


# Experiment No-1

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 **Aim** : To Analyze the requirements and prepare SRS for Library Management System.

**SRS** : Software Requirement Specification.

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# 1. Introduction

## 1.1 purpose

The main objective of this document is to illustrate the requirements of the project library Management System. This document gives the detailed description of the both functional and non-functional provided by the client.

The main Objective and purpose of this project is to provide a friendly environment to maintain the details of books and library members through Online, and also to maintain easy circulation system using Computers.

## 1.2 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 and necessary information regarding their membership.

Library Management System can be used by any existing or new library to manage its books and book borrowing, insertion. It is especially useful for any educational institute where modifications in the content can be done easily according to the requirements.

### 1.3 Definitions, Reading Suggestions

- SQL → Structured Query language.
- DFD → Data flow Diagram.
- CFD → Context flow Diagram.
- ER → Entity Relationship.
- IDE → Integrated Development Environment.
- SRS → Software Requirement Specification.
- JAVA → platform independence.

### 1.4 References

#### Books

- Software Requirements and Specifications :  
A lexicon of practice, principles and
- Software Requirements (Microsoft) Second Edition  
By Karl E. Wiegers
- Software Engineering : A practitioner's Approach  
Eighth Edition By Roger S. pressman

#### Websites

- <http://www.slideshare.net/>
- <http://ebookify.net/doc/srs-library-management-system>.

### 1.5 Overview of Document

The implementation of library Management starts with entering and updating master records like book details, library information. Any further transaction like book issue, book return will automatically update the current books.



## 2. General Description:

### 2.1 product perspective :-

The proposed Library Management System will take care of the current book detail at any point of time. The book issue and book return will update the current book details automatically so that user will get the update current book details.

### 2.2 product functions :-

- The main purpose of this project is to reduce the manual work.
- This Software is Capable of managing Book issues, Returns and calculating / Managing fine. The valid members can also view their account information.

### 2.3 User Characteristics :-

We have two levels of users.

- user module : In this we can have students, faculty as users of this Software.
- Administration module : The management acts as Administration.

### 2.4 Design and Implementation Constraints :-

Each member will have an identity which can be used for library book issue, fine payment etc.--.

Whenever library member wish to take a book, the book issued, the software checks both the details of

book as well as student in the library catalog.  
In case of retrieval of book much of human participation could be avoided.

## 2.5 User Documentation:

User Documentation is the most important and valuable step in the preparation of SRS Document.

It helps both the client as well as developer in order to achieve better clarity of customer's practices and perspective. In this document we try to write the documentation comments for the code you have developed.

## 2.6 Assumptions and Dependencies:

Dependencies include:

1. The General reports should be stored in the system.
2. Any update regarding the book transactions from the library is to be maintained properly in the library catalog.

Assumptions include:

1. The username should not exceed more than 100 characters.
2. During login the username is expected with which they have signed up.
3. All the data and information regarding the books is assumed to be present in the library catalog.



### 3. Specific Requirements :

Specific Requirements are generally the Services that we are going to provide for the customer and also the requirements needed to develop the Software. The main focus of Specifying requirements is to cover all the specific levels of details that will be required for the subsequent phases of Software development and these are agreed upon by the client.

#### 3.1 Functional Requirements :

functional Requirements describe the behaviour of the System that is supported to have in a Software product. These are nothing but the Services that the customer expects from the Software to perform.

In library Management System there are many functional requirements like

##### 3.1.1 Login / Sign up :

3.1.1.1 Introduction: The purpose of this requirement is to provide the identity to be the user of library management System.

3.1.1.2 Input: The input for this requirement is the credentials like Email or mobile number.

3.1.1.3 processing: When the user enters



the credentials it checks whether the details are valid or not.

#### 3.1.1.4: Output

If the Entered Credentials are valid then his login would be Successful Otherwise it asks for Signup as a new member.

### 3.1.2 Search a book or Reserve a book.

3.1.2.1. Introduction: The purpose of this requirement is to provide search option for the user using different filters inorder to make his task easier and also a reserve option.

3.1.2.2 Input: The input for this requirement can be voice search or type search and also selecting a filter (Search by bookname, Search by author, Search by ISBN, Search by publisher, search by categorie which includes different types of books.

3.1.2.3 processing: The Software displays the list of books available based on the type of Search by the user by processing the given input it checks in the library catalog.

3.1.2.4 Output: From the display user can select the required book for him, if it is present over there book will be issued otherwise user can reserve for the respective book.



### 3.1.3 Book Transactions

3.1.3 a) Issue the book.

3.1.3 b) Alert book return.

3.1.3 c) Return book.

#### 3.1.3.1 Introduction:

This requirement serves the purpose of book transactions between the user and the librarian.

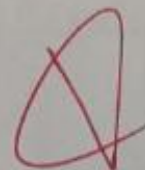
#### 3.1.3.2 Input:

Request for book issue by the user is the input for this requirement.

3.1.3.3 processing: The request for the selected book will be taken by the system.

It records the date and time of issuing the book and specifies the return date.

3.1.3.4 Output: The Book will be issued for the user and return date, book issue information will be updating in the user's account.

  
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### 3.1.4 Maintain Inventory

#### 3.1.4.1 Introduction:

This requirement is used to access every bit of information related to books, total no. of books that are issued or reserved or damaged.

#### 3.1.4.2 Input:

If the librarian adds a new book to the library, request to update the inventory will be the input for this.

#### 3.1.4.3 Processing:

System updates the inventory according to the information provided by the librarian.

#### 3.1.4.4 Output:

New information of books will be updated in the inventory.

### 3.1.5

#### Report Generation:-

##### 3.1.5.1 Introduction:-

This requirement is used to generate the reports based on various categories.

##### 3.1.5.2 Input:-

Request for getting the reports of their requirement

##### 3.1.5.3 Processing

The details for their requested report will be collected from the database.



3.1.5.4 Output:

A Report will be generated.

3.1.6 Account Maintenance:-

3.1.6.1 Introduction:

This is used to maintain the accounts of the user.

3.1.6.2 Input: Any request for updating the details of the user in his account regarding the book issue, book return etc.-

3.1.6.3 Processing:

At back the details will be updated according to the input given by the user.

3.1.6.4 Output:

User will be able to maintain the account.

### 3.2 External Interface Requirements :

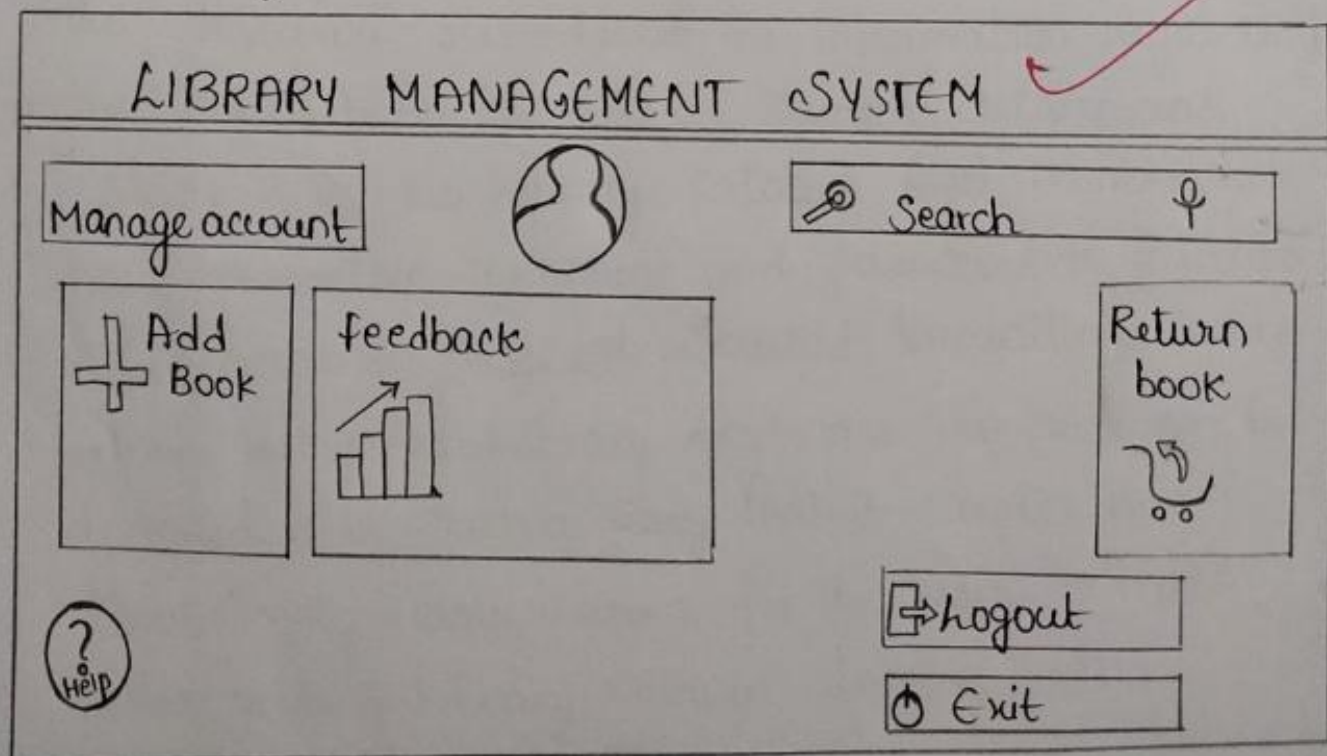
AS we know user interface is key to application usability. External Interface Requirements encovers all the interactions between hardware, software,

people. The External Interface Requirements for the library management system like dashboard,

Homepage, profile, content presentation, application navigation. It should be make sure that care should be taken to design proper user commands. It includes the interface with other software and operating system.

The Software offers a graphical user interface performing necessary tasks such as designing, displaying book information.

#### User Interface





### 3.3 Performance Requirements :

Performance Requirements refer to the non functional aspects of the Software system.

Hardware interface :

- Operating System : Windows
- Hard disk : 45 GB
- RAM : 260 MB
- processor : Cpu

Software interface :

- Java language.
- SQL Server.

Software can take any amount of input based on the space provided.

### 3.4 Design Constraints.

When the library member wants to take the book the Software records all the information regarding the issued book as well as student details and

store it in the library catalog. Each member will have respective username and password to get into their account. A great Secured transactions can be

done using the library Software. The Software is designed in such a way that it creates an

Ecofriendly Environment for the user to make better use of library without loosing interest.

### 3.5 Security Requirements.

We should keep a backup system because at the time of attack of any virus the data might be lost.

And there also some powercut issues where the details cannot be updated properly so proper UPS / inverter facility should be provided, No one should be able to hack user's passwords.

### 3.6 Maintainability Requirements.

Users Details will be maintained correctly in case of changed passwords or transaction of books and checked once for a day. Book return due date will be automatically mailed to the user's before two days.

### 3.7 Reliability Requirements.

The system will be active throughout 7 days a week, 24 hours a day so that importance to the data will be ensured much. Autosaving of changes make the system 100% reliable.

### 3.8 Availability Requirements

The system will be user available through all the 365 days, 24 hours a day and 7 days a week.

Real time information will be available through this system. Even if the system fails due to the backup feature it will regain the data within hours or less.



### 3.9 Database Requirements

The Database of the Library Management must contain the details of books in the perspective of bookname, authorname, publisher, ISBN, category and also details of the users of the system at the backend.

It should also contain the reports of most frequently used books, damaged books, no. of copies of each book available and also record of transactions.

### 3.10 Documentation Requirements.

Documentation Requirements of the Library Management System includes the required documents and reports for the sake of admin in order to make sense of books to be added and removed from the library.

And also documents means a lender's information regarding how information of the book and assets must be provided for the applicant. Also the record of issue and return dates, time must be maintained as documents.

### 3.11 Safety Requirements.

The system should be protected from the viruses by adding the backup feature so that loss of data can also be covered within hours and also make sure that system or the application would not crash due to any reasons.

### 3.12 Operation Requirements:

Operation requirements are the required to perform operations on the functional requirements. In order to issue the book it must be done with request of the requested user after search process. To perform the operation of issue or return book system must have database about all the information.

### 3.13 Site Adaption:

So this library Management System is adopted with student's and faculty use with connection with the operating system and the Environment.

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# FAQS

- 1) What is the need for an SRS Document?
  - 2) What are the User Interface Requirements?
  - 3) How many types of Software Requirements are there?
  - 4) What is difference between functional & non-functional Requirements.
  - 5) What are the Software Requirement Validations?
  - 6) What are the features of SRS?
  - 7) What Exactly are operation requirements?
  - 8) What is the need of Safety requirements?
  - 9) Why is SQL server treated as performance requirement?
  - 10) At which part of SRS importance is given for user's requirements?
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