Software Requirements Specification

for

Library Management System

Version 1.0 approved

Prepared by ,

M.S Ajith Narayana – 19z331

Dhanush Nallagatla – 19z333

Vasanthan M – 19z359

Rithish B – 20z464

PSG College of Technology

02.09.2021

Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This document describes the software requirements of a Library Management System for a college library. The document gives both functional and non-functional requirements of the system. The purpose of the project is to provide a friendly environment to maintain the book details and the user details. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

1.2 Document Conventions

Standard IEEE template is the template used to organize the appearance of the document and its flow. The document is prepared using Microsoft Word 2019 and has used the font type 'Times'. The fixed font size that has been used to type this document is 12pt with 1.15 line spacing.

1.3 Intended Audience and Reading Suggestions

The intended audience of this document would be the Library Management System administrator and the project team to refer and analyze the information. Also, it could be used by potential developers, design engineers, testers, etc. Readers are suggested to know basics of SRS and the outline of how the Library Management System works. The end users are suggested to use this SRS as a tool to see if their expectations are met and modify if any changes are required by informing the team.

1.4 Product Scope

Library Management System is basically updating the manual library system into an internet-based application so that the users can know the details of their accounts, availability of books.

- Every Student in college can access the application.
- Functions like searching for book makes things easier.
- Passage of book will be really useful for students.
- Every student can check the application at any time which saves their time.

1.5 References

- SRS Template: IEEE Template → https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc

- Creating Use case diagrams using Star UML platform

2 Overall Description

2.1 Product Perspective

The users can be either staff or student. This System will provide a search functionality to facilitate the search of resources. This search will be based on various categories viz. book name or the ISBN. Further the library staff personnel can add/update the resources and the resource users from the system. The users of the system can request issue/renew/return of books for which they would have to follow certain criteria.

2.4 Product Functions

The Online Library System provides online real time information about the books available in the library and the user information. The main purpose of this project is to reduce the manual work. This software is capable of managing Book Issues, Returns, Calculating/Managing Fine, Generating various Reports for Record-Keeping according to end user requirements. The Librarian will act as the administrator to control members and manage books. The member's status of issue/return is maintained in the library database. The member's details can be fetched by the librarian from the database as and when required. The valid members are also allowed to view their account information.

2.2 User Classes and Characteristics

2.3.1 Admin:

Admins are people who have permission to add or manage books.

2.3.2 End Users/ Students:

Students are the end users who can search and read books based on their needs from the library. Each student is given a username and password during the Signup process through which they can login into the Library Management System.

2.3 Operating Environment

- Processor base frequency of 1.8 GHz or Higher
- Minimal screen resolution: 1366x768 pixels
- 4 GB RAM or more

- 150 MB of available disk space or more
- Windows Operating System.

2.4 Design and Implementation Constraints

The following software & hardware equipment are required for implementation and for the design:
1. Visual Studio Code and the Coding language used is Django
2. Microsoft Word for documentation purposes.
3. Keyboard and a mouse will be required for interaction with the application.
4. Also ensuring certain constraints like reusability, maintainability, testability, safety would enhance the software application

2.5 User Documentation

• Documentation is mainly intended for database administration for understanding how to handle database entry and editing.
• They are expected to understand whatever database administration program they prefer that supports reading and editing databases.
• Basic knowledge on operating some applications on windows medium would help the end users.

2.6 Assumptions and Dependencies

• The system is storing all the data at one place but the access is restricted among its users as per prior knowledge about the requirements.
• Basic text field entry and typing skills are assumed by all users.
• Basic knowledge on operating some applications on windows medium would help the end users.

3 External Interface Requirements

3.1User Interfaces

At starting in the user interface both the students and staff will have a login option. After an user logs in there will be a functions displaying according to the certain user (ex: searching for book, passage of book for students and updating books for staff)

3.2 Hardware Interfaces

- Hard disk: 40 GB

- RAM: 512 MB
- Processor: Pentium ® Dual-core CPU

3.3 Software Interfaces

- Operating systems: windows, Linux, MAC
- Html CSS, Java script (front end)
- Django, python (backend)
- MySQL (Database management)

3.4 Communications Interfaces

- The communication between web page and the program is established by Django
- The customer can access the website by connecting to the Internet. The source of the internet can be a modem, a broadband Internet, broadband connection with an internet provider etc.
- Once the user connects to the internet, they can perform all the actions without any interruption with a stable internet connection.

4 System Features

The following are the main features for library management system.

4.1 Login

4.1.1.1 Description and Priority

The user has to enter the username or roll no and the password that has been given during the signup phase. The credentials are validated and the user is given access to the application if the credentials are valid else needs to re-enter the credentials. This feature has a high priority.

4.1.1.2 Stimulus/Response Sequences

The user has to enter the following details

1.username or roll no

2.password

Once the credentials are validated depending on whether the details are correct or not the user shall be given access to the materials of the application, in-case the login details don't matchup his/her request for login may be rejected after which the user has to re-enter the details correctly.

4.1.1.3 Functional Requirements

REQ-1: The database in which the user credentials are stored
REQ-2: A program that accepts the credentials entered and validates. If details are right the program lets the user in and if the details don't match the user is requested to enter the credentials again

4.2 Sign up

4.2.1 Description and Priority:

The user must enter their details to create an account on this platform. This is a high priority feature, without creating an account the user cannot use this platform.

4.2.2 Stimulus/Response Sequences:

Details that the user must enter:

- Username
- set Password
- confirm password

4.2.3 Functional Requirements:

REQ-1: A database is created to store the credentials of the user.
REQ-2: A program that acknowledges, approves, stores the user credentials

4.3 Passage of books

4.3.1 Description and Priority:

The user who having book must enter his details and also another user to whom he/she want to pass the book . This is a high priority feature, without creating an account the user cannot use this platform.

4.3.2 Stimulus/Response Sequences:

After performing this function the details of user1 and user2 will updated in the database

4.3.3 Functional Requirements:

REQ-1: The program will update the details of users after passage

REQ-2: A program that acknowledges, approves, stores the user credentials

4.4 Searching of books:

4.4.1 Description and Priority:

The user must enter the details of book for searching . Incase the user did not find the book user can send request for finding the book . This is a high priority feature, without creating an account the user cannot use this platform.

4.4.2 Stimulus/Response Sequences:

Details that the user must enter:

- Book name
- Author Name

4.4.3 Functional Requirements:

REQ-1: book name and Author name are required for searching of books.

REQ-2: A program that acknowledges, approves, stores the user credentials

5 Other Nonfunctional Requirements

5.1 Performance Requirements

• **Speed** - The usage experience should be smooth and fast. The speed of the system should not affect if the number of users increased. The system's response time should also be very short for the user's data access requests. Search and loading functionalities should be faster for a better end-user experience.

• **Scalability** -The system should be scalable to support a large user base.

• **Performance statistics** - Performance for data entry is dependent upon the programming language used and the machines implementing the application. This should be negligible. The biggest drag on performance will be accessing the database. We are keeping our queries simple to counter the slow execution of queries

5.2 Safety Requirements

The user must enter their fields with correct specified data type

5.3 Security Requirements

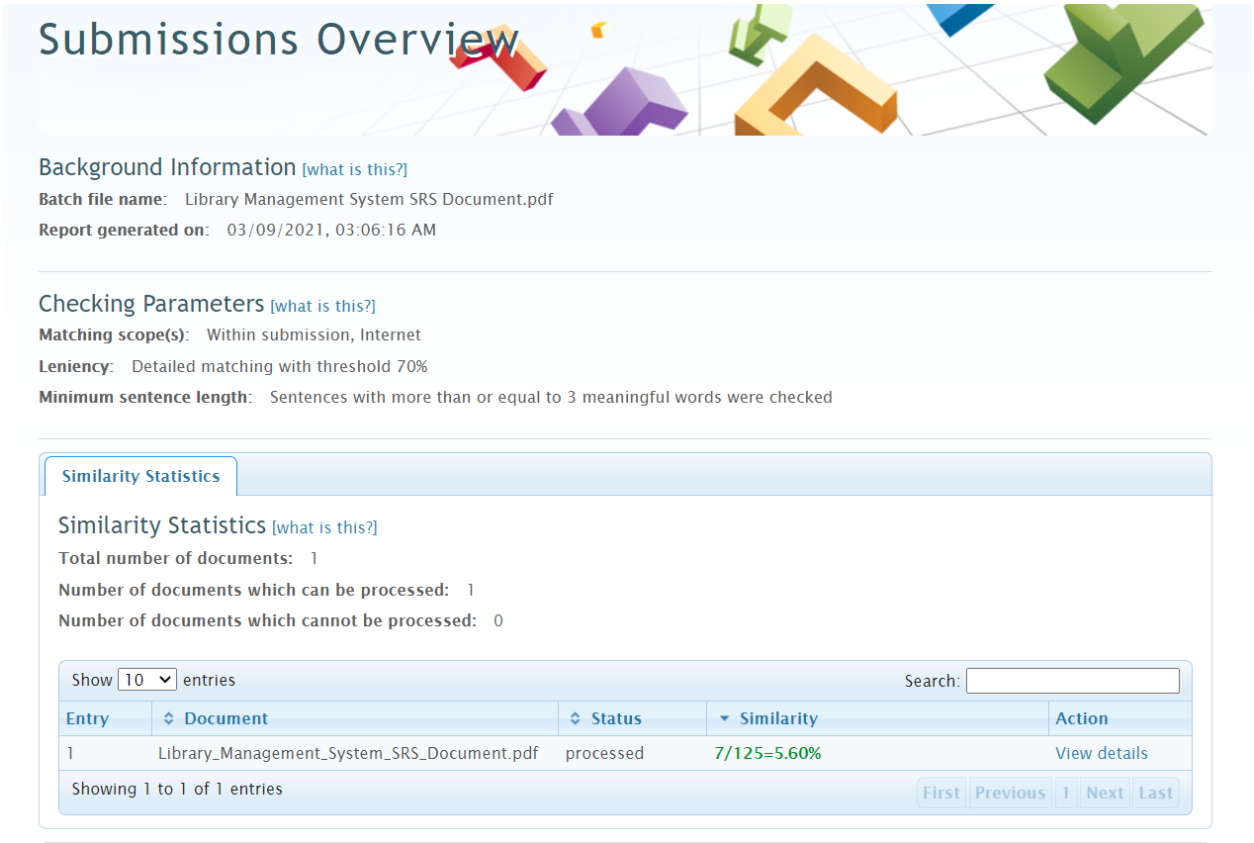
Security is used to ensure login details as confidential and it is not stored anywhere. The user can see their data only when they enter their information in the respective fields. System Administers are trained on customer privacy.

5.4 Software Quality Attributes

- The project should be open source
- The quality of database is maintained in such a way sa that it can be very user friendly to all the users of the database

5.5 Business Rules

A business rule is anything that implements business policies and practices. This includes the cost of the project. The user should avoid illegal rules and protocols. Neither admin nor members should cross the rules and regulations.



Submissions Overview

Background Information [what is this?]

Batch file name: Library Management System SRS Document.pdf

Report generated on: 03/09/2021, 03:06:16 AM

Checking Parameters [what is this?]

Matching scope(s): Within submission, Internet

Leniency: Detailed matching with threshold 70%

Minimum sentence length: Sentences with more than or equal to 3 meaningful words were checked

Similarity Statistics

Similarity Statistics [what is this?]

Total number of documents: 1

Number of documents which can be processed: 1

Number of documents which cannot be processed: 0

Show 10 entries Search:

Entry	Document	Status	Similarity	Action
1	Library_Management_System_SRS_Document.pdf	processed	7/125=5.60%	View details

Showing 1 to 1 of 1 entries First Previous 1 Next Last