SOFTWARE REQUIREMENTS SPECIFICATION

For

RECIPE RECOMMODATION System

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1. Introduction

1.1 Purpose:

The purpose of the Recipe Recommendation System is to revolutionize the culinary experience by leveraging cutting-edge technology to offer personalized recipe suggestions.

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1.2 Scope of Development Project

The Recipe Recommendation System aims to cover a wide array of functionalities and user interactions, including but not limited to:

User Profiles: Allowing users to create personalized profiles with dietary preferences, allergies, and taste inclinations.
Recipe Catalog: Maintaining a comprehensive database of diverse recipes, categorized by cuisine, ingredients, dietary labels, and more.
AI Recommendation Engine: Implementing sophisticated algorithms to analyze user behavior, preferences, and interactions to suggest relevant recipes.
User Interactions: Enabling users to explore, search, save favorites, rate recipes, and share them across various platforms.
System Flexibility: Allowing for easy updates, addition of new recipes, and modifications to the recommendation algorithms based on user feedback and culinary trends.

1.3 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

1.4 References

- Research Paper
  - DEX: A High-Performance Graph Database Management System.
  - A Study on Task Management System.
  - Task and Team Management in the Distributed Software Project Management Tool
  - A component-based product data management system

2. Overall Descriptions

1. Product Perspective:

The Recipe Recommendation System in Java operates as an intelligent platform catering to culinary enthusiasts by offering personalized recipe suggestions. Its interaction involves a harmonious blend of the following elements:

AI-Driven Recommendation Engine: Utilizes Java-based AI algorithms to analyze user behavior, preferences, and historical interactions to offer tailored recipe suggestions.

Database Integration: Interacts with a robust database system, facilitated by Java frameworks, to manage an extensive collection of recipes, user profiles, and interaction data.

User Interface (UI): Employs Java-based UI frameworks to create an intuitive and user-friendly interface allowing users to explore, save, and share recommended recipes seamlessly.

2. Product Functions:

The system's functionalities are tailored to enhance user engagement and satisfaction:

User Profiles: Allows users to create and manage profiles detailing their dietary preferences, restrictions, and flavor inclinations.

Recommendation Engine: Utilizes Java-based AI libraries to analyze user profiles and interactions, providing personalized recipe suggestions based on preferences and history.

Recipe Management: Facilitates the addition, categorization, and modification of recipes using Java-backed backend processes.

User Interactions: Enables users to search, view, save, rate, and share recipes across various platforms via a Java-based interactive UI.

3. User Classes and Characteristics:

The system caters to distinct user classes with specific functionalities:

Regular Users: Utilize the system for personalized recipe suggestions, exploring, saving favorites, and engaging with recipes.

Administrators: Manage and update the recipe database, adding new recipes, categorizing content, and overseeing system functionality.

4. Operating Environment:

The Recipe Recommendation System operates seamlessly within the Java ecosystem:

Software Configuration: Utilizes Java as the primary programming language, integrating AI libraries and frameworks for recommendation algorithms.

Operating System: Compatible with Windows, macOS, and Linux environments.

Hardware Configuration: Recommends a standard hardware setup, including a dual-core CPU, 4GB RAM, and sufficient storage.

5. Assumptions and Dependencies:
The system operates based on certain assumptions and dependencies:

Error-Free Coding: Assumes meticulous development practices ensuring bug-free functionality.

User-Friendly Interface Design: Dependency on Java-based UI frameworks to create an intuitive and engaging user experience.

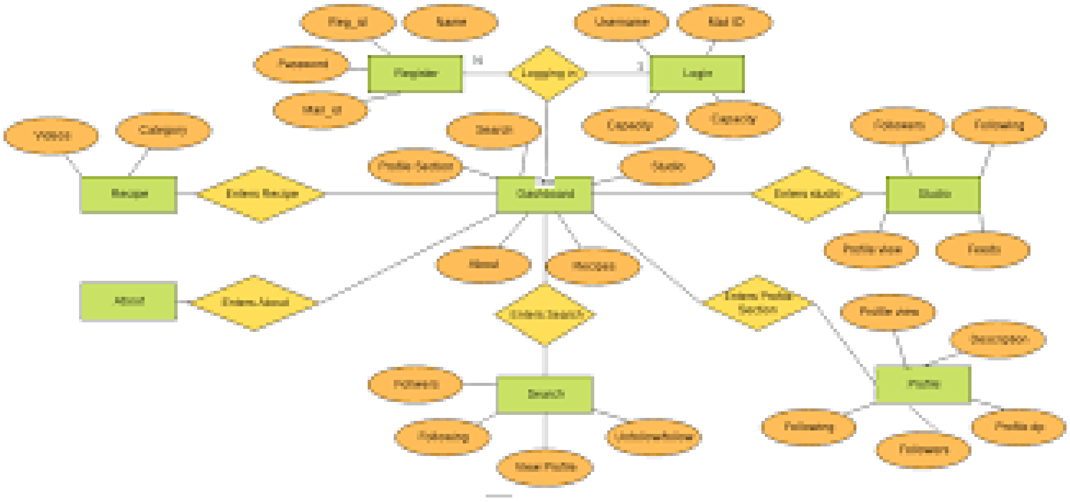
Robust Database Handling: Dependent on the functionality and reliability of the Java-integrated database management system.

6. Requirements:
The Recipe Recommendation System in Java requires specific configurations and functionalities:

Software Configuration: Utilizes Java with AI libraries for frontend and backend development, and MySQL for database management.

Hardware Configuration: Suggests a standard setup for optimal performance, including processor, RAM, and storage specifications.

Entity Relationship Diagram of Library Management System



Recipe represents each recipe in the system, containing details like title, description, and instructions.
Category contains various recipe categories.
Ingredient holds the details of ingredients used in recipes.
User stores user information like usernames, emails, and passwords.
Rating associates a rating given by a user to a specific recipe.

Entities are connected through relationships. For instance:

Recipe has a many-to-many relationship with Category (a recipe can belong to multiple categories, and a category can have multiple recipes).
Recipe has a one-to-many relationship with Ingredient (a recipe can have multiple ingredients).
Recipe and User are linked through Rating, representing many users rating multiple recipes.
This diagram showcases the relationships between various entities in a Recipe Recommendation System, allowing for efficient data management and retrieval..

2.3 User Classes and Characteristics

The system provides different types of services based on the type of users [Personal Assignee/ Crew/ Collaborative Team/ Team Lead /Team Member/ Enterprise Hub/ Admin/ Department Lead/ Team Lead (Enterprise Hub/ Team Member (Enterprise Hub)]. The Admin will be acting as the controller and he will have all the privileges of a Task.

The features that are available to the **Personal Assignee** are:-

- Can view personal tasks (Task, Due Date, Completion Status).
- Can add new tasks.
- Can take the book returned from students.
- Can navigate through tasks using a "Next" button.
- Can choose from templates for various domains when adding tasks.

2.4 Operating Environment

The product will be operating in windows environment. The recipe recommadtion 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.

2.5 Assumptions and Dependencies

The assumptions are:-

- The assumption is that the coding process will be error-free to ensure the system's smooth functionality.
- The system is expected to be user-friendly, facilitating easy usage for all types of users.
- Proper integration with a secure and accessible database is a critical dependency for storing and retrieving information.
- The system depends on adequate storage capacity and fast access to maintain optimal performance.
- The Task Management System is expected to operate 24 hours a day for continuous availability.
- Users must have an internet connection to access the system from any computer with browsing capabilities.
- Correct usernames and passwords are assumed for users to enter their online accounts and perform

actions.

The dependencies are:-

- The system's functionality depends on the absence of coding errors for proper execution.
- The success of the system relies on users finding the interface intuitive and easy to use.
- Proper integration with a secure and accessible database is a critical dependency for storing and retrieving information.
- The system depends on adequate storage capacity and fast access to maintain optimal performance.
- The system's reliability hinges on continuous 24-hour operation for users' accessibility.
- Users depend on an internet connection to access the Task Management System from any compatible computer.
- The effectiveness of user authentication procedures is crucial for maintaining security and access control.

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