Software Requirements Specification

For

Library management system

Version 1.0 approved

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1. Introduction

1.1 Purpose

This is the Software Requirements Specification (SRS) for the library management system. The purpose of this document is to convey information about the application's requirements, both functional and nonfunctional to the reader. Software Requirements Specification (SRS) allows to verify the customer that all his requirements are observed and will be implemented correctly by developer. The final product of the team will be meeting the requirements of this document.

1.2 Document Conventions

Main Section Titles

- Font: Times New Roman
- Face: Bold
- Size: 18

Sub Section Titles

- Font: Times New Roman
- Face: Bold
- Size: 14

Other Text Explanations

- Font: Times New Roman
- Face: Normal
- Size: 12

1.3 Intended Audience and Reading Suggestions

The intended audience for the SRS reading consists of system end-users (patrons), customer engineers, software developers and The Project Supervisor Dr.Muhammad Asif. The authors would suggest clients to go through the requirement section thoroughly before installing the software. System end-users are expected to have certain knowledge in the terms used. Students and Developers can utilize the documentation as a resource in developing the project to a new product.

1.4 Product Scope

The purpose of this project is to provide a friendly environment to maintain the details of books and library members. The Library System is a package to be used by Libraries to improve the efficiency of Librarians, Library employees. The system provides books and members information to Librarians and helps him/her to keep the books and member information updated all the time.

1.5 Abbreviations

- LMS – Library management system

- SRS – Software requirements specification

- PC – Personal Computer

- HDD - Hard Disc Drive

- RAM – Random Access Memory

2. Overall Description

2.1 Product Perspective

The proposed is Library Management System. This System will provide a search functionality to facilitate the search of resources. This search will be based on various book name and id. Further the library staff personnel can add/update/remove the books and the users from the system.

2.2 Product Functions

The features that are available to the Librarian are:
☐A librarian can issue a book to the student
☐Can view a book available in the library.
☐Can take the book returned from students
☐Add books and their information of the books to the database
☐Can delete a member or book from library database.
☐Add member to the database
☐Can search for a member or book.

2.3 User Classes and Characteristics

There is only one type of user in our first version of LMS i.e. Librarian who'll be acting as the controller and he will have all the privileges of an administrator.

2.4 Operating Environment

This software will operate in any version of windows (not below win xp) and hardware platform must be a PC or laptop and java runtime environment must be setup before using this software

2.5 User Documentation

The product will include user manual. The user manual will include product overview, complete configuration of the used software, technical details and contact information.

2.6 Assumptions and Dependencies

The users have sufficient knowledge of computers. The users know the English language, as the user interface will be provided in English.

3. External Interface Requirements

3.1 User Interfaces

•The design or layout of every form will be very clear and very interactive to the user.
•In the login window the user can easily entered the desired password and login name.
•Then it will give the successfully login message.
•In every window & Mac there is help and support option is present for the ease of user.
•There will be a proper collection of GUI interface, which will provide better look and feel.
•In the screen layout the background color is very light and the graphics and font style will be in proper manner and well organized.
•If the user will print any error statement then it will give the proper error message display.
•The user will be able to search any data from the record by using proper guideline shown in the window
•This software will be easily understandable and operable by the user

3.2 Hardware Interfaces

☐Operating System: Windows xp or above.
☐Processor: Pentium 3.0 GHz or higher
☐RAM: 256 Mb or more
☐Hard Drive: 10 GB or more

4. System Features

4.1 User login

Description of feature:

This feature used by the librarian to login into system. He is required to enter user id and password before he is allowed to enter the system .The id and password will be verified and if invalid id is there he is not allowed to enter the system.

Functional requirements

-The system must only allow librarian with valid id and password to enter the system
-The system performs authorization process which decides what user level can access to.
-The librarian must be able to logout after they finished using system.

Pre- conditions:
Librarian must installed LMS on his PC.
Post- conditions:
System should transfer control to the user main screen to proceed desired further actions.
Basic Flow:
Enter user Id & password.

4.2 Add/Remove a member

Description of feature:
This feature can be performed by librarian to register new user or deleting an existing user.
Functional requirements:
-The librarian must be able to add and remove a user to or from data base of member.
-System must be able to check whether a member with same registration number already exist or not.
-System must be able to check that whether a member issued books before librarian perform delete a member operation.
Pre- conditions:
Members should be available to remove. Member details should be available to add.
Post- conditions:
After successful add/remove operation Database should be updated.
Basic Flow:
Check the action to be taken whether to add or remove a member. Add/remove the member Update the database.

4.3 Add/Remove a Book

Description of feature:
This feature allows to add and remove books to/from the library

Functional requirements:
-System must be able to not allow two books having same book id.

Pre- conditions:
User should be logged into the system. Books should be available to remove. Book details should be available to add.

Post- conditions:
After successful operation of add/remove. Database should be updated.

Basic Flow:
Identify the user type Check the action to be taken whether to add or remove a book. Add/remove the book Update the database.

4.4 Search a book or member

Description of feature:
This feature is found for both Librarian .he can search a member on reg number and search book based on book id, book name.

Functional requirements

- System must be able to search the database based on select search type

- System must be able to filter book based on keyword entered

- System must be able to show the filtered book in table view

Pre- conditions:
Librarian should be logged into the system. Book or Member should be exist in database to search.

Post- conditions:
The user should be given the results of the search with full details.

Basic Flow:
Check the availability. View the search results.

4.5 Issue and return Books

DESCRIPTION OF FEATURE
This feature allows to issue and return books.

Functional requirements
-System must be able to enter issue information in database.
-System must be able to update number of books.
-System must be able to search if book is available or not before issuing books.
-System should be able to enter issue information.

Pre- conditions: Member should give the member Id to the librarian. Books should be available to issue. In case of returning a book Librarian should be logged into the system. Member should be borrowed books. Member should give the member Id to the librarian.

Post- conditions:
Database of Member and book details should be updated.
Basic Flow:
Get the member Id & book Id. Check the availability. Check limit and number of books taken. Issue the book. In case of returning a book get the member Id & book Id. Check the Id accuracy. Return the book and update database.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

•The development of the software will be based on the object oriented model.
•The timeline of this software must be in our mind.
•The performance of the functions and every module must be well.
•At every step the output of the one phase is the input of the other phase and it will be reliable and accurate.
•The risk factor must be taken at initial step for better performance of the software.
•For individual function the performance will be well.
•For login to the software password and user name will be matched to the password and name
 Saved in the database and thus only authenticated users are allowed to the login.

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5.2 Security Requirements

- System will use secured database.
- No one should be able to hack user password easily.
- Proper user authentication should be provided

5.3 Software Quality Attributes

Our software has many quality attribute that are given below-

Adaptability This software is adaptable by any organization.
Availability-The availability of the software is easy and for everyone.
Correctness-The results of the function are pure and accurate.
Flexibility-The operation may be flexible and reports can be presented in many ways.
Maintainability-After the deployment of the project if any error occurs then it can be easily maintain by the software developer.

Reliability-The performance of the software is better which will increase the reliability of the software.

Usability-To perform any operations and to understand the functioning of software is very easy.

Productivity-This software will produce every desired result with accurately.

Timelines-The time limit is very important. It will save much time and provide fast accessing.

Cost effective-This software is less in cost and bearable by any Organization.

5.4 Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make decision or infer new data from existing data. This includes the rules and regulations that the system users should be abide by. The users should avoid illegal rules and protocols. Librarian should not cross the rules and regulations.