VIT-AP UNIVERSITY

Software Requirement Specification Document for Library Management System

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1. Introduction:

Management software for monitoring and controlling the transactions in a library. The project "Library Management System" is developed in PHP, which mainly focuses on basic operations in a library like adding new books, updating new information, searching books and members, and returning books.

This project of "LIBRARY MANAGEMENT" gives us complete information about the library. We can enter the record of new books and retrieve the details of books available in the library. We can issue the books to the students and maintain their records and can also check how many books are issued and stock available in the library.

Throughout the project, the focus has been on presenting information and comments in an easy and intelligible manner. The project is very useful for those who want to know about Library Management Systems.

1.1 Purpose:

By using a library management system, the operation of borrowing and managing inventories is paperless. This system provides a user-friendly data entry with a dropdown button menu, list box, and checkbox in purpose to make the input entry easier to understand and use. It is also created to ensure that the library items are sorted properly in order to maintain their security.

This system will store all the books and members' information that consists of book numbers, book titles, author names, and racks to the system database. It also provides a search function to help students find the book by the number of books. The search function will search through the book's database to look for the book and view where the book is situated.

1.2 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 processes 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.

The project can be implemented under various situations. We can add new features as and when we require, making reusability possible as there is flexibility in all the modules. The language used for developing the project is PHP as it is quite advantageous to other languages in terms of performance, tools available, cross-platform compatibility, libraries, cost (freely available), and development process.

1.3 Intended Audience:

For this project, the intended audience is:
1. Students
2. Faculty/scholar
3. Non-teaching Staff
All of us will have a separate portal so that the usage and maintenance of the individual will be well organized.

1.4 Intended Use:

The purpose of a library management system is to operate a library with efficiency and at reduced costs. Managing a library manually is labor-intensive and an immense amount of paperwork is involved. The system saves time for both the user and the librarian. With just a click the user can search for the book availability and even the position of the book in the library. If a user wants a specific book that can be useful to many then he can request using the portal. Librarians can see the requests and take action accordingly. Stock checking and verification of books in the library can be done within a few hours. The automated system saves a considerable amount of time as opposed to the manual system. The library management system software makes the library a smart one by organizing the books systematically by author, title, and subject. This enables users to search for books quickly and effortlessly. Students need access to authentic information. An advanced organized library is an integral part of any educational institution. In this digital age, a web-based library management system would be ideal for students who can access the library's database on their smartphones.

1.5 Problem Analysis:

1. ***Maintain stock and receive fines:***: It must enter details with respect to new books, handouts, magazines, and so on. The stock details are refreshed every single time another stock arrives or when a thing is taken out. If the book is not returned on or before the due date then a fine will be charged for the students.

2. ***Providing Identification numbers***: The framework gives one-of-a-kind distinguishing proof numbers to everything independently. It ought to likewise give a separate recognizable proof number to its individuals

3. ***Manage Periodicals***: It means stocks that arrive on a daily basis like newspapers, and magazines. the system manages them efficiently.

4. ***Reservation***: One of the most significant capacities of a Management framework is that it can assist individuals with reserving a specific thing that they need from any place by utilizing their enrolment number

5. ***Report***: One of the most significant uses of a Library system is that it produces fast reports on interest.

6. ***Damage***: If the book is damaged then the user will be charged with a fine based upon the book he/she has taken.

7. ***Request***: The user can request any book he/she wants to read so that the librarian checks and takes actions by providing an offline copy.

1.6 Definitions and Acronyms:

SRS- Software Requirement Specification
PHP-Hypertext Preprocessor
RAM- Random Access Memory
RDBMS-Relational Database System
OS- Operating Systems
CRUD- Create, Read ,Update ,Delete

2. Overall Description

2.1 Infrastructure Requirements:

Server:

This is for 10,000 users. If users are more then we have to increase the specifications.

RAM	64 GB
Graphics	Not Required
No .of processor	Multicores(16 Cores Minimum)
Secondary Storage	If we use database then it is not required. If we don't use then we require 3-4 TB data.
Periphals	Basic I/O devices
Speed	Min. 2.2 GHz
Processor	Intel i7 Processor

Client:

Browser	Chrome/Firefox
Processor	Pentium
Speed	1GHz
RAM	1GB
Secondary Storage	20 GB
Display Adapter	Required(480p)

1. Database:

Preferably, RDBMS is required because in LMS we often perform CRUD(Create,Read,Update,Delete)operations .

2. Web Server:

A basic web server is enough.

3. Software Requirements:

OS: Windows/Linux

Web Server: Apache

Database: MySQL

Scripting Language: PHP

2.2 Literature Survey:

Title	Overview	Positive Aspects	Limitations
Java, JSP, And MySQL Project On Library Management System	Here, this project's main aim is to develop a computerized system to maintain all the daily work of the library	This project has many features which are generally not available in normal library management systems like the facility of user login and a teacher login.	This software is not suitable for large systems means it's a small project
Python, Django and MySQL Project on Library Management System	This project's uniqueness is that it takes queries from students.	Through this project, it will be easy to manage accounts and various details of students and employees working under the library along with the record of books. This project is secure where the admin can perform each action but can be able to view only his data.	This project uses Django which is not known to many students.
College Library Management	It is a simple college library management system with its main aim is to get the correct information about a particular Students and books are available in the library.	The maintenance of the records is made efficient, as all the records are stored in the ACCESS database, through which data can be retrieved easily.	-

Online Library Management System	The software is for the automation of the library.	Any education institute can make use of it for providing information about the author, the content of the available books. It can be used in offices and modifications can be easily done according to requirements.	Fast report generation is not possible. No central database can be created as information is not available in the database.
LIBRARY MANAGEMENT SYSTEM	The library management system is a project which aims in developing a computerized system to maintain all the daily work of library.	It has the facility of an online notice board where teacher's students can put up information about workshops or seminars being held in our college's librarian after proper verification from the concerned institution organizing the seminar can add it to the notice board.	-

2.3 Assumptions and Dependences:

The product needs the following third-party product.

- MySQL server to store the database.
- PHP to develop the product.

3. System features:

3.1 Functional Specification:

The next is the beneficiary, by whom the library is being accessed, and who serves as a purpose for this system. Its attributes include:

1. The name of the student or teacher, who will get the book issued, or who will return the book.
2. The user's unique college or university roll number i.e. the id. The same is applicable to teachers also, with their unique id.
3. This refers to the user's physical area of residence. It is a composite attribute.
4. To indicate the amount of fine he/she has to deposit and keep it up to date so that he/she is aware of the payment to be made at the end of the year or session.

3.2 External Interface Requirements:

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

It allows users to view quick reports like Book Issued/Returned in between particular times.

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 the standard defined.

The design should be simple and all the different interfaces should follow a standard.

3.3 Non-Functional Requirements:

Product Requirements

• ***Usability Requirement***

The system shall allow the users to access the system from the Internet using HTML or it's derivative technologies like XML/CSS. The system uses a web browser as an interface. Since all users are familiar with the general usage of browsers, no special training is required.

• ***Availability Requirement***

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

• ***Efficiency Requirement***

Mean Time to Repair (MTTR) - Even if the system fails, the system will be recovered back up within an hour or less.

• ***Accuracy***

The system should accurately provide real-time information taking into consideration various concurrency issues. The system shall provide 100% access reliability.

• ***Performance Requirement***

The information is refreshed at regular intervals depending upon whether some updates have occurred or not. The system shall respond to the member in not less than two seconds from the time of the request submission. The system shall be allowed to take more time when doing large processing jobs. Responses to view information shall take no longer than 5 seconds to appear on the screen.

• ***Reliability Requirement***

The system must be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data.

• ***Maintainability and Portability Requirements***

Changes (new patron additions, password changes, database changes) must be verified once per day at least. The system should automatically provide notification to patrons by email about items overdue, reservation results, availability of reserved items, etc…

3.4 Feasibility Study:

- **Market feasibility**
  This project will be very helpful for students. They can use this software for accessing books online. Nowadays this type of software would be very feasible.
- **Technology feasibility**
  Technology Requirements – for accessing software on mobile or PC
  Used technologies - HTML, CSS, JavaScript, PHP, MySQL
- **Operational feasibility**
  This project will be well suited for the Education sector and can also be useful for public libraries. People can also check if a book is available in the library beforehand before going to the library.
- **Time feasibility**
  This project can be developed in four weeks. In this period of time, we are going to develop a website by identifying what are all the requirements we can address in a website.
- **Projections**
  By using this software, a student can log in and can viewbooks, search, and request books.