Library Information System (LIS)

Software Requirement Specification Documentation-

Version<1.0>

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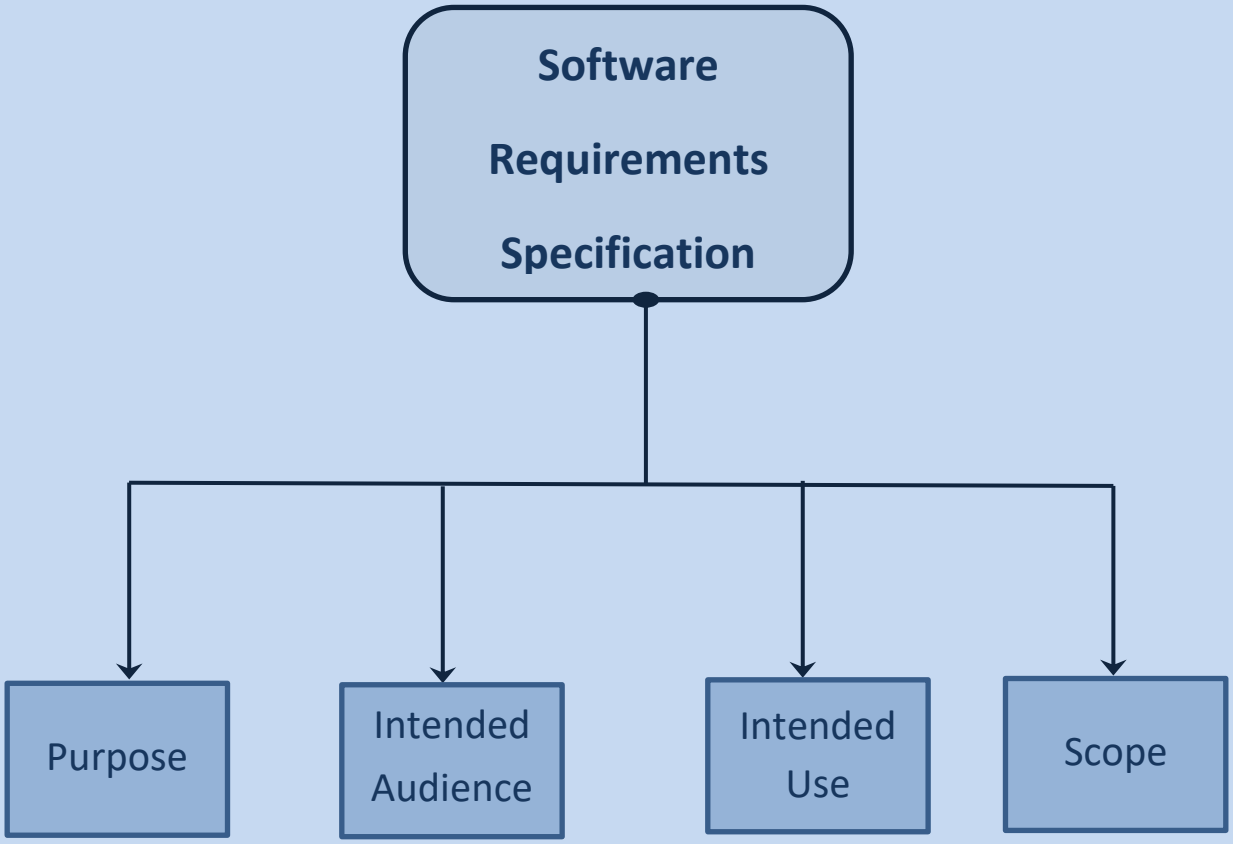
Revision History

Serial No.	Title	Date
1.	Introduction	18|01|24
2.	Functional and Non-Functional Requirements.	25|01|24
3.	Data Flow Diagrams	01|02|24
4.	Structure chart and functional dependencies	15|02|24
5.	Use Case Diagram, Class Diagram	07|03|24



- **Purpose-** This Software Requirements Specification (SRS) document outlines the requirements for the development of a Library Information System (LIS) for the institute's library. The LIS will automate the processes of book issue and return, book reservation, book search, and member management. The system will be designed to handle the library's 10,000 books and four categories of members: undergraduate students, postgraduate students, research scholars, and faculty members.

- **Intended Audience-**
  1. **Users:** They put repair requests into the system.
  2. **Admins:** They use the system to decide which roads to fix first and plan what's needed.

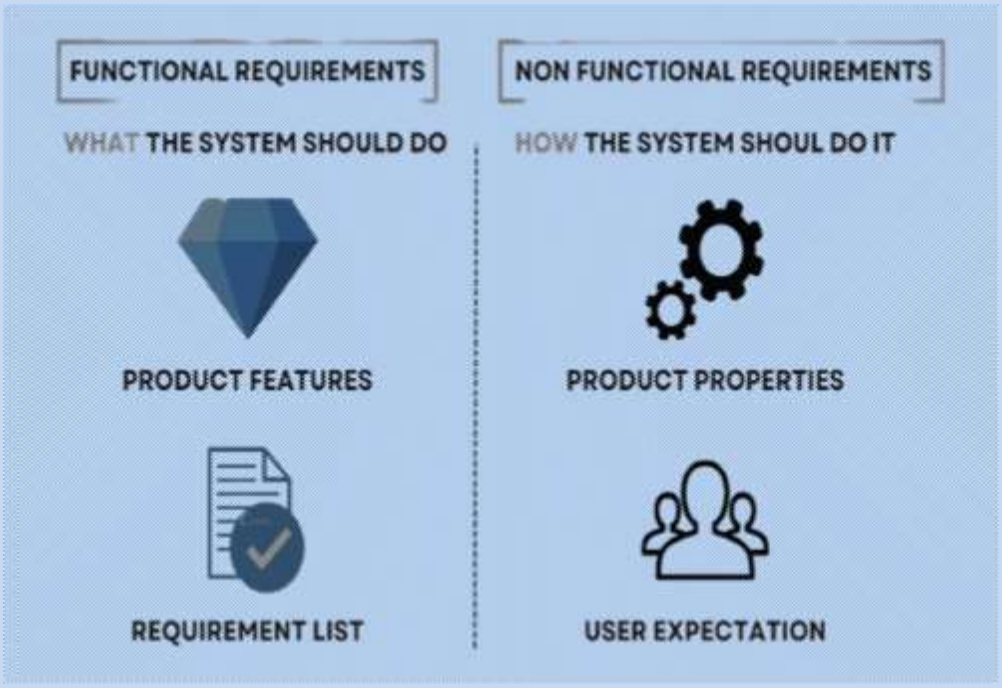
Intended Use- The LIS will be a Python-based application that will allow the library clerk to enter book details, manage member records, and generate reports. The system will allow members to search for books, reserve books, and check their account status. The system will also generate bills for overdue books and print reminder messages for members with overdue books. The LIS will maintain statistics on book issues and will allow the librarian to delete books from the library's list of books and add new books.

- **Product Use-**

  The LIS system will do the following things:-

  Complaint Management: - Keep track of repair requests from residents and sort them based on how urgent they are.
  Supervisor Tools: - Give a daily list of new complaints to the supervisors. It helps supervisors to decide which roads need fixing first and plan what's needed.
  Resource Scheduling: - Plan when to fix each road based on urgency and what materials, machines, and people are available.
  Administrator Tools: - Let’s administrators update info about the people and machines available for repairs. Changes plan if something is not available.
  Statistics and Reporting: - Make reports for the mayor with info on how many repairs were done and what's left. It shows stats on how the people and machines are being used. The RRTS system makes it easier for everyone to work together and use resources wisely to fix the city's roads.

Functional and Non-Functional Requirements:-



Functional Requirements-

- R.1:Register

  ♣ Description : First the user will have to register/sign up. There are two different type of users.

  ♣ The library manager/head : The manager have to provide details about the name of library ,address, phone number, email id.

  ♣ Regular person/student : The user have to provide details about his/her name of address, phone number, email id.

- R.1.1: Sign up

  ♣ Input: Detail about the user as mentioned in the description. ♣ Output: Confirmation of registration status and a membership number and password will be generated and mailed to the user.

♣ Processing: All details will be checked and if any error are found then an error message is displayed else a membership number and password will be generated.

- R.1.2 : Login

♣ Input: Enter the membership number and password provided.

♣ Output : User will be able to use the features of software.

- R.2 : Manage books by user.
- R.2.1 : Books issued.

♣ Description : List of books will be displaced along with data of return. 4 • R.2.2 : Search

♣ Input : Enter the name of author's name of the books to be issued. ♣ Output : List of books related to the keyword.

- R.2.3 : Issues book

♣ State : Searched the book user wants to issues.

♣ Input : click the book user wants.

♣ Output : conformation for book issue and apology for failure in issue.

♣ Processing : if selected book is available then book will be issued else error will be displayed.

- R.2.4 : Renew book

♣ State : Book is issued and is about to reach the date of return.

♣ Input : Select the book to be renewed.

♣ Output : conformation message.

♣ Processing : If the issued book is already reserved by another user then error message will be send and if not then conformation message will be displayed.

- R.2.5 : Return

♣ Input ; Return the book to the library.

♣ Output : The issued list will be updated and the returned book will be listed out.

• R.2.6 Fine

♣ Input : check for the fines.

♣ Output : Details about fines on different books issued by the user.

♣ Processing : The fine will be calculated, if it crossed the date of return and the user did not renewed if then fine will be applied by Rs 10 per day.

• R.3 Manage book by librarian

• R.3.1 Update details of books

• R.3.1.1 Add books

♣ Input : Enter the details of the books such as names ,author ,edition, quantity.

♣ Output : confirmation of addition.

• R.3.1.2 Remove books

♣ Input : Enter the name of the book and quantity of books.

♣ Output : Update the list of the books available.

Non-Functional Requirements-

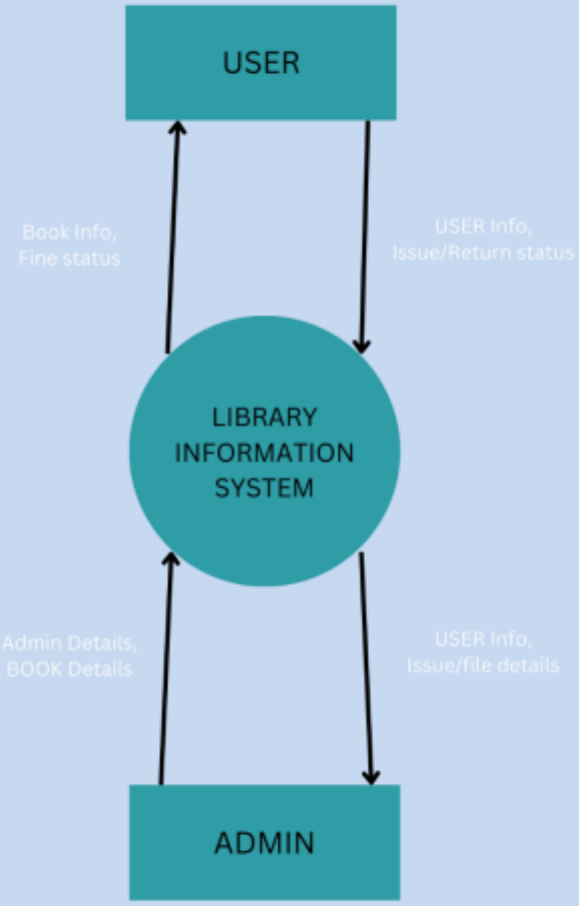
- **Performance Requirements-** The primary performance requirement is the capability of the system to function with low speed of the internet connection and consumption of low data.
- **User-friendliness-** The system will have a user interface that is very intuitive and easy to register complaint for the users. The Front-End of the system will be very intuitive and easy to understand.

- **Security-** The primary security concern of the system is not to leak the information of the users registering the complaint and strictly being able to maintain the anonymity of the users. Under no circumstances is the anonymity of the users registering complaint will be made public
- **Scalability-** The system should be scalable to accommodate an increasing volume of data, users, and concurrent transactions as the road network and repair activities expand.
- **Reliability-** The system must be reliable, with minimal downtime and a robust backup and recovery mechanism to prevent data loss in case of system failures.
- **Usability-** The system should be user-friendly, with an intuitive interface that requires minimal training for users to navigate and perform tasks effectively.
- **Compatibility-** The system should be compatible with various devices, browsers, and operating systems to ensure accessibility for a diverse user base.
- **Compliance-** The system must comply with relevant regulations and standards related to data privacy, road safety, and infrastructure management.
- **Maintainability-**The system should be designed for ease of maintenance, with modular components, clear documentation, and efficient update procedures.

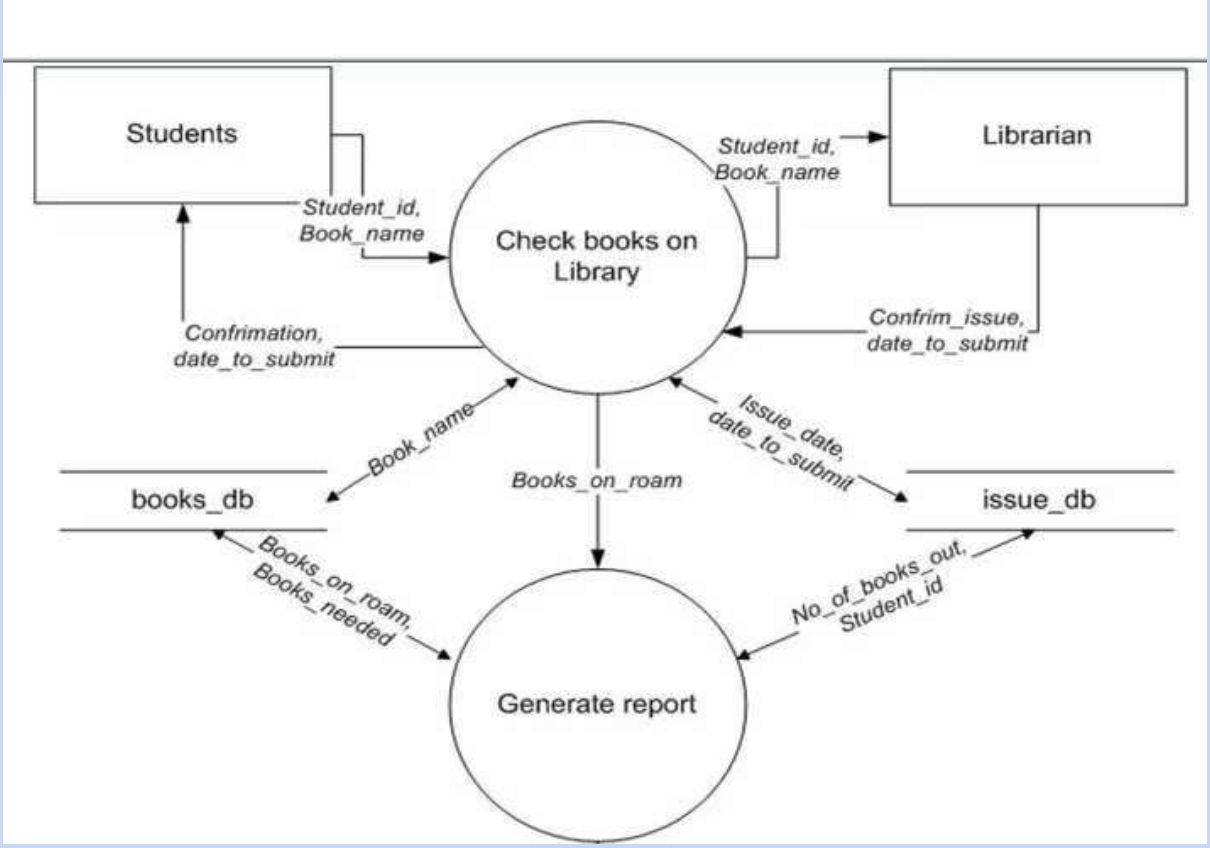
These functional and non-functional requirements provide a comprehensive framework for the development and evaluation of a road repair and tracking system, ensuring it meets both user needs and technical standards.

DFD Diagrams

DFD Level 0



DFD Level 1


Students
Librarian
Check books on Library
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Student_id, Book_name
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Confrim_issue, date_to_submit
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Books_on_roam
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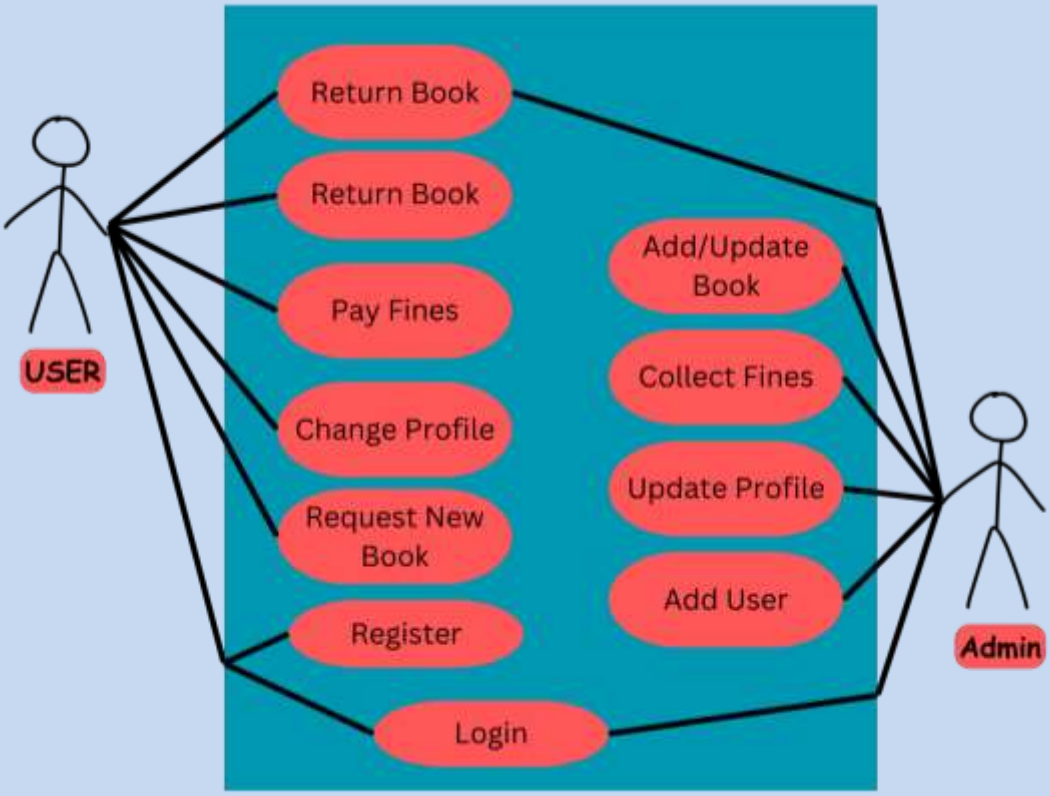
issue_db
Books_on_roam, Books_needed
No_of_books_out, Student_id
Generate report

USE CASE Diagram



CLASS Diagram