Software Requirements Specification

**For**

Library Management System

**Version: 1.0**

**Prepared by -**

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# Introduction

## Purpose

The main objective of this document is to illustrate the requirements of the project Library Management system. The document gives the detailed description of the both functional and non-functional requirements proposed by the client. The purpose of this project is to provide a friendly environment to maintain the details of books and library members. The main purpose of this project is to maintain easy circulation system using computers and to provide different reports.

## Document Conventions

* + - Entire document should be justified.
    - Convention for Main title
      * Font face: Arial
      * Font style: Bold
      * Font Size: 32
    - Convention for Sub title
      * Font face: Calibri
      * Font style: Bold
      * Font Size: 32
    - Convention for body
      * Font face: Calibri
      * Font Size: 13

## Intended Audience and Reading Suggestions

The document is designed for the developers of the system, **UE** Librarians, and administration of faculty of **University of Education** and also for any party who is interested.

## 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 maximum limit for borrowing.

The project is specifically designed for the use of librarians and library users. The product will work as a complete user interface for library management process and library usage from ordinary users. Library Management System can be used by any existing or new library to manage its books and book borrowing, insertion and monitoring. It is especially

useful for any educational institute where modifications in the content can be done easily according to requirements.

## 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://ebookily.net/doc/srs-library-management-system>

# Overall Description

## Product Perspective

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

## 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.

## User Classes and Characteristics

The system provides different types of services based on the type of users [Member/Librarian]. The Librarian will be acting as the controller and he will have all the privileges of an administrator. The member can be either a student or staff of the university who will be accessing the Library online.

The features that are available to the Librarian are:-

* + - A librarian can issue a book to the member
    - Can view the different categories of books available in the Library
    - Can view the List of books available in each category
    - Can take the book returned from students
    - Can add books and their information to the database
    - Can edit the information of existing books
    - Can check the report of the existing books
    - Can check the report of the issued books
    - Can access all the accounts of the students The features that are available to the Members are:-
    - Can view the different categories of books available in the Library
    - Can view the List of books available in each category
    - Can own an account in the library.
    - Can view the books issued to him
    - Can put a request for a new book
    - Can view the history of books issued to him previously
    - Can search for a particular book

## Operating Environment

The product will be operating in windows OS. The Library Management System is a website and will operate in all famous browsers like Google Chrome, IE, and Mozilla Firefox. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Colour monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

## Design and Implementation Constraints

Any update regarding the book from the library is to be recorded to have update & correct values, and any fine on a member should be notified as soon as possible and should be correctly calculated.

## User Documentation

The User documentation will include:-

* + - User will be able to download User Manual from website’s help section
    - Video tutorials will be available for further guidance
    - Help Button will be available everywhere

## Assumptions and Dependencies

Assumptions are:-

* + - The coding should be error free
    - The system should be user-friendly so that it is easy to use for the users
    - The information of all users, books and libraries must be stored in a database that is accessible by the website
    - The system should have more storage capacity and provide fast access to the database
    - The system should provide search facility
    - The Library System is running 24 hours a day The dependencies are:-
    - The specific hardware and software due to which the product will be run
    - On the basis of listing requirements and specification the project will be developed and run
    - The end users (admin) should have proper understanding of the product
    - The system should have the general report stored
    - The information of all the users must be stored in a database that is accessible by the
    - Library System
    - Any update regarding the book from the library is to be recorded to the database and the data entered should be correct

# External Interface Requirements

## User Interfaces

The software provides good graphical interface for the user and the administrator can operate on the system, performing the required task such as create, update, viewing the details of the book.

* + - It allows user to view quick reports like Book Issued/Returned in between particular time.
    - It provides stock verification and search facility based on different criteria.
    - The user interface must be customizable by the administrator
    - All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined
    - The design should be simple and all the different interfaces should follow a standard template
    - The user interface should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module
  1. **Hardware Interfaces** Processor: Pentium(R) Dual-core CPU Hard Disk: 40GB

RAM: 256 MB or more

* 1. **Software Interface**

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.

Operating System: Windows XP, windows 7 and higher versions. Language: Java Runtime Environment, Net beans 7.0.1 (front end) Database: MS SQL Server (back end)

## Communications Interfaces

*<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>*

1. **System Features 1**

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

* User authentication and validation of members using their unique member ID
* Proper monitoring by the administrator which includes updating account status, showing a popup if the member attempts to issue number of books that exceed the limit provided by the library policy, assigning fine to members who skip the date of return
* Proper accountability which includes not allowing a member to see other member’s account. Only administrator will see and manage all member accounts

# Other Non-functional Requirements

* 1. **Performance Requirement**

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university which interacts with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university.

* + - The performance of the system should be fast and accurate
    - Library Management System shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period. Thus it should have inbuilt error testing to identify invalid username/password
    - The system should be able to handle large amount of data. Thus it should accommodate high number of books and users without any fault
  1. **Safety Requirement**

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

* 1. **Security Requirement**
     + System will use secured database
     + Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
     + System will have different types of users and every user has access constraints
     + Proper user authentication should be provided
     + No one should be able to hack users’ password
     + There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

## Software Quality Attributes

* + - There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes
    - The project should be open source
    - The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database
    - The user be able to easily download and install the system