

Software Requirement Specification

4C Knowledge Book Club



IT13112660

D.S.Jayasekara

IT16126220

S.J.Dissanayake

IT16149472

M.P.M.Wickramarathne

Faculty of Computing

Sri Lanka Institute of Information Technology

Table of Contents

Table of Contents	i
1. Introduction.....	1
1.1 Purpose	1
1.2 Document Conventions	1
1.3 Intended Audience and Reading Suggestions	1
1.4 Product Scope.....	2
2. Overall Description.....	3
2.1 Product Perspective	3
2.2 Product Functions.....	4
2.3 User Classes and Characteristics.....	5
2.4 Operating Environment	5
2.5 Design and Implementation Constraints	7
2.6 Assumptions and Dependencies	7
3. External Interface Requirements	8
3.1 User Interfaces.....	8
3.2 Hardware Interfaces	8
3.3 Software Interfaces.....	8
3.4 Communications Interfaces	8
4. System Features.....	9
5. Other Nonfunctional Requirements.....	10
5.1 Performance Requirements	10
5.2 Safety Requirements.....	10
5.3 Security Requirements	10
5.4 Software Quality Attributes	10
Appendix A: Glossary.....	12
Appendix B: Analysis Models.....	13

1. Introduction

1.1 Purpose

This web application is an online book club which includes various kinds of books belonging to categories such as scientific fictions, religion, art, middleware, politics, image processing and artificial intelligence. People can find out the books which are available in the club by simply registering to the community. The goal is to provide a friendly environment to maintain details of books under categories and community members of this book club.

1.2 Document Conventions

- Entire document should be justified
- Convention for main title
 - Font face: Times New Roman
 - Font style: Bold
 - Font size: 18
- Convention for sub title
 - Font face: Times New Roman
 - Font style: Bold
 - Font size: 14
- Convention for body
 - Font face: Times New Roman
 - Font size: 12

1.3 Intended Audience and Reading Suggestions

This document is intended for the developers, users and documentation writers. The document contains the ER diagram for the web application which describes database architecture of the system, use case diagram, which describes the use cases of the system and class diagram which describes the structure of the application.

1.4 Product Scope

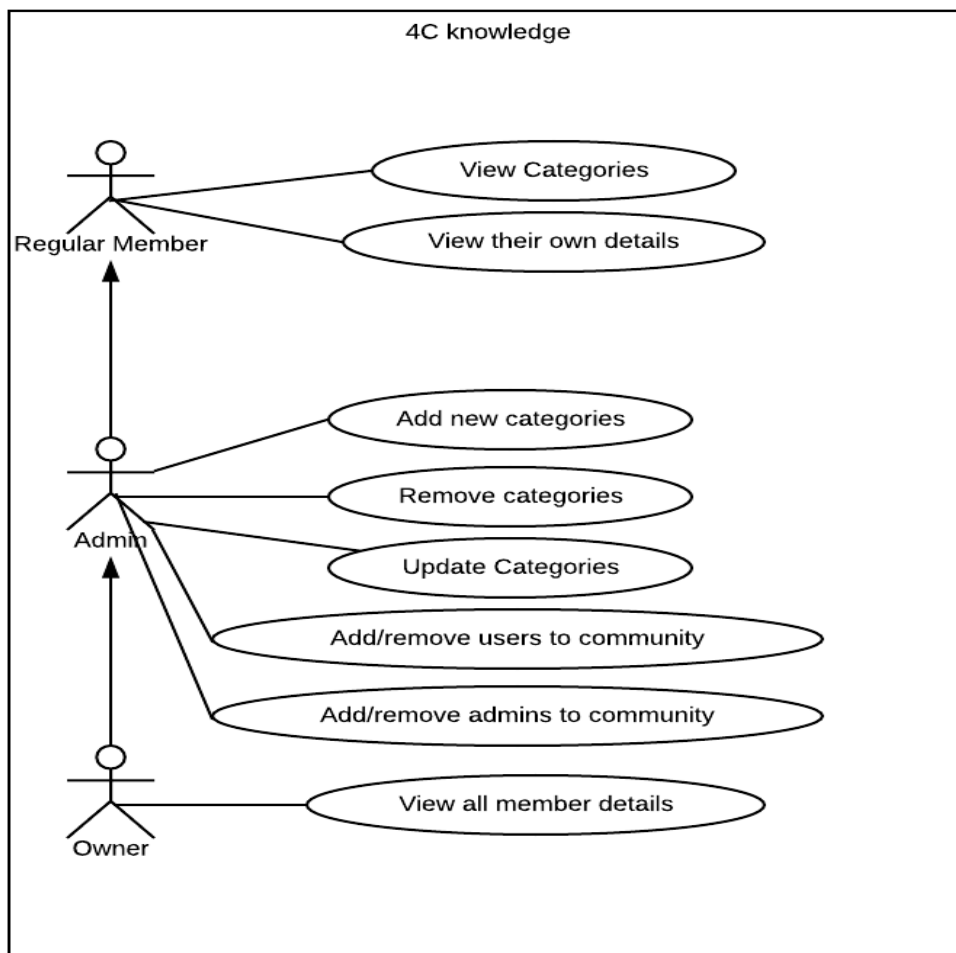
The application allows community members to find out books according to their preference. To see the available books in each category, a user has to register to the service. Once a user is signed up for the service he/she can surf the books. Also, users can view their details they used when signing up for the service. The system keeps track of member details such as their personal details and interests.

2. Overall Description

2.1 Product Perspective

The system is developed under the requirements of a single person, therefore, not related to any kind of company and is a new, self-contained product. Below is the use case diagram for the product.

- In order to take these actions, each user should login first.



2.2 Product Functions

This application manages the books available in the book club and keeps records of the user details of the club in the database. Whenever in need, the valid users are allowed to view their details according to user levels.(Described in 2.3)

Function 1: Registration

Input: User details (Name, DoB, Permanent Address, Current Address, Mobile, Telephone, Email, Password, Interests).

Output: User ID with Valid user account.

Process: Create a user Id, Validating User name, Password, Email, phone number and store it in the database, prompt a message displaying User registration successful.

Function 2: Login

Input: User name (email), Password.

Output: Logging in to the system.

Process: Verifying user name, password and direct in to the Home page.

Function 3: View member details

Input: clicking view details

Output: member details

Process: views list of details according to the level of the user.

Use case scenarios:

Use case name	: Login
Actors	: Regular User
Pre-requisites	: Register
Main Success Scenario	:

- 1) System provides the user with login interface
- 2) User enters credentials and log in
- 3) System directs to home page

Extensions: 2) a. If the user enters invalid credentials, system redirects to login page.

Use case name : Register

Actors : User

Pre-requisites : None

Main Success Scenario :

- 1) System provides sign up interface to the user
- 2) User enters details and sign up
- 3) If the registration is successful system prompts successful message and his/her details, If not user need to re-enter details

Use case name : Add new categories

Actors : Admin

Pre-requisites : Login

Main Success Scenario :

- 1) Admin login to the system
- 2) Add new categories to the system
- 3) System prompts successful message

2.3 User Classes and Characteristics

According to the different types of user levels, following services will be provided. The user can be either the owner of the club, an admin or a member of the club.

Owner:

- Can view different categories of books in the club
- Can view list of books available in each category
- Can view all the details of all the community members

Community Admin:

- Can view different categories of books in the club
- Can view list of books available in each category
- Can view only the name, permanent address and mobile number of all the community members
- Can add new categories
- Can remove existing book categories
- Can add users/ admins to the community
- Can remove users from the community

Regular User:

- Can view different categories of books in the club
- Can view list of books available in each category
- Can view their own details only

2.4 Operating Environment

The system operates on both Linux and Windows environments, and is compatible with all popular browsers such as Mozilla Firefox, Google chrome, Microsoft edge etc. The basic input devices required are keyboard, mouse and output device is monitor. To use the service internet connection is needed.

2.5 Design and Implementation Constraints

This web application is developed with Java EE which is supported by sun microsystem, MySQL server as the backend to store the database. The originally developed platform is Linux OS and can be run on Windows as well.

- OS: Linux (fedora)
- Language: JavaEE
- DB: MySQL
- IDE: Eclipse
- Automation: Maven

2.6 Assumptions and Dependencies

Assumptions:

- The information of all the users, book categories must be stored in the database that is accessible by the web application.
- The system should provide fast access to the database
- The system should be accessible any time
- Users may access from any computer device which has internet browsing capabilities and an internet connection
- To do actions users must have sign up for the system and use their valid usernames and passwords

Dependencies:

- The admin should have proper understanding of the product
- The specific hardware and software due to which the product will be run
- Any update regarding a category from the club is to be recorded to the database and the date entered should be correct

3. External Interface Requirements

3.1 User Interfaces

The user interface for the software will be compatible to any browser such as Google Chrome, Mozilla Firefox or Microsoft Edge by which user can access to the system.

The user interface shall be implemented using any tool or software package like, Eclipse IDE, Netbeans IDE etc.

3.2 Hardware Interfaces

Since the application must run over the internet, all the hardware will require to connect to internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

3.3 Software Interfaces

- The web application will communicate with MySQL server for storing and retrieving data.

3.4 Communications Interfaces

The system will use the HTTP protocol for communication over the internet.

4. System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:

- User authentication and validation of members using their unique member ID
- Proper accountability which includes not allowing a member to see other member's details. (Only the owner will see all the details)
- Proper monitoring by the admin which includes updating the product categories

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The performance of the system should be fast and accurate
- The system should be able to handle large amount of data about users as anyone can create an account in the club
- The application should handle expected and unexpected errors in ways that prevent loss in information and long downtime period

5.2 Safety Requirements

The database may get crashed at any certain time due to virus or OS failure. Therefore, it is required to take the database backup so that the database is not lost.

5.3 Security Requirements

- System will have different types of users and every user has access constraints
- Every user must be registered in to the system in order to use the service
- Proper authentication should be provided
- Only the admin has the ability to add or remove any category or a user, while regular members can only see their own details
- Passwords are encrypted so that no one can hack another user's password

5.4 Software Quality Attributes

The web service is available 24/7, so that users can log into their accounts and search for the books they want at any time. Any famous browser is compatible with the application. The reliability is

high as the application will be up-to-date. The system is robust as developed in JavaEE. Any user can sign up for the community free, no payments charged.

Appendix A: Glossary

ER – Entity Relationship

UI – User Interface

DB – Database

Admin – Administrator

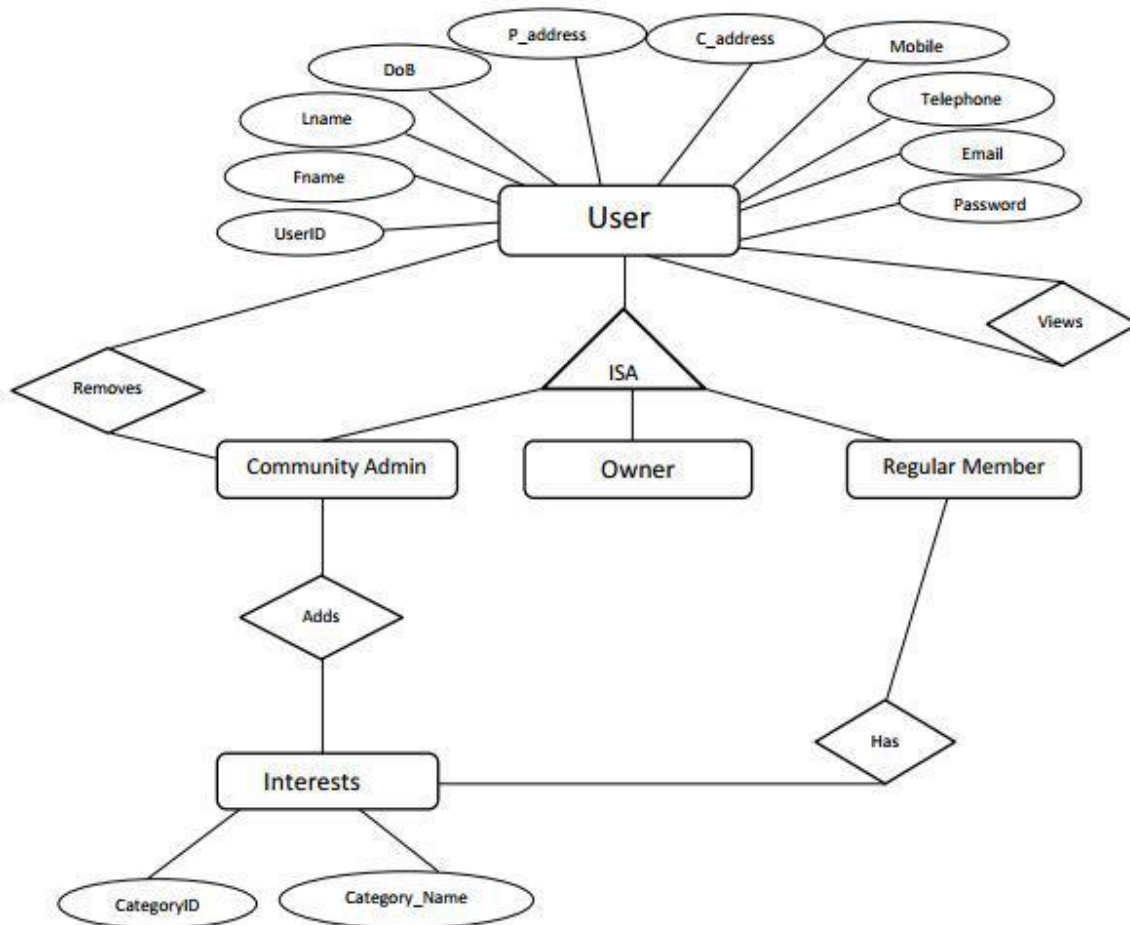
OS – Operating System

IDE – Integrated Developing Environment

SQL- Structured Query Language

Appendix B: Analysis Models

ER Diagram



Class Diagram

