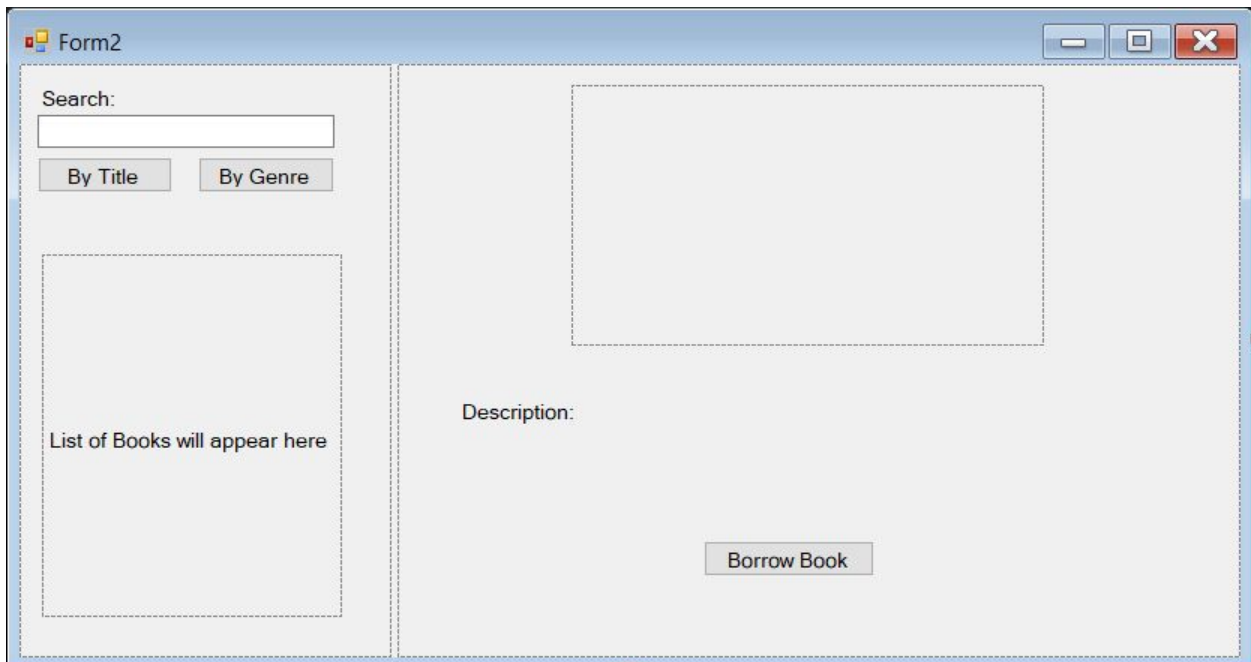
## 4 Appendix

### 4.1 Phase 1 Login Mockup



A screenshot of a Windows-style application window titled "Form1". The window has a light gray background and a blue title bar with standard minimize, maximize, and close buttons. The main content area is titled "Library System" in a large, bold, black font. Below the title, there are two input fields: "User ID:" and "Password:". Below these fields are two buttons: "Log In" and "Cancel". At the bottom of the window, there is a link that says "Do not have an account? [Register Here!](#)".

### 4.2 Phase 1 Search Layout



A screenshot of a Windows-style application window titled "Form2". The window has a light gray background and a blue title bar with standard minimize, maximize, and close buttons. The main content area is divided into two sections. On the left, there is a "Search:" section with a text input field and two buttons: "By Title" and "By Genre". Below this is a large dashed rectangular box containing the text "List of Books will appear here". On the right, there is a "Description:" section with a large dashed rectangular box. Below the description box is a "Borrow Book" button.