LIBRARY MANAGEMENT SYSTEM

PROBLEM STATEMENT:

A college library management is a project that manages and stores books information electronically according to student's needs. The system helps both students and library manager to keep a constant track of all the books available in the library. It allows both the admin and the student to search for the desired book. It becomes necessary for colleges to keep a continuous check on the books issued and returned and even calculate fine. This task if carried out manually will be tedious and includes chances of mistakes. These errors are avoided by allowing the system to keep track of information such as issue date, last date to return the book and even fine information and thus there is no need to keep manual track of this information which thereby avoids chances of mistakes.

Thus, this system reduces manual work to a great extent allows smooth flow of library activities by removing chances of errors in the details.

Software Requirement Specification(SRS)

1 Introduction:

1.1 **Purpose of this Document:**The purpose of this project is to develop an application that will automate the whole procedure of a library. The software that would be developed should have facilities like Add / Delete Members, Add / Delete Books, Issue & Return. The application should be secured, as well as with limited access. The main requirement of the project will be the ease of use, besides being the most efficient and effective tool for the purpose. The application should be user friendly. It should be robust and scalable. An automated solution would be very beneficial to the organization, as it would bring structure to the whole process so that it can be traced for any kind of query. Also, an automated solution will lead to optimal utilization of the available resources, reducing duplication of effort, increasing efficiency and minimizing time-delays.

1.2 **Scope of this document** – For members:Facility for search of books on access number,title,author,subject,keyword.FacilityforISSUE/RETURNbooks.Facility for RENEWAL of books.For Library Staff:automatic installation,simple and intuitive GUI for performing all functions,short-cut keys and point-and-click operation,security features like access control using passwords and login-i.d,automatic calculation of late fee,facility to ADD/DELETE members,library staff and books and maintain an easy record of all these.

1.3 **Overview** – The rest of the document deals with all the main features of this software. It not only describes various functions but also gives details about how these functions are related to each other. Apart from the data flow diagrams, the document also contains cost estimates for developing this system. Various risks associated with the system have also been mentioned along with the ways to mitigate them.The timeline chart describing how the entire project was scheduled has been attached. At the end a pseudo code for the customer management module" has been provided. A flow graph has been generated corresponding to this module and test cases that were used to test the system have also been mentioned.

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

1.4 **Functional Requirements:** **Login**:Description: Staff member will login to the system. The user must be registered in the system before login.Input: Enter the username and password.Output: Staff will be able to use the features of software.Processing: Username and password will be checked by the system. If they are incorrect a message will be displayed.**Add/Remove books:**Description: The staff can add or remove book by entering details.Input: Enter the book detail you want to remove or add within the stock.Output: Confirmation of addition or deletion and update list of books available.Processing: The details of books must be right in order to add them else there will be problems in future. **Search**:Description: The users can search a book by entering book details such as author's name, book name etc.Input: Enter the details you know about the book.Output: The list of available books is displayed.Processing: A message is displayed if the book related to the entered details is not available.**Issues book:**Description: The staff member checks the availability of book which the member want to get issued.Input: Enter book code.Output: Confirmation for book issue or apology for failure in issue.Processing: If selected book is available then the book will be issued and the record is updated else error will be displayed. **Return book**:Description: The member wants to return the book.Input: return the book to the library.Output: The record will be updated.Processing: If book is not returned on the time then fine is calculated. **Fine:**Description: If book is not returned on the time by member then fine is charged on per day basis.Input: check for the fines.Output: Details about fines on the book issued by the staff.Processing: The fine will be calculated, if it crossed the date of return.

1.5 **Interface Requirements:** Various GUI elements like forms, images and standard buttons will be included in the User Interface.

1.6 **Performance Requirements:** 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 shoulf 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.

1.7 **Design Constraints:S**oftware Constraints: The application shall meet the general standards of web applications.

Hardware Constraints: There is no hardware constraints identified at this point.

Acceptance Constraints:

To validate the system, the developers must complete the following:

1. Demo the working system and any features upon request.

2. Prove that all the significant functional requirements are met.

3. Provide sufficient test cases to show that the system is complete and correct.

The system must be designed to allow web usability. That is, the system must be designed in such a way that will be easy to use and visible on most of the browsers.

2 **Non-Functional Attributes:** **Reliability:** The application would efficiently store all the information related to the various processes in the system and output the relevant information. **Availability:** The application would be available to all the employees of the organizations with an authorized access to the workstations and those who are subject to theauthorizationpermissions. **Security:** The system would have adequate security checking through the authentication of the users. The reports would only be available to the employees of the library as per their specific requirements. **Maintainability:** The software should not require any additional maintenance. If any errors occur, the user should be able to login again with his credentials. The system shall be flexible enough to add new modules and upgrade the existing modules.

3 **Preliminary Schedule and Budget:** In this, initial version and budget of project plan are explained which include overall time duration required and overall cost required for development of project.