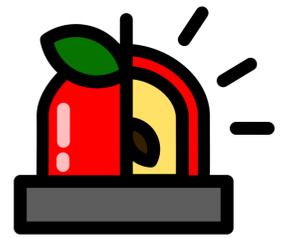




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Food Alert

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Introduction

Each year, Americans waste approximately 161 billion dollars worth of food [1]. Food Alert is an application that is meant to help users plan food usage and limit their food waste.

Food Alert has the functionality to take manually input food items, or load data from scanning receipts with the phone's camera. This information is stored in a remote database, which contains expiration date information to calculate expiration times for each food item.

Technology

React Native: React Native is a platform on which to create apps for Android and iOS. React is used to build UI components. This framework is supported by Facebook. React gives the structure of Food Alert and provides functionality for page navigation and page rendering.

Firestore: Firestore is Google's mobile application development platform that has authentication, database, configuration, file storage, and push messaging capabilities. Food Alert takes advantage of both the authentication and database tools. Firestore was employed to create a login system and store user credentials. Two databases were created: one to store USDA expiration time information and one to store user items. Food Alert makes a call to the USDA api to find a food id, then calls to Firestore to access the expiration times and populates the calendar with food items.

Development Phases



Objectives

- Cross-platform App
- User Authentication
- Text Recognition
- Interactive Database
- Calendar

App Design

Login page: Interacts with Firestore to register new users and authenticate existing users.

Calendar page: Takes manual user input of food items and auto populates with items scanned from a receipt. It can also delete all the expired items on a given day.

List page: Displays a user's food items in a list form. The list can filter items that have expired. The user can also batch remove items.

Profile Page: Gives the user the ability to add a profile picture, and change their name and password.

Camera page: Gives the user the ability to scan text on a receipt, and parse the text into a food item by querying Firestore. The constructed food item is then saved as an entry in Firestore with the user's identifier.

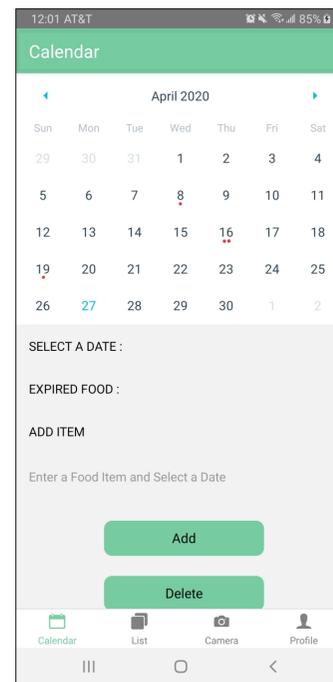


Figure 1: Calendar Page



Figure 2: Login Page



Figure 3: Camera Page

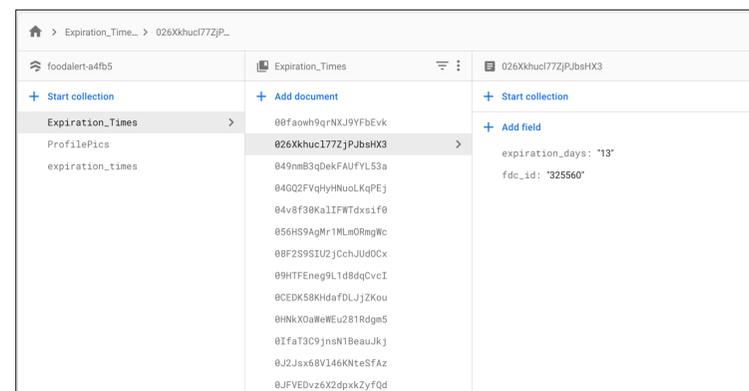


Figure 4: Firestore Expiration Dates

Conclusion

The application gives the user an easy to understand interface that allows them to plan and predict their food consumption. The text recognition accurately reflected the items on the receipt approximately 86% of the time. While there is still room for improvement, the user has the capability to fix these misidentifications. Food Alert successfully interacts with Firestore to store user and food item information. This app could be expanded in later work to include smart fridge compatibility.

[1] Center for Food Safety and Applied Nutrition. "Food Waste and Loss." U.S. Food and Drug Administration, FDA, www.fda.gov/food/consumers/food-waste-and-loss.