SOFTWARE REQUIREMENTS SPECIFICATION

**For**

**Recipe Management System**

**Prepared by:-**

Hemarathna V

Keerthikka S

Kiruthihashree S

# Introduction

## Purpose

The main objective of this document is to illustrate the requirements of the project Recipe Management system. The document gives the detailed description of the both functional and non-functional requirements proposed by the client. The purpose of this project is to provide a friendly environment to maintain the details of recipes, making it easy for the users to organize, share and discover new recipes. The main purpose of this project is storing and organizing digital recipes for all types of menu items. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

## Document Conventions

* + - Entire document should be justified.
    - Convention for Main title

Font face: Times New Roman Font style: Bold

Font Size: 14

* + - Convention for Sub title

Font face: Times New Roman Font style: Bold

Font Size: 12

* + - Convention for body

Font face: Times New Roman Font Size: 12

## Scope of Development Project

The goal of the Recipe Management System is to completely transform how professional chefs, home cooks, and restaurant employees organize and use recipes. In order to provide flawless recipe administration and culinary innovation, this all-inclusive software will offer an intuitive interface for generating, modifying, saving, organizing, sharing, and scaling recipes.

Users may quickly browse and retrieve recipes that have been classified for effective organization through a centralized repository. While automatic recipe scaling facilitate recipe preparation, recipe sharing and collaboration capabilities foster culinary innovation and experimentation. Version control guarantees recipe consistency and nutritional information is easily accessible. To accommodate a wide range of users, a strong user management system controls permissions and user accounts.

## Definitions, Acronyms and Abbreviations

JAVA -> platform independence SQL-> Structured query Language ER-> Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment SRS-> Software Requirement Specification

## References

* + - Books

 Software Requirements and Specifications: A Lexicon of Practice, Principles and Prejudices (ACM Press) by Michael Jackson

Software Requirements (Microsoft) Second EditionBy Karl E. Wiegers

Software Engineering: A Practitioner’s Approach Fifth Edition By Roger S. Pressman

* + - Websites

[**http://www.slideshare.net/**](http://www.slideshare.net/)

# Overall Descriptions

## Product Perspective

Use Case Diagram of Library Management System

*searches*

1

1 *requests*

1

1

1..\*

\*

search\_book



1..\*

check\_limit

check\_availability

User 1

issue\_book

*request\_renew*

<<include>>

*monitors\_request*

1

*monitors\_renew* 1

1

*performs*

*give\_book*

<<include>>

0..\*

1..\*

renew\_book

verify\_member

<<include>>

*take\_book*

1

1 Librarian

Student

0..\*

1..\*

*adds\_new\_book*

*perform\_transaction\_updation*

Staff

\*

\*

return\_book

View\_logs

<<extend>>

add\_book

\*

calculate\_fine

update\_record

This is a broad level diagram of the project showing a basic overview. The users can be either staff or student.. 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. Further the library staff personnel can add/update the resources and the resource users from the

system.The users of the system can request issue/renew/return of books for which they would have to follow certain criteria.

## Product Function

Entity Relationship Diagram of Library Management System



The Online Library System provides online real time information about the books available in the Library and the user information. The main purpose of this project is to reduce the manual work. This software is capable of managing Book Issues, Returns, Calculating/Managing Fine, Generating various Reports for Record-Keeping according to end user requirements. The Librarian will act as the administrator to control members and manage books. The member’s status of issue/return is maintained in the library database. The member’s details can be fetched by the librarian from the database as and when required. The valid members are also allowed to view their account information.

## User Classes and Characteristics

The Recipe Management System caters to a diverse range of users, including home cooks, professional chefs, restaurant staff, health-conscious individuals, recipe developers, recipe bloggers/influencers, and recipe critics.

Home Cook

* Enjoys cooking and experimenting with new recipes
* Needs to organize their recipes and easily access them
* Values recipe scaling and shopping list generation features
* Appreciates recipe suggestions and inspiration
* Seeks nutritional information and dietary restrictions

Professional Chef

* Manages a large collection of recipes
* Requires recipe consistency and standardization for menu execution
* Tracks ingredient usage and costs to maintain profitability
* Collaborates with other chefs on recipe development and testing
* Utilizes recipe management tools to manage recipe versions and revisions

Recipe Developer

* Requires tools for organizing, documenting, and testing recipes
* Benefits from recipe scaling and nutritional analysis features
* Utilizes recipe management tools to manage recipe versions and revisions
* May share recipes through blogs, websites, or social media platforms

Recipe Critic

* Has a deep understanding of culinary techniques and flavor profiles
* Utilizes recipe management tools to organize and manage their reviews
* May share their recipe criticisms through blogs, websites, or social media platforms

## Operating Environment

The product will be operating in windows environment. The Library Management System is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer,Google Chrome,and Mozilla Firefox.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.

The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

## Assumptions and Dependencies

The assumptions are:-

* + - The coding should be error free
    - The system should be user-friendly so that it is easy to use for the users
    - The information of all users, books and libraries must be stored in a database that is accessible by the website
    - The system should have more storage capacity and provide fast access to the database
    - The system should provide search facility and support quick transactions
    - The Library System is running 24 hours a day
    - Users may access from any computer that has Internet browsing capabilities and an

Internet connection

* + - Users must have their correct usernames and passwords to enter into their online accounts and do actions

The dependencies are:-

* + - The specific hardware and software due to which the product will be run
    - On the basis of listing requirements and specification the project will be developed and run
    - The end users (admin) should have proper understanding of the product
    - The system should have the general report stored
    - The information of all the users must be stored in a database that is accessible by the Library System
    - Any update regarding the book from the library is to be recorded to the database and the data entered should be correct

## Requirement

Software Configuration:-

Front-end: Java with JavaFX for graphical user interface (GUI) development

Back-end: MySQL, for database management

Operating System: Windows

Programming Language: Java for both front-end and back-end development

Additional Tools: Version control system (e.g., Git)

Hardware Configuration

Processor: Intel Core i3 or equivalent (recommended)

Hard Disk: 100GB minimum

RAM: 4GB minimum

Web Server: Apache HTTP Server

Data Requirement

The Recipe Management System collects and manages a comprehensive range of data pertaining to recipes, ingredients, instructions, images, and user engagement. This data enables the system to provide users with a rich and personalized experience, facilitating recipe discovery, organization, and creation.

# External Interface Requirement

## GUI

The software provides good graphical interface for the user to enhance recipes by uploading recipe images and related images showcasing ingredients, preparation steps, or the final dish .

* + - Users can effortlessly enter recipe information using text fields, drop-down menus, checkboxes, and rating systems.
    - Robust search and filter functionalities enable users to locate recipes based on title, ingredient, category, event, or other relevant criteria
    - Filter options based on dietary restrictions, cooking time, or specific food preferences further refine search results.
    - Users can effortlessly add, delete, and edit ingredients with clear units and quantities.
    - Data import/export supports seamless recipe transfer from other recipe management systems or websites.

**Data entry:**

Users can easily enter recipe information such as title, ingredients, directions, notes and categories. This includes text fields, drop-down menus, checkboxes and rating systems. **Image Upload:**

Allow to upload recipe images and related images to show ingredients, steps or the final dish. **Search and Filter:**

Users should easily search for recipes by title, ingredient, category, event or other relevant criteria. Filter options based on dietary restrictions, cooking time or foods are helpful.

**Create and Edit Recipes:**

Users should be able to create new recipes, edit existing ones, and easily copy recipes. **Ingredients Management:**

Allow to add, delete and edit ingredients with a clear unit and quantity. **Data Import/Export:**

Allows you to import recipes from other recipe management systems or websites.

# System Features

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

Ensure secure user access through unique credentials (username/password).

Implement access levels to authorize specific actions.

Employ password encryption for heightened security.

Allow users to submit recipes with necessary details (ingredients, instructions, tags).

Validate submissions to ensure completeness of essential fields.

Provide notifications for policy violations.

# Other Non-functional Requirements

## Performance Requirement

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
    - No lag when adding ingredients or editing.
    - Handles many users and recipes without slowdown.

## Safety Requirement

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 so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

## Security Requirement

* + - System will use secured database
    - Secure login with strong passwords & multi-factor options.
    - Encrypted recipes and user information.
    - Proper user authentication should be provided
    - No one should be able to hack users’ password.
    - Regular backups for disaster recovery.

## Requirement attributes

* + - A smooth user interface guides you through every step, from adding ingredients with automatic unit conversions and substitutions to uploading delicious recipe photos and detailed notes.
    - Store all your culinary creations in one centralized digital safe, easily accessible from any device.
    - Share your recipes with loved ones or join forces to create the perfect dish together.
    - Version control ensures that everyone is on the same page and no culinary masterpiece gets lost in the digital void.

## Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

## User Requirement

The users of the system are members and Librarian of the university who act as administrator to maintain the system. The members are assumed to have basic knowledge of the computers and internet browsing. The administrators of the system should have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

The admin provides certain facilities to the users in the form of:-

* + - Backup and Recovery
    - Forgot Password
    - Data migration i.e. whenever user registers for the first time then the data is stored in the server
    - Data replication i.e. if the data is lost in one branch, it is still stored with the server
    - Auto Recovery i.e. frequently auto saving the information
    - Maintaining files i.e. File Organization
    - The server must be maintained regularly and it has to be updated from time to time

# Other Requirements

## Data and Category Requirement

There are different categories of users namely teaching staff, Librarian, Admin, 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 except the Librarian only have the rights to retrieve the information about database. Similarly there will be different categories of books available. According to the categories of books their relevant data should be displayed. The categories and the data related to each category should be coded in the particular format.

## Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Books, Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; L: Library, Librarian; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance,Perspective,Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

## Glossary

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
    - 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
    - Use Case: A broad level diagram of the project showing a basic overview
    - Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system’s cases, their attributes, and the relationships between the classes
    - Interface: Something used to communicate across different mediums
    - Unique Key: Used to differentiate entries in a database

## Class Diagram

A class is an abstract, user-defined description of a type of data. It identifies the attributes of the data and the operations that can be performed on instances (i.e. objects) of the data. A class of data has a name, a set of attributes that describes its characteristics, and a set of operations that can be performed on the objects of that class. The classes’ structure and their relationships to each other frozen in time represent the static model. In this project there are certain main classes

which are related to other classes required for their working. There are different kinds of relationships between the classes as shown in the diagram like normal association, aggregation, and generalization. The relationships are depicted using a role name and multiplicities. Here ‘Recipe’, ’Quantity’, ’User’ are the most important classes which are related to other classes.

