Software Requirements Specification

For

LIBRARY MANAGEMENT SYSTEM

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 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 document is developed after a number of consultations with the client and considering the complete requirement specifications of the given Project. The final product of the team will be meeting the requirements of this document.

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1.2 Document Conventions

The following are the list of conventions and acronyms used in this document and the project as well:
Administrator: A login id representing a user with user administration privileges to the software

- **User:** A general login id assigned to most users
- **Client:** Intended users for the software
- **SQL:** Structured Query Language; used to retrieve information from a database
- **SQL Server:** A server used to store data in an organized format
- **ASP:** Active Server Pages: A Web Page formatted on the server and delivered to the browser.
- **Layer:** Represents a section of the project
- **User Interface Layer:** The section of the assignment referring to what the user interacts with directly.

- **Application Logic Layer:** The section of the assignment referring to the Web Server. This is where all computations are completed.
- **Data Storage Layer:** The section of the assignment referring to where all data is recorded
- **Data flow diagram:**It shows the dataflow between the entities.
- **Use Case:** A broad level diagram of the project showing a basic overview
- **Boolean:** A true/false notation
- **Interface:** Something used to communicate across different mediums
- **Unique Key:** Used to differentiate entries in a database

1.3 Intended Audience and Reading Suggestions

The intended audiences for this document are:

- The team members of Innovative library Solutions.
- The administrative staff of Amal Jyothi College of Engineering who is the client.
- The Project Supervisor Mr.Pramesh Khadka and Project Coordinator Mr.Hari Gande.

This document will be reviewed frequently by the above audiences to check if the different phases of the project are being completed by meeting the given requirements.

If there are any changes in the requirements in the course of the project they must be included in this document by making the necessary changes.

1.4 Project Scope

Project Title : Library Management System
Date : 15-02-2021 Prepared By : Vimal Thomson

Project Justification:

This project is basically updating the manual library system into a internet based application so that the users can know the details of their account ,availability of books etc.,

Product Characteristics and Requirements :

1. Secured database.
2. User tracking
3. Search feature
4. Calculating fines
5. Checking the availability of books.
6. Students will get an E-mail before the due date in order to avoid fines

Project Management Deliverables:

Project plan, Research finding report, Work breakdown structure, Scope statement, Project charter, Training manuals, lessons learned report etc.,

Product-related deliverables :

Research reports ,design documents, software code, hardware ,test plan, project benefit measurement plan etc.,

Project Success Criteria: Our main goal is to complete this project within allotted dead line and also within the budget allotted. It is necessary to develop a method for capturing the benefits while the Library management system is being developed, tested, and after it is

rolled out. If the project takes a little longer to complete or costs a little more than planned, the firm will still view it as a success if it has a good payback and helps promote the firm's image as an excellent management organization

1.5 References

a) IEEE 830-1998 standard for writing SRS document.
b) Fundamentals of Software Engineering, II ed. by Rajib Mall.

2. Overall Description

2.1 Product Perspective

The proposed **Library Management System** which is being developed by Innovative Library Management Solutions team is an on-line Library Management System. This System will provide a search functionality to facilitate the search of resources. This search will be based on various categories viz. book name or the ISBN. Also Advanced Search feature is provided in order to search various categories simultaneously. Further the library staff personnel can add/update/remove the resources and the resource users from the system.

The University of Ballarat has various campuses distributed across Australia. Further each branch is managed individually and locally by that branch library staff. The System should reflect and support this decentralized structure. A provision should further be allowed to add a branch. The System will also have an ADMIN who has full-fledged rights with regards to managing resources across branches – such as

transferring books across these branches. The users can know the number of available books, information about their account etc.,

2.2 Product Features

There are two different users who will be using this product:

- Librarian who will be acting as the administrator
- Student 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 student
- 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
- Add books and their information of the books to the database
- Edit the information of the existing books.
- Can check the report of the issued Books.
- Can access all the accounts of the students.

The features available to the Students 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

2.3 User Classes and Characteristics

There are various kinds of users for the product. Usually web products are visited by various users for different reasons.

The users include :

- Students who will be using the above features by accessing the Library online.
- Librarian who will be acting as the controller and he will have all the privileges of an administrator.

2.4 Operating Environment

The product will be operating in windows environment. Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

2.5 Design and Implementation Constraints

he Product is developed using ASP. The backend database for this SQL Server. The product is accomplished with login facility so that specific function is available to specific student.

2.6 User Documentation

The product will include user manual. The user manual will include product overview, complete configuration of the used software (such as SQL server), technical details, backup procedure and contact information which will include email address. There will be no online help for the product at this moment. The product will be compatible with the Internet Explorer 6.0 or higher. The databases will be created in the Microsoft SQL server 2000

2.7 Assumptions and Dependencies

The product needs following third party product.

- *Microsoft SQL server to store the database.*
- *ASP to develop the Product*

3. System Features

3.1. Database – Storage

13.1.1. Description and Priority

Proposed Database is intended to store, retrieve, update, and manipulate information related to university which include

- Books availability
- Staff information
- Student details
- My Account
- Calculation of fines

23.1.2. Stimulus / Response Sequences

Responses for Administrator: The administrator can Login and Logout. When the Administrator Logs into the Library system. The system will check for validity of login .If the Login and password are valid, the response to this action is the administrator will be able to modify, view, add, deleting and all other functions that can be performed on the database.

3.2. Functional Requirements

This section gives the list of Functional and non functional requirements which are applicable to the Library Management System.

3.2.1 Interface Requirements

This section describes how the software interfaces with other software products or users for input or output.

GUI

Describes the graphical user interface if present. This section should include a set of screen dumps or mockups to illustrate user interface features.

1. **Description**
   The user interface must be customizable by the administrator
2. **Criticality**
   This issue is essential to the overall system. All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined.
3. **Technicalissues**
   In order to satisfy this requirement the design should be simple and all the different interfaces should follow a standard template. There will be the possibility of changing colors and images, plus switching between interfaces with the minimum impact for the users.
4. **Risks**
   To reduce the circumstances under which this requirement might not able to be satisfied, all the designers must have been

developed web sites previously and they must be aware of html restriction and cross browsers implementations before starting the designing. In order to reduce the probability of this occurrence the entire design team will be trained in basic html development and macromedia fireworks, this tool will be used instead of Photoshop.

5. **Dependencies with other requirements**
   All user interfaces should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

4.Non Functional Requirements

4.1. User Interfaces

4.2. Hardware Interfaces

Server Side:

- Operating System: Windows 9x/xp ,Windows ME
- Processor: Pentium 3.0 GHz or higher
- RAM: 256 Mb or more
- Hard Drive: 10 GB or more

Client side:

- Operating System: Windows 9x or above, MAC or UNIX.
- Processor: Pentium III or 2.0 GHz or higher.
- RAM: 256 Mb or more

4.3. Software Interfaces

- **Database:** SQL Server.
- **Application:** ASP (Active Server Pages)
- **Web Server:** IIS (Internet Information Services (IIS) is a powerful Web server that provides a highly reliable, manageable, and scalable Web application infrastructure)

4.4. Communications Interfaces

The Customer must connect to the Internet to access the Website:

- Dialup Modem of 52 kbps
- Broadband Internet
- Dialup or Broadband Connection with a Internet Provider.

5.Other Nonfunctional Requirements

5.1 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 interact 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.

5.2 Safety Requirements

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

5.3 Security Requirements

We are going to develop a secured database for the university .There are different categories of users namely teaching staff,administrator,library staff ,students etc.,Depending upon the category of user the access rights are decided.It means if the user is an administrator then he can be able to modify the data,delete,append etc.,All other users other than library staff only have the rights to retrieve the information about database.

Software Quality Attributes

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

5.4 Hardware Constraints

The system requires a database in order to store persistent data. The database should have backup capabilities.

5.5 Software Constraints

The development of the system will be constrained by the availability of required software such as web servers, database and development tools.

The availability of these tools will be governed by the University of Ballarat.

The most recent versions of software development tools may not be installed at the University of Ballarat.

5.6 Design Constraints

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.