**Software Requirements Specification (SRS) for RemixMeals**

**1. Introduction**

**1.1 Document Purpose**

This Software Requirements Specification (SRS) defines the detailed functional and non-functional requirements for the "RemixMeals" platform. The SRS is intended for software developers, UI/UX designers, testers, and stakeholders, providing a comprehensive reference to guide the design, implementation, and validation of the system. It ensures that the development team has a clear and complete understanding of the project requirements, minimizing ambiguities and ensuring alignment with stakeholder expectations.

**1.2 Product Scope**

RemixMeals is a web-based application that assists users in creatively utilizing leftover ingredients to generate new recipe ideas from a database, aiming to minimize food waste and promote sustainable living. The platform will require users to register and log in to access the recipe suggestion features. By offering practical and creative solutions, RemixMeals seeks to empower individuals to reduce food waste, save money, and explore new culinary possibilities.

**1.3 Document Overview**

* Section 2: Overall system description including product perspective, main functionalities, user characteristics, constraints, and dependencies.
* Section 3: Specific detailed requirements including functional and non-functional specifications.
* Section 4: Supporting information including use cases, architecture overview, and references.

**1.4 Definitions, Acronyms, and Abbreviations**

* UI: User Interface
* API: Application Programming Interface
* DB: Database
* SPA: Single Page Application
* HTTPS: HyperText Transfer Protocol Secure

**2. Overall Description**

**2.1 Product Perspective**

RemixMeals is an independent web application that provides a novel solution to food waste by helping users creatively reuse their leftover ingredients. It connects to a database containing a wide variety of recipes. Hosted on a cloud environment, the application will leverage scalable infrastructure to ensure high availability and reliability.

**2.2 Product Functions**

* User registration and login functionality to access recipe generation features.
* Ingredient input field allowing users to enter and submit a list of available ingredients after login.
* Real-time recipe suggestion display, including recipe title, list of required ingredients, cooking instructions, and estimated preparation time.
* Option for users to refresh and regenerate recipe suggestions to explore more options.
* Feedback mechanism enabling users to rate the usefulness of suggested recipes, facilitating continuous database updates.

**2.3 User Characteristics**

* Primary Users: Home cooks, students, busy professionals, and eco-conscious individuals who are interested in minimizing food waste and exploring creative cooking.
* Technical Proficiency: Users are expected to have basic to moderate familiarity with web applications. The interface must be intuitive and straightforward, requiring minimal instructions.

**2.4 Constraints**

* Application must be compatible with the latest versions of Chrome, Firefox, and Safari browsers on desktop and mobile devices.
* Only registered users can access recipe generation features; guest users have no access.
* Recipe suggestions depend on the breadth and depth of the database content.
* Web application must comply with WCAG 2.1 AA accessibility standards to ensure usability for individuals with disabilities.

**2.5 Assumptions and Dependencies**

* The application will primarily use internal datasets stored in a database.
* Real-time communication between frontend and backend will use socket programming.