North South University

Department of Electrical & Computer Engineering

CSE 327: Software Engineering
Section 05
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SOFTWARE REQUIREMENTS SPECIFICATION

LIBRARY MANAGEMENT SYSTEM

by

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CONTENTS

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1 INTRODUCTION

1.1 Purpose

This is the Software Requirements Specification (SRS) for the DLS (Library Management System). The purpose of this document is to convey information about the application's requirements, both functional and nonfunctional, to the reader. This document provides:

(a) A description of the environment in which the application is expected to operate.

(b) A definition of the application's capabilities.

(c) A specification of the application's functional and nonfunctional requirements.

The document is intended to serve several groups of audiences:

- First, it is anticipated that the SRS will be used by the application designers. Designers will use the information recorded here as the basis for creating the application's design.

- Second, the client for the project, the library manager in our case, is expected to review this document. The SRS will serve to establish a basis for agreement between the client and development team about the functionality to be provided by the application.

- Third, the application maintainers will review the document to clarity their understanding of what the application does.

1.2 Intended Audience

The document is designed for the developers of the system, librarians, admin and members.

1.3 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 of librarians and library user. 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's especially useful for nay educational institute where modifications in the content can be done easily according to requirements.

1.4 Product Perspective

Library management system is used for Library Manager/Admin, Librarian, and Library User.
The system is self-contained. However, it is possible to exchange data with other system through external interface if required. The following is a typical system diagram:
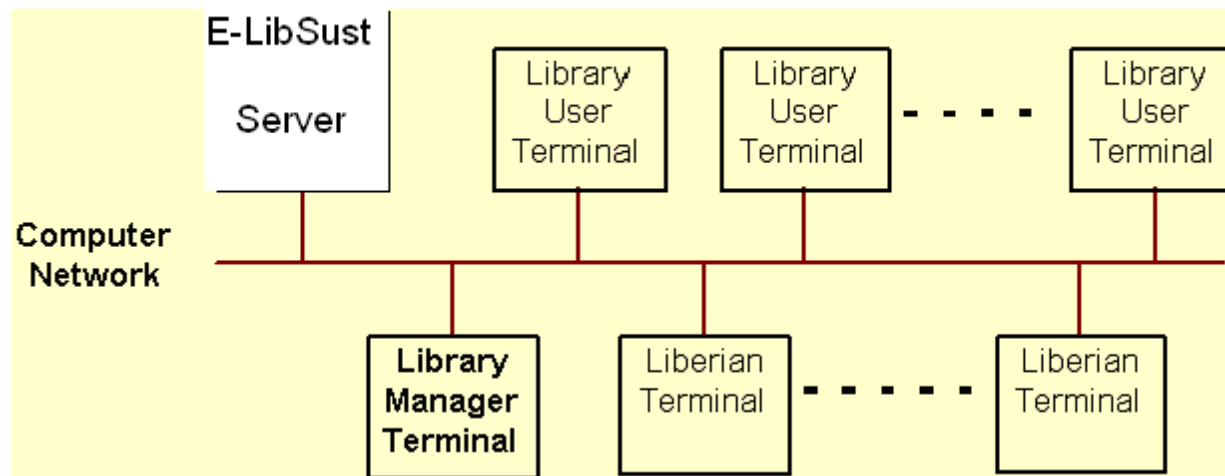
Figure: System Diagram.

1.5 User Characteristics

The three types of user for the library management system are:
- Library Manager
- Librarian
- Library User

The following table describe general users' characteristics that will affect the functionality of the software product.

2 OVERALL DESCRIPTION

Library Management System is a replacement for the ordinary library management systems which depend on paper work for recording book and user's information.

2.1 User Classes and Characteristics

We have 3 levels of users:

i. Librarian:
- Add new book
- Remove books
- Update details of books

ii. Member:
- Issue book
- Reserve book
- Return book

iii. Admin:
- Manage employee stuffs
- Manage member stuffs

2.2 User Needs

By a function like 'Maintain Book Information' librarian should be able to add or remove a book. Librarian also needs to manage the books with book information like book name, author name, publisher's name, date/ year of publication etc.

If the searched book is available, a member should be able to issue that book and return it within the specific timespan. A member needs to reserve the desired book if it is not available.

And finally, the admin needs to add or remove library staff to the system, manage their attendance, salary and other related stuffs. The admin should also be able to add or remove library members, keep track of the books when they are issued with other related stuffs.

2.3 Operating Environment

Library Management System is a website which shall operate in any modern-day operating systems with proper PC requirements.

2.4 Constraints

Addition, removal or other related matters of the staff as well as the members should be recorded and updated properly.

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

2.5 Assumptions

We will use JAVA programming language to implement this Library Management System. The interface of our Library Management System should be user friendly and easy to use. The add, remove or search mechanism should be simple and fast as well.

3. REQUIREMENTS

3.1 Functional Requirements

1. Issuing the books

2. Return the books

3. Search the stock of books

4. Record of books issued and returned

5. Calculate fine if required

Librarian:
Record book: This action is done to add new book to library book collection.

Delete / modify book: This event is to delete an existing book or modify its information.

Delete member: Admin can delete a member due to some specific rules.

Return book: Admin should confirm the return of books borrowed by members.

Members:
Register: When new member or user enters for the first time then he has to register.

Extending borrowing deadline: Member can extend the borrowing time to some limit decided by Admin.

Common Functions:
Login: Both Admin and members must be logged in before they modify any information.

Search for book: When user or admin wants to search on some book by name, author or subject etc.

3.2 Non-Functional Requirements

3.2.1 Performance Requirements

1.Login/Registration will not take more than 10 seconds.
2.And also the system shall accommodate high number of books and members without any fault.

3.2.2 Safety and Security Requirements

1.Database will be secured by authentication process.
2.Unauthorized access will be avoided.
3.Database backup will be maintained.
4.System use shall not cause any harm to members.

3.2.3 Software Quality Attributes

1.System will be reliable.
2.System can be maintained easily

3.2.4 Error Handling

Library Management System shall handle expected and non-expected errors in ways that prevent loss in information.