**1. Website Goal:**

The Food Planning App aims to facilitate efficient and personalized meal planning. The goal is to provide users with a platform that simplifies the process of deciding what to cook based on available pantry items, dietary preferences, and nutritional needs. By leveraging the Spoonacular API, the app will offer recipe suggestions, generate shopping lists, and help users manage their dietary requirements, ultimately leading to time savings, reduced food waste, and healthier eating habits.

**2. User Demographic:**

The app is designed for a diverse range of users, including:

* Busy individuals or families seeking convenient meal planning solutions.
* Health-conscious users looking for recipes that fit specific dietary needs (e.g., gluten-free, vegan, low-carb).
* Budget-conscious shoppers aiming to minimize food waste and grocery expenses.
* Cooking enthusiasts and beginners looking for culinary inspiration and guidance.

**3. Data Usage:**

* Recipe and Nutritional Data: Extensive details from the Spoonacular API, including ingredients, nutritional information, preparation steps, and cook time.
* Pantry Inventory Management: Users can input their available ingredients to find matching recipes.
* User Preferences and Dietary Restrictions: Information on individual user profiles to tailor recipe suggestions.

**4. Project Approach:**

**a. Database Schema:**

* Users: Includes login credentials, preferences, dietary restrictions.
* Recipes: Recipe details fetched from the API and user ratings/comments.
* Meal Plans: User-specific meal plans with links to recipes for each day.
* Shopping Lists: Aggregated ingredient lists from selected recipes.

**b. API Challenges:**

* Handling rate limits and potential costs with the Spoonacular API.
* Ensuring real-time data synchronization with the API.
* Managing data accuracy and consistency.

**c. Sensitive Information Security:**

* User passwords and personal details need to be encrypted and securely stored.
* Implement secure session management and authentication processes.

**d. App Functionality:**

* Advanced recipe search and filtering
* Custom meal planning calendar
* Automated generation of shopping lists
* User profile customization for dietary needs
* Recipe rating and user feedback system

**e. User Flow:**

* User registration and profile setup
* Entering pantry items and selecting dietary preferences
* Searching for and selecting recipes
* Creating and adjusting weekly meal plans
* Viewing and editing shopping lists

**f. Advanced Features and Stretch Goals:**

* Integration of AI for personalized recipe recommendations
* Social features like sharing recipes and meal plans within the community
* Gamification elements such as cooking challenges or badges for trying new recipes
* Option to connect with local grocery delivery services for seamless shopping.