Software Requirements Specification (SRS) for NutriTrack

1. Introduction

1.1 Purpose

The purpose of this document is to outline the software requirements for the development of NutriTrack, a comprehensive web application designed for meal planning, grocery list generation, and health tracking. The system will provide users with tools to manage their nutrition, track meals, log water intake, exercise, and monitor their overall wellness.

1.2 Scope

NutriTrack will be developed using the MERN stack (MongoDB, Express, React, Node.js). It will feature meal planning, grocery list management, and health tracking functionalities. The primary users of this system will be individuals seeking a tool to organize their meals, improve their eating habits, and monitor their health progress.

1.3 Definitions, Acronyms, and Abbreviations

- MERN: MongoDB, Express, React, Node.js

- UI: User Interface

- UX: User Experience

1.4 Overview

This document contains descriptions of the system features, functional and non-functional requirements, and other elements necessary for the successful implementation of NutriTrack.

2. Overall Description

2.1 Product Perspective

NutriTrack will act as an independent web application. It will not require integration with other systems but will include optional external API use for recipe suggestions and nutritional data analysis.

2.2 Product Features

NutriTrack will include the following key features:

2.2.1 Meal Planning & Recipes

- Create Meal Plans: Users can create weekly meal plans for breakfast, lunch, dinner, and snacks.
- Save & Edit Meal Plans: Users can save meal plans for future use and easily edit them.
- Browse Recipes by Category: Users can browse a collection of recipes by category (e.g., low-carb, vegan).
- Add Custom Recipes: Users can add their own custom recipes, including ingredients and cooking steps.
- Meal Plan Suggestions: NutriTrack will suggest meal plans based on dietary preferences and user history.

2.2.2 Grocery List & Ingredient Management

- Grocery List Generator: Automatically generate a grocery list based on the selected meal plan.
- Edit Grocery List: Users can manually add or remove items from the grocery list.
- Mark Items as Purchased: Users can mark grocery list items as 'purchased' when shopping.
- Categorize Grocery Items: Organize grocery items by categories (e.g., fruits, vegetables).
- Ingredient Substitution Suggestions: NutriTrack suggests substitutions if certain ingredients are unavailable.

2.2.3 Health & Wellness Tracking

- Log Meals: Users can log their meals, including portion sizes and ingredients.
- Water Intake Tracker: Track daily water intake.
- Exercise Tracker: Log workout sessions, including type, duration, and calories burned.
- Nutrient Breakdown: Display a breakdown of nutrients (e.g., carbs, fats, protein) based on logged meals.
- Calorie Tracker: Track daily calorie consumption versus set goals.

2.2.4 Reports & Analytics

- Weekly Progress Report: Generate weekly reports summarizing total calories, nutrients, exercise, and water intake.
- Goal Setting & Tracking: Users can set health goals (e.g., weight loss, hydration) and track progress.
- Visual Progress Charts: Show progress with charts for calories, nutrients, and water consumption.
- Export Data: Users can export meal plans, grocery lists, and health logs to PDF.
- Custom Notifications: Set reminders for meal times, water intake, and workouts.

2.3 User Characteristics

The users will primarily be individuals who want to improve their meal planning and overall health. No technical background is required to use the application.

3. Functional Requirements

1. The system shall allow users to create, save, and edit meal plans.
2. The system shall automatically generate grocery lists based on meal plans.
3. The system shall allow users to mark grocery list items as purchased.
4. The system shall allow users to log their meals with portion details.
5. The system shall track water intake and exercise sessions.
6. The system shall display nutrient breakdowns based on logged meals.
7. The system shall allow users to set and track health goals.
8. The system shall generate weekly progress reports.
9. The system shall provide notifications for meal times, water intake, and workouts.
10. The system shall allow users to export their data.

4. Non-Functional Requirements

- Performance: The system shall handle up to 1000 simultaneous users without performance degradation.
- Security: All data shall be encrypted, and no sensitive information will be exposed.
- Reliability: The system should have an uptime of 99.9%.
- Usability: The UI/UX shall be intuitive, with a clean and simple layout for users of all ages.

5. System Architecture

The system will follow a standard MERN architecture: MongoDB for database storage, Express for the backend framework, React for the frontend, and Node.js for the server. External APIs for recipe and nutrition data may be integrated as needed.