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Initial Project Proposal

Grocery Tracking System

The Grocery Tracking System called Fresh Mate, is a group project designed to optimize household food management by tracking the expiration dates of grocery items, sending timely notifications as items near expiration, and suggesting recipes using nearly expired food items. This system aims to reduce food waste, enhance meal planning, and provide convenience for users in managing their groceries. The platform will consist of a web-based application that offers various features, including food recipes, nutritional information (optional), and notifications. Users will be able to create personalized profiles, enter their food items and expiration dates, and receive reminders and interactive tools to ensure effective and engaging food management experiences. Additionally, Fresh Mate will provide a list view that displays items nearing expiration, sorted from soonest to latest. By developing Fresh Mate, we aim to promote a decrease in food waste and make healthy eating accessible to a wide range of individuals through advanced technology and thoughtful design.

WRSPM analysis of the chosen problem:

World Assumptions:

The system operates in a world where users purchase a variety of perishable food items with expiration dates that need to be tracked. Users require a system that simplifies the process of managing these dates to prevent food spoilage and waste. It assumes users have access to smart devices (smartphones, tablets, or computers) with internet connectivity to interact with the system. The environment also assumes users have a basic level of technical knowledge, basic knowledge of finding expiration information on their products, understanding their recipe preferences, and a strong interest in reducing food waste while documenting and tracking the food information they place into the system.

User Requirements:

- **Ease of Use:** The system must feature a user-friendly interface for easy navigation, interaction and data entry for their food items and expiration dates.
- **Timely Notifications:** Users require alerts when items are nearing their expiration dates, delivered through preferred channels such as push notifications, emails, or SMS.
- **Option to Set Reminder Notice Date:** Users should have the ability to set the type of reminder notice date, such as 1 day or 1 week before the expiration date.

- **Personalized Profiles and Food Recipes Preferences:** Users should be able to create personalized profiles and set their food recipe preferences to receive tailored recipe suggestions.
- **Recipe Suggestions:** Users want access to a variety of food recipes that incorporate ingredients that are close to expiring, helping them utilize these items creatively.
- **Nutritional Guidance and Meal Planning Options:** The system should provide nutritional guidance and meal planning options to help users maintain a balanced diet and make the best use of their available food items.
- **Data Security:** The system must ensure user data is securely stored and protected against unauthorized access.
- **Cross-Platform Accessibility:** The system should be accessible via multiple devices (smartphones, tablets, desktops) to accommodate different user preferences and convenience.

Specifications and Interface Needs:

- **Responsive Design:** The application must be responsive and accessible across various devices, including smartphones, tablets, and desktops. This ensures that users can access and use the system conveniently from any device.
- **User authentication and Secure Data Storage:** The system must include robust user authentication to ensure secure access. Additionally, it must securely store user data, including personal profiles, food items, and preferences, to protect against unauthorized access and data breaches.
- **Notification System:** The system should provide customizable notification settings, allowing users to set the type of reminder notice date (e.g., 1 day or 1 week before expiration).
- **Nutritional Guidance and Meal Planning:** The system should offer nutritional guidance and meal planning options, helping users to maintain a balanced diet and efficiently use their food items.
- **Integration with Health Tracking Devices (Optional):** Optionally, the system can integrate with health tracking devices to provide more comprehensive health and dietary recommendations.
- **Cross-Platform Support:** The application must be compatible with major operating systems (IOS, Android, Windows, macOS) to ensure broad accessibility.
- **User Interface:** A clean, intuitive interface that allows users to easily log food items, set reminders, view notifications, and access recipes and nutritional information.

Program and Hardware:

Fresh Mate will be developed using JavaFX for desktop applications, ensuring a responsive and seamless user experience across different devices. Additionally, Firebase will be utilized for real-time data storage and retrieval, enabling quick access and synchronization across devices. Furthermore, Firebase Cloud Messaging will be integrated to manage and send timely alerts to users.