Software Requirements Specification

for

Library Management System

Version 1.1 approved

Prepared by Li Zhenbang

Waseda University

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Revision History

Name	Date	Reason For Changes	Version
Li Zhenbang	2017.11.7	created	1.0
Li Zhenbang	2017.11.13	Updated some things	1.1

1. Introduction

1.1 Purpose

The main objective of this document is to illustrate the requirements of the project in OOD.
Library Management system
The document gives the detailed description of the both functional and nonfunctional requirements proposed by the client. The final product of the team will be meeting the requirements of this document. 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.

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 froma database

Oracle MySQL :Cloud Service is built on MySQL Enterprise Edition and powered by Oracle Cloud, providing an enterprise-grade MySQL database service.

Layer:
Represents a section of the project

User Interface Layer:
The section of the assignment referring to what the user interacts with directly.

JDBC: The Java Database Connectivity The Java Database Connectivity API is the industry standard for database-independent connectivity between the Java programming language and a wide range of databases

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

1.3 Intended Audience and Reading Suggestions

This system is for the assignment of OOD course, Prof. Koyanagi.↵

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 Product Scope

The system is for use with simple school library models

1.5 References

Object-Oriented-Analysis-and-Design-with-Applications-3rd-Edition

2. Overall Description

2.1 Product Perspective

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 there source users from the system
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 Functions

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

Update 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 theLibrary

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.
But I will separate the roles in the designing document.

2.4 Operating Environment

The product will be operating in a Java JVM. Also it will be compatible with the Java jar project. What's more, you should have a MySQL in your computer.

2.5 Design and Implementation Constraints

The Product is developed using JDBC. The backend database for this MySQL 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 JVM6.0 or higher. The databases will be created in the MySQL server 5.7.

2.7 Assumptions and Dependencies

The product needs following third party product.
MySQL server to store the database.
 Java JVM to develop the Product

3. External Interface Requirements

3.1 User Interfaces

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.Technical issues

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.
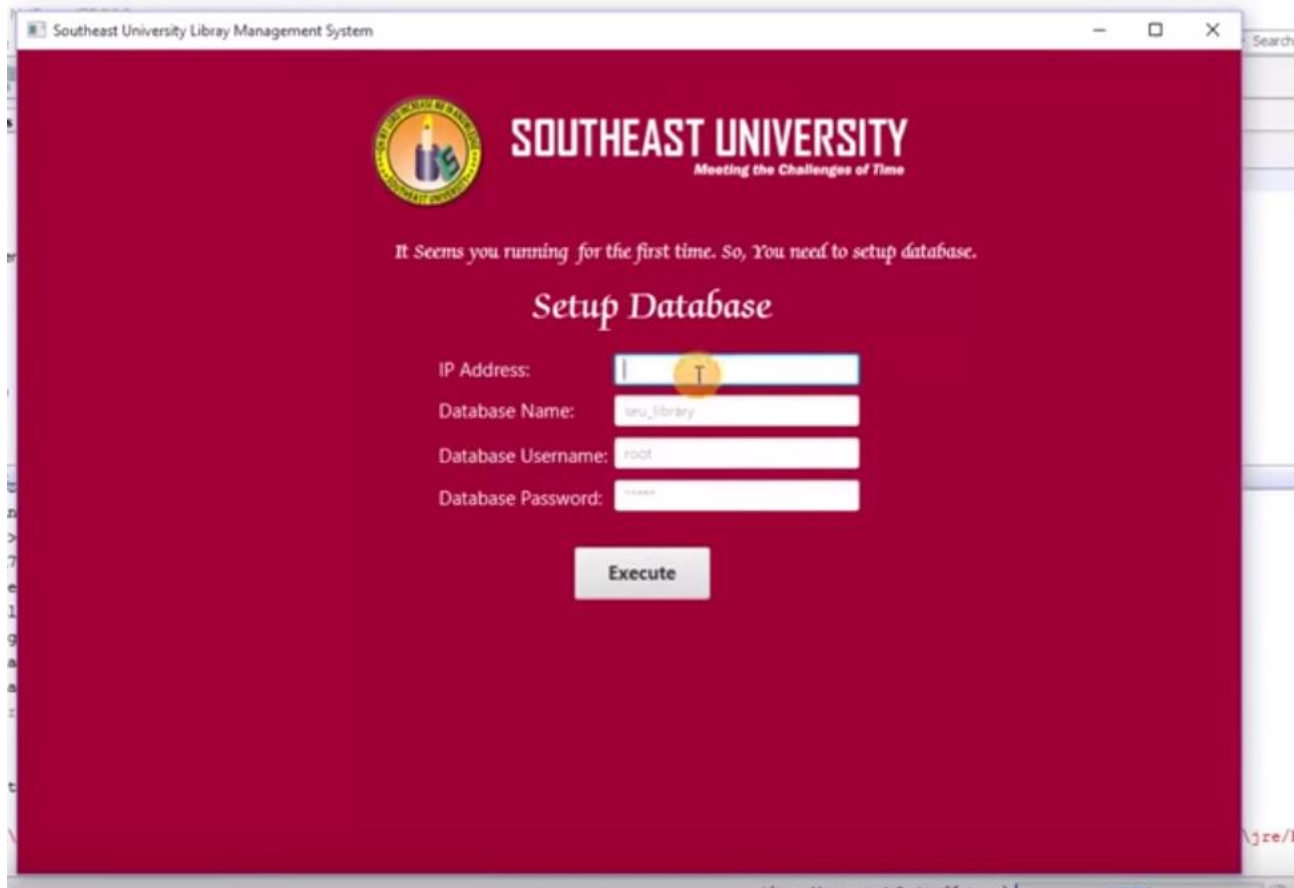
The Reference Model in the website

3.2 Hardware Interfaces

Server:
Operating System: Windows xp, Windows ME or higher

Processor: Pentium 3.0 GHz or higher

🔎

RAM: 256 Mb or more

🔎

Hard Drive: 10 GB or more

Client:
Operating System: Windows 9x or above, MAC or UNIX.

Processor: Pentium III or 2.0 GHz or higher.
RAM: 256 Mb or more

3.3 Software Interfaces

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

Books availability

Admin information

Student details

My Account?

3.4 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.

4. System Features

4.1 System Feature 1

4.1.1 Description and Priority

This is the first MIS system in Java, and the appearance of the system would be great and the interior function is comprehensive. All the system suits for the OOD analysis and the course requirements.

4.2 System Feature 2 (and so on)

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 Software Quality Attributes

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

5.5 Business Rules

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

6. Other Requirements

Appendix A: Glossary

MVC：The Model-View-Controller (MVC) is an architectural pattern that separates an application into three main logical components: the model, the view, and the controller.