

# Project Specification Document: Meal Planning and Management Application

## Overview

### Purpose

The primary objectives of this application are twofold: to enhance my programming skills and to address a personal daily need for finding varied daily meals. The application aims to prevent food wastage and simplify weekly meal management. Initially, it will be used by me and my family.

### Target Audience

The application is primarily designed for personal and family use, catering to individuals looking for efficient meal planning and waste reduction solutions.

## Application Structure

### User Access and Authentication

- Users must create an account and authenticate to access the application.
- Authentication tokens will be stored in the browser.

### Main Features

- **Home Page:** A landing page describing all the steps of the application with navigation buttons to different pages.
- **Inventory Page (/inventory):** Displays a list of recorded ingredients, sortable by location (fridge/cupboards) or type (starch, etc.). Features include ingredient search, addition of new items via a form, and sorting by expiration date.
- **Recipe Page (/recipes):** Suggests recipes based on user preferences and available ingredients. Allows adding recipes to the weekly menu and annotating or creating new recipes. User-created recipes will be stored in a 'my recipes' section.
- **Weekly Meals Page:** Manages the weekly menu with a calendar, prioritizing recipes using ingredients that need to be consumed first. Features meal rescheduling and deletion, with a future version (version 2) planning to adjust the quantity for different numbers of people and viewing past weekly menus.

- **User Settings Page:** Manages user settings and preferences, including household size (to tailor recipe generation), storage types, profile photo change, food preferences (favorites/banned foods), and preferred cuisines. These settings will influence recipe suggestions.

## Development Approach

### Phase 1: Web Development

- **Technologies:** Vue3, Bootstrap 5, Metronic template (Bootstrap Metronic, version 8), JavaScript (with future plans to transition to TypeScript).
- **User Interface:** Initial simple UI design, focusing on simplicity, modernity, and intuitiveness. Use of icons and illustrations (to be enhanced by a professional designer in future versions).
- **Internationalization:** Support for French and English using vue-i18n.
- **Form Validation:** Implemented using Vuelidate.
- **Image Generation:** All images in the first version will be AI-generated.
- **Responsive Design:** Compatibility with tablet and mobile formats.
- **Code Quality Tools:** ESLint and Vue Store.

### Phase 2: Mobile Application Development

- Planned transition to React Native for enhanced mobile experience.
- Additional features: Recipe generation via AI, ingredient addition through QR code scanning or photo recognition AI, potential partnerships, and professional application design.

### Timeframe

- Estimated completion of the first functional version in two months, subject to availability around full-time employment.

## Backend Development

### Technologies

- **Framework:** NestJS.
- **Language:** TypeScript.
- **Database:** MongoDB Cloud.

### Database Schema

- **Users:** id, name, firstName, email, role, validate.
- **Ingredients:** id, name, quantity, location, type, peremption.
- **Recipes:** id, name, description, note, quantityPeople, price, favorites.

- **Weekly Recipes:** id, weekNumber, weekMenu.
- **Shopping List:** id, shoppingList.

## External APIs

- Ingredient name suggestions via APIs like Spoonacular or Edamam.
- Translation services for multilingual support.
- Email management library (possibly Maildev).

## Security

- Password hashing, helmet for security, endpoint guards, HTTPS, email verification.
- Database security: validation and constraints on user data.

## Endpoints

- User authentication, ingredient and recipe management, shopping list and weekly recipe operations.