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# Software Requirements Specification

for

## Library Development

Version <4.0>

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## Contents

CONTENTS	II
REVISIONS	II
1 INTRODUCTION	1
1.1 DOCUMENT PURPOSE	1
1.2 PRODUCT SCOPE	1
1.3 INTENDED AUDIENCE AND DOCUMENT OVERVIEW	1
1.4 DEFINITIONS, ACRONYMS AND ABBREVIATIONS	1
1.5 DOCUMENT CONVENTIONS	1
1.6 REFERENCES AND ACKNOWLEDGMENTS	2
2 OVERALL DESCRIPTION	2
2.1 PRODUCT OVERVIEW	2
2.2 PRODUCT FUNCTIONALITY	3
2.3 DESIGN AND IMPLEMENTATION CONSTRAINTS	3
2.4 ASSUMPTIONS AND DEPENDENCIES	3
3 SPECIFIC REQUIREMENTS	4
3.1 EXTERNAL INTERFACE REQUIREMENTS	4
3.2 FUNCTIONAL REQUIREMENTS	4
3.3 USE CASE MODEL	5
4 OTHER NON-FUNCTIONAL REQUIREMENTS	6
4.1 PERFORMANCE REQUIREMENTS	6
4.2 SAFETY AND SECURITY REQUIREMENTS	6
4.3 SOFTWARE QUALITY ATTRIBUTES	6
5 OTHER REQUIREMENTS	7
APPENDIX A – DATA DICTIONARY	8
APPENDIX B - GROUP LOG	9

## Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Draft #1	All authors of the document	Creation of the SRS Document.	02/05/2020
Draft #2	All authors of the document	Editing in accordance with the clients' requests.	03/02/2020
Draft #3	All authors of the document	Added user stories, activity diagram and updated use-case diagram	05/15/2020

Draft #4	All authors of the document	Removed payment system, night-mode feature, blacklist/penalty system. Changed rating system to feedback system.	04/30//2021
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# 1. Introduction

The Library Management System is a software used by customers of the Library, which shows and keeps track of their activities and purchases in the Library. This is a convenient and accessible system that aids the customers in managing their Library visits.

## 1.1. Document Purpose

The main purpose of this document is to display the requirements of the Library Management System software. The document gives a detailed description of both functional and non-functional requirements proposed by the clients. It is developed after a number of consultations with clients and considering the complete requirement specifications of the given project. The final product of the team will be meeting the requirements of this document in order to satisfy the clients.

## 1.2. Product Scope

The software serves as an interface for library customers and to manage and check their activities in the library. The software provides components that can be personalized according to the user's preferences, which in turn can be of convenience to the customers, especially since they can access borrowed history, and as well as keep track of the status of their borrowed books. The system's database includes the availability of all the books that can be found in the library, which makes the overall usage of the software effortless and accessible.

## 1.3. Intended Audience and Document Overview

This project is intended for the customers of our client, which, in this case, is the Library Developers. The software is of use to the users of the Library, especially to students and readers of all professions. It is also useful for the Library staff and management, as they can access book recommendations given by the customers through the software, as well as update the book and customer database.

## 1.4. Definitions, Acronyms and Abbreviations

ATM - Automated Teller Machine

MySQL - Structured Query Language. A relational database used to store data for websites.

OS - Operating System

PDF - Portable Document Format. A digital file format.

PHP - PHP: Hypertext Preprocessor. A programming language. An open source scripting language.

CSS - Cascading Style Sheets. A programming language to style an HTML document.

Client/s - The company who conceptualized the Library being developed in this document.

Customer/s - Users of the Library website and application being developed in this document. May refer to students, all readers of all professions, etc.

e-book - Electronic version of a printed book.

Software - The website and application being developed in this document.

User/s - Same definition as customers.

## **1.5. Document Conventions**

This document follows the IEEE formatting requirements. The document makes use of Arial with font size 11 for text and 14 for headings and subheadings throughout the document. Document text should be single spaced and must have a margin of 1 inch. The main points in an outline are typed in bold.

## **1.6. References and Acknowledgments**

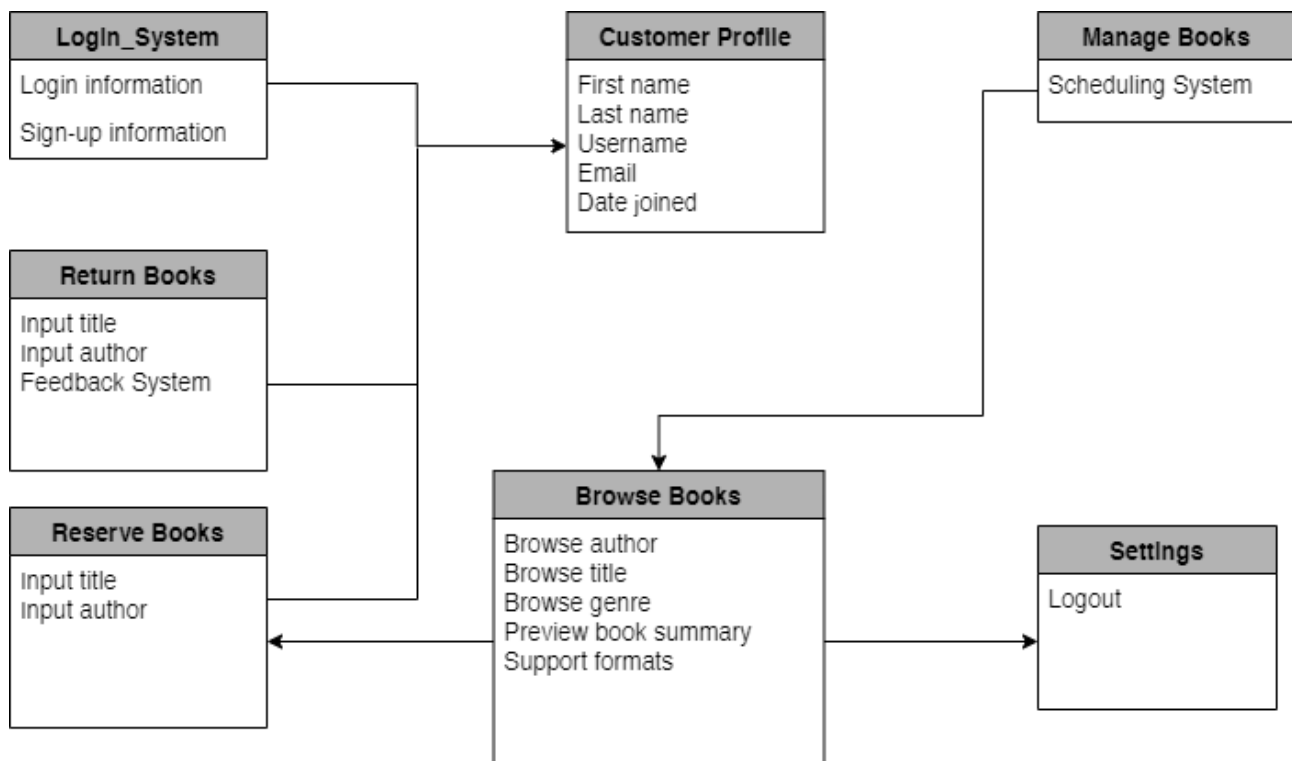
Bandakkanavar, R. (2018, July 4). Software Requirements Specification document with example. Retrieved February 3, 2020, from <https://krazytech.com/projects/sample-software-requirements-specificationsrs-report-airline-database>

## 2. Overall Description

### 2.1. Product Overview

A library management system will store the following information:

- **Customer Information:**  
It includes the full name of the customer, username, email address, and when the customer registered to the library.
- **Book description:**  
It includes the title, genre, author, and ratings of the book in the library found in the website, mobile application, and nearest library. The same details of the book will be used for the book that the customer wishes to donate to the library.



### 2.2. Product Functionality

#### LIBRARY MANAGEMENT SYSTEM

1. **Login System**
  - 1.1. Log-in
  - 1.2. Sign-up for new customers new to the system
2. **Customer Profile**

- 2.1. Full Name
- 2.2. Username
- 2.3. Email Address
- 2.4. Date Joined
- 3. **Browse Books**
  - 3.1. by Author, Title, Genre, Reviews
    - 3.1.1. Shows a preview of the book and plot summary
    - 3.1.2. Shows supported formats of the book (pdf, physical copy, ebook)
- 4. **Manage Books**
  - 4.1. Scheduling system (duration for borrowed books)
    - 4.1.1. Maximum of 3 books to borrow per day
- 5. **Reserve Books**
  - 5.1. Input book title and author
- 6. **Return Books**
  - 6.1. Input book title and author
  - 6.2. Feedback System
- 7. **Settings**
  - 7.1. Logout

## 2.3. Design and Implementation Constraints

The limitations of this software are:

1. Programming Language: Programming languages must be used are PHP, and HTML, and CSS..
2. Database: Database that should be used is MySQL.
3. Compatibility: Must be compatible with which OS or method on using the application, such as, Windows, Mac, Linux, or Mobile.
4. Server: Must handle numbers of log-ins at the same time or while using the application.

## 2.4. Assumptions and Dependencies

It is assumption of this website or application are:

1. There will be no software/database issues, especially on the implementation of codes and databases.
2. There will be fast enough internet connection to be connected to the server, application or website.
3. Users should use their account username and password correctly.
4. The database or cloud server should have enough storage to store e-books.
5. There will be terms and conditions to be given to users to read, the user should agree to these terms and conditions.
6. There will be updates to the application or website.

The dependencies of this application or website is that first, there should be the proper equipment to work on the tasks. Second, the admin should be knowledgeable about accessing the product. In terms of the procedure of tasks, it should be completed before the second task will start, however, in every task completed, there will be a recompiling and checking of the task to make sure that it is working. There will also be a checking of the application after all tasks are done before releasing it to testers or to the public.



## 3. Specific Requirements

### 3.1. External Interface Requirements

#### 3.1.1. User Interfaces

- Log-in and Sign-up
- Customer Profile
- Browse Books
  - Search
- Manage Books
  - Feedback
  - Return Book
- Book Reservation

##### 3.1.1.1. Hardware Interfaces

Minimum Specifications:

- 1 gigahertz (GHz) or faster processor or SoC.
- 1 gigabyte (GB) for 32-bit or 2 GB for 64-bit
- 6 GB for 32-bit OS 20 GB for 64-bit OS.
- DirectX 9 or later with WDDM 1.0 driver.

##### 3.1.1.2. Software Interfaces

The system will run on PC (Windows or Mac) and on mobile phones (Android and Apple).

### 3.2 Functional Requirements

**3.2.1 Login System** – When opening the system, two options will be shown to the user which is the Log-in button, for those who already have an account, and the Sign-up button for those who are new to the system. When the Sign-up button will be chosen by the user, it will ask for the personal information and will let them make a username and password. Otherwise, the page will be directed to the newsfeed. On the upper right corner, the five options, Profile, Notification, Books, Purchase and Settings, will be shown.

#### 3.2.2 Customer Profile

**3.2.2.1 User Information** - Personal information of the users such as the first name, last name, username, email address, and date registered will be displayed when opening this feature.

#### 3.2.3 Browse Books

**3.2.3.1 by Author, Title, Genre, Reviews** - The search bar allows the users to find the book they wanted to read as easily as possible. It can be filtered by genre, date published, author, and in alphabetical order.

**3.2.3.1.1** Shows a preview of the book and plot summary - A short summary of the book will be displayed along with the supported format which is also located below the cover of the book.

**3.2.3.1.2** Shows supported formats of the book (pdf, physical copy, ebook) - When browsing some books, the supported formats will be listed below the book cover.

### **3.2.4 Manage Books**

**3.2.4.1** Maximum of 3 books to borrow per day - The users will be limited to borrow 3 books per day only to give chance to others since you can't read all of the books borrowed at the same time.

**3.2.5 Reserve Books** – When borrowing a book, the user must make a reservation online so that there will be an assurance that the book is not yet borrowed before going to the store. The title and author must be listed. The user will be informed whether the book is available for reservation or not..

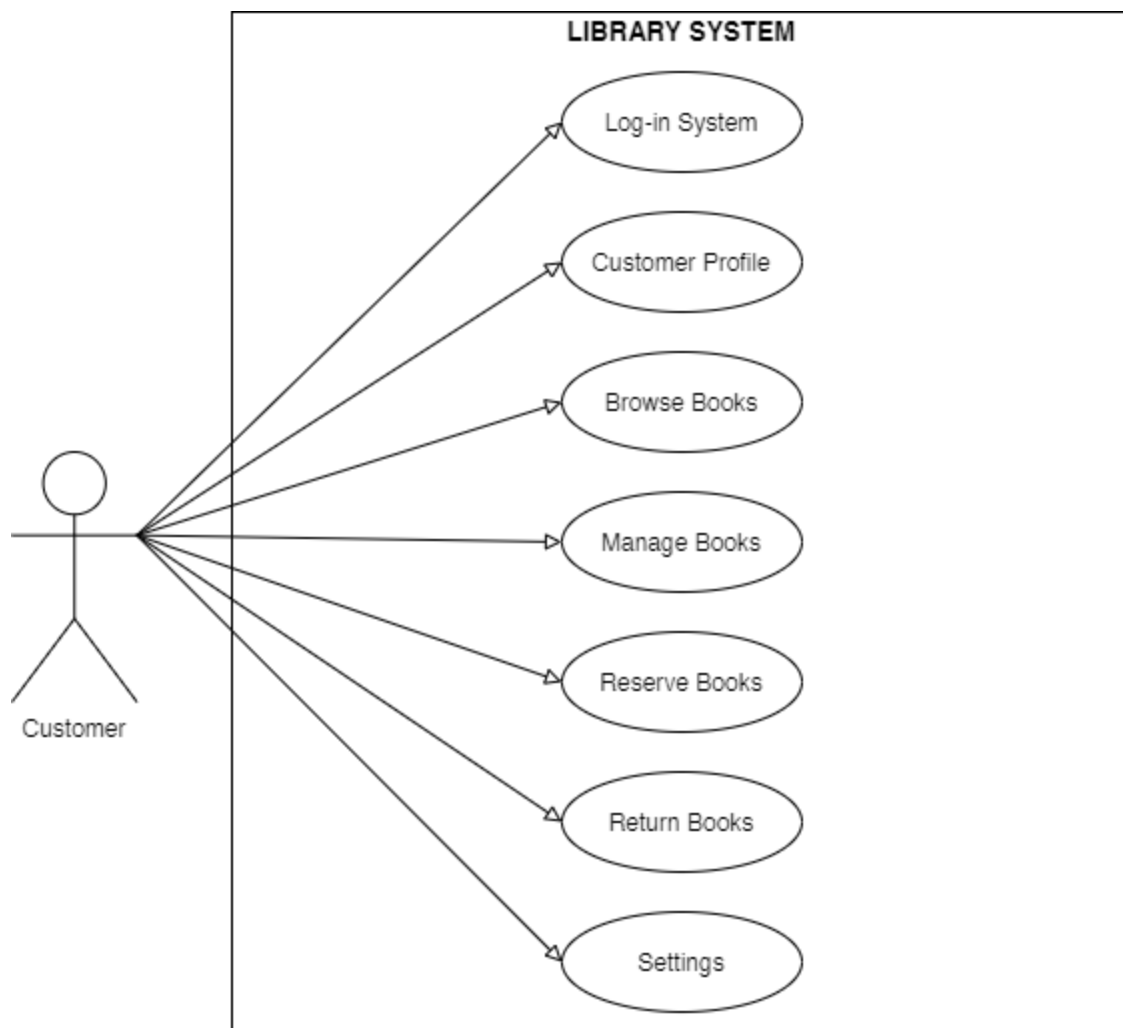
**3.2.6 Return Books** - The user returns the book by inputting the information such as author and title of the book.

**3.2.6.1 Feedback System(per book)** - After reading each book, the user will be able to leave a feedback after returning the book..

### **3.2.7 Settings**

**3.2.7.1 Logout** - The user will be able to log out of the website through the Settings navigation.

#### 4. Use Case Model



## Use Case #1 (U1)

Author – Okay, Regienald Jhames D.

Purpose - Customer Perspective

Requirements Traceability – Log-In System

Priority - High

Preconditions - The customer should have an account from the system.

Post conditions - The customer should be able to log in through the system.

Actors – Human

Extends – U2, U3, U4

Flow of Events

1. Basic Flow - Go to home page > Input User > Input Password > Click Log in

Includes – (N/A)

Notes/Issues – (N/A)

## Use Case #2 (U2)

Author – Okay, Regienald Jhames D.

Purpose - Customer Perspective

Requirements Traceability – Manage Books

Priority - High

Preconditions - The customer should be borrowing a book.

Post conditions - The customer should be able to track how many books they have, and review the books that they are borrowing.

Actors – Human

Extends – (N/A)

Flow of Events

2. Basic Flow - Log-in > Check Menu > Manage Books

Includes – U1

Notes/Issues – (N/A)

### Use Case #3 (U3)

Author – Okay, Regienald Jhames D.

Purpose - Customer Perspective

Requirements Traceability – Customer Profile

Priority - High

Preconditions - The customer should have an account from the system.

Post conditions - The customer should be able to view their profile and could also edit their profile..

Actors – Human

Extends – (N/A)

Flow of Events

3. Basic Flow - Log-in > Check Menu > Customer Profile

Includes – U1

Notes/Issues – (N/A)

## Use Case #4 (U4)

Author – Okay, Regienald Jhames D.

Purpose - Customer Perspective

Requirements Traceability – Browse Book

Priority - High

Preconditions - The customer should have an account from the system.

Post conditions - The customer should be able to search a book.

Actors – Human

Extends – (N/A)

Flow of Events

4. Basic Flow - Log-in > Check Menu > Browse Books > Search for a book

Includes – U1

Notes/Issues – (N/A)

Use Case #5 (U5)

Author – Okay, Regienald Jhames D.

Purpose - Customer Perspective

Requirements Traceability – Log Out System

Priority - High

Preconditions - The customer should have an account from the system.

Post conditions - The customer should be able to log out from the system.

Actors – Human

Extends – (N/A)

Flow of Events

5. Basic Flow - Log-in > Log-Out

Includes – U1

Notes/Issues – (N/A)



## Other Non-functional Requirements

### 4.1 Performance Requirements

The information is refreshed depending on whether updates have occurred or not in the software. The system shall respond to the member in no less than two to three seconds from the time of the submission of request. In the log-in system, the username and password should work the same with the users input. The data is saved in the database and can only be accessed by authenticated users. The system shall be allowed to take more time when doing large processing works. Response to view information shall take no longer than 3 seconds to appear on the screen. The overall performance of the software will be reliable and enable the users to work efficiently.

### 4.2 Safety and Security Requirements

For the safety and security of the application or website, the following should be met:

1. The user will create an account using a username/email and a password which will be saved in a secure database.
2. In case of unforeseen problems, such as disk crashes, server crashes, damage of database, there should be a recovery or back-up method to be implemented so that the data will be recovered or restored.
3. The accounts of the users should be linked to their emails or mobile numbers in case of hacking of account or forgotten password of an account.
4. The data input of the users, such as emails, phone numbers, addresses, etc. should be completely confidential and cannot be viewed in the user's profile.
5. There should be a protective or security algorithm embedded in the application or website, or servers, to prevent data breach.

### 4.3 Software Quality Attributes

- **Availability** - The availability of the software is easy and accessible for everyone.
- **Maintainability** - After the deployment of the project, if there are any errors that occur then it can be easily maintained by the software developer.
- **Portability** - The software can be deployed by any machine such as Android, iOS, Windows, etc.
- **Productivity** - The software shall be able to produce every desired result accurately and precisely.
- **Reliability** - The performance of the software is good and it is protected in case problems might occur.
- **Robustness** - If there would be any error that might occur in any window then it does not affect the whole system.

## Other Requirements

*<This section is Optional. Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>*

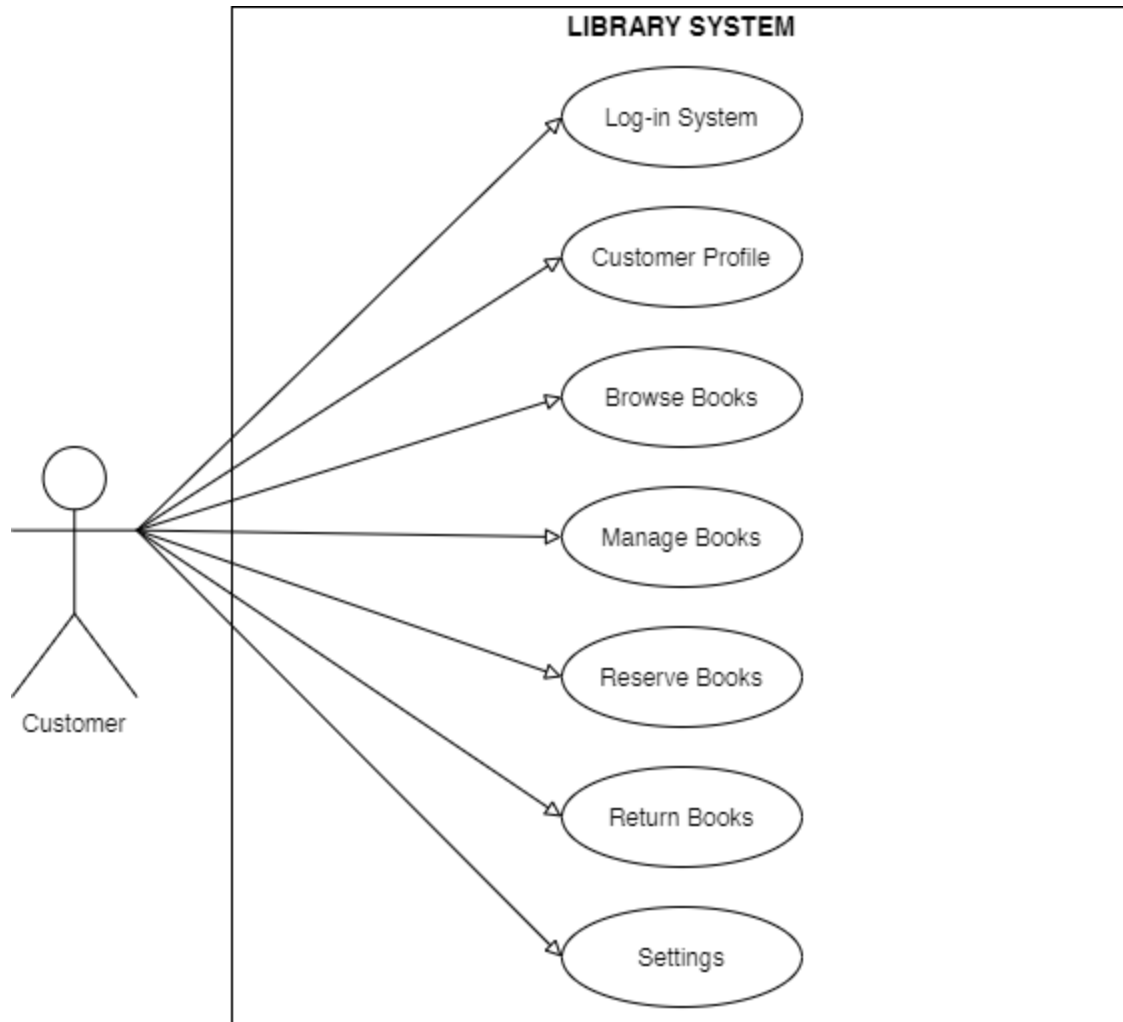
## Appendix A – Data Dictionary

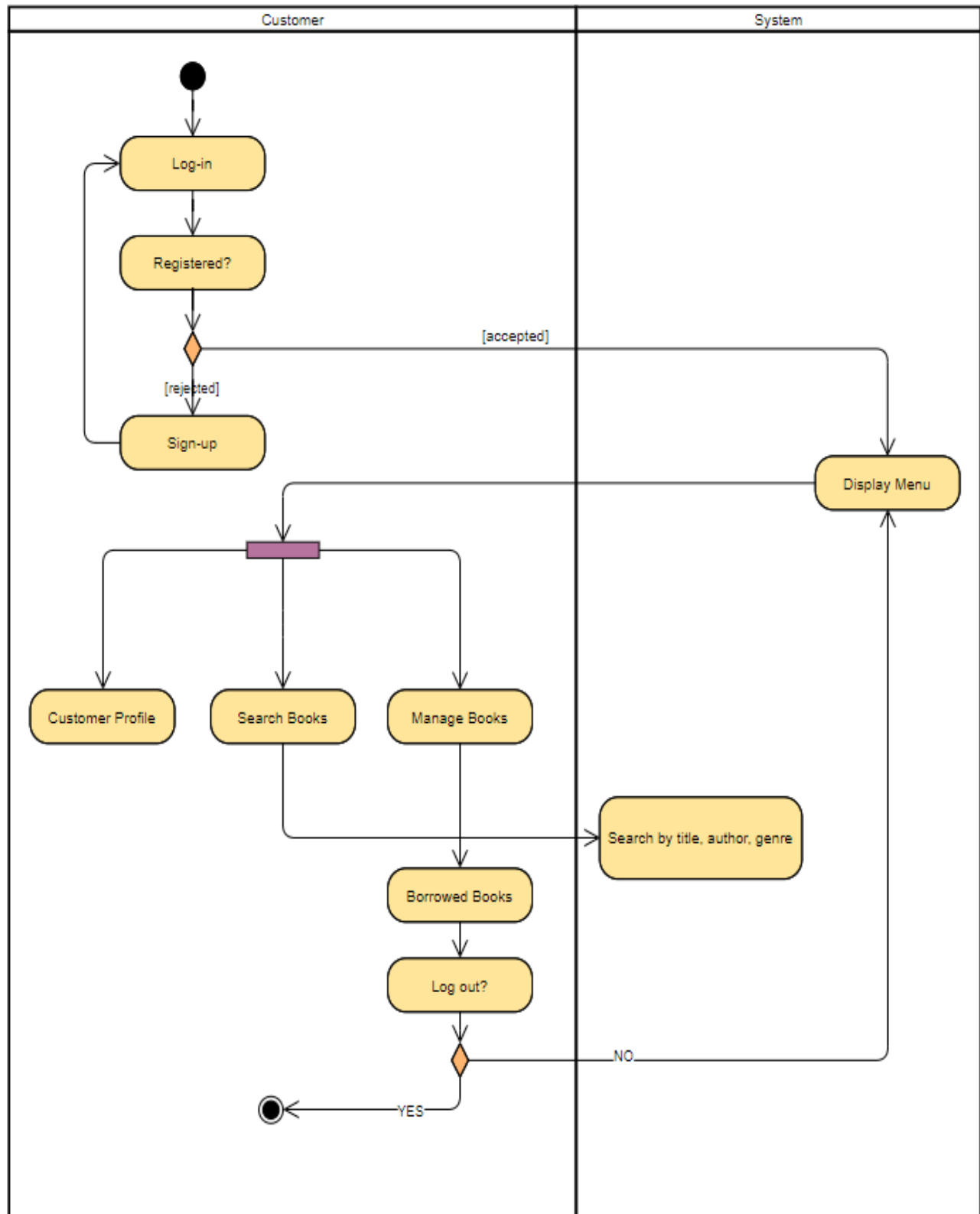
<Data dictionary is used to track all the different variables, states and functional requirements that you described in your document. Make sure to include the complete list of all constants, state variables (and their possible states), inputs and outputs in a table. In the table, include the description of these items as well as all related operations and requirements.>

### **STORY POINTS**

Feature	Story Points	Development Hours
Log-in System	10 points	60 hours
Customer Profile	2 points	12 hours
Activity Log	5 points	30 hours
Browse Books	10 points	60 hours
Manage Books	20 points	120 hours
Book Reservation	20 points	120 hours
Book Details	5 points	30 hours
Blacklist System	10 points	60 hours
Penalty System	10 points	60 hours
Rating System	2 points	12 hours
Notification System	5 points	30 hours
Total Points:	99 points	594 hours

594 hours = 24.75 days





**Main Menu**

**login system**

- **Profile**
  - Customer Profile
- **Books**
  - scheduling system(duration for borrowed books)
  - book reservation(add or remove in cart)
  - optimized searching and sorting(by genre)
  - supported formats(pdf, physical copy, audio-book)
  - book preview(summary of the book)
  - feedback system(per book)

## Appendix B - Group Log

5/14/2020 - Finalizing SRS