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Groce-Reader™

ENDING FOOD WASTE FOR GOOD.

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# Overview

The goal of Groce-Reader™ is twofold--first, to provide an effective solution to reducing wasted produce by reminding you when food you have purchased is going bad. Second, it allows the user to track their spending and price history of items purchased at stores to encourage saving (like camelcamelcamel.com but for physical stores). Sure, the store you’re at *claims* that ice cream is on sale, but what if you could check your app and see that it was actually jacked up in price last week?

Because of the manual entry required for this app, it is primarily targeted towards budget-conscious shoppers who either feel they need such an app to “commit” themselves to not wasting food, or just want the ability to scan UPC codes and create databases of local stores for research purposes. Whatever the case the user must be someone who is willing to use the app very regularly to reap benefits.

## Research

1. Related apps (in no particular order)
   1. Expiry Tracker
      * 1. Pros: take picture of item, manually set expiration date
        2. Cons: manually set expiration date(could be wrong), unstable app--low reviews. No price tracking
   2. Fridge, Foods, Expiration Date
      * 1. Pros: includes freezer distinction, photos, voice input, sorting
        2. Cons: manual expiration date, no barcode scanner, no price tracking
2. Barcode Expiration Date
   * + 1. Pros: user created database linking barcodes to expiration dates
       2. Cons: expiration dates manual, no price option, not intended for shopping purposes.
3. Reasons for implementing this app for target audience:
   1. With enough user data, eventually the app could be used by people without input who just want the benefit of knowing price histories for their local store. Thus early adopters get the benefits of the technology now, while later users will have the benefit of the work put in by first wave users.
   2. We are college students, we don’t mind using our phones a little more to save money. (We are part of the intended audience.)

## Development timeline

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# General Milestones

1. Empty App
2. UI Shell, no functionality. Drawer + fragment switching
3. Barcode Scanner added
4. PLU database initialization
5. User database implementation
6. Graphing Implementation
7. Expiration Date Service
8. Location Detection

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# Features Implemented

* PLU database
  + Initialized on app startup as SQLite database, returns average expiration date as well as produce type + variety given a PLU. Database was downloaded from <http://www.ifpsglobal.com/> . Expiration dates were added manually, taken as an average between date ranges, in days. This database is not seen by the user, but is working in the background.
* User Database
  + Implemented as a content provider, supports items in either PLU or UPC form as a key, includes timestamps of when the item was added for expiration notification, the price per unit cost and total cost, and whether the item is in the cart, pantry, or archived (expired or is a non-food item).
* Barcode Scanner
  + Used ZXing API/separate app.
* Timeline Price Graphing
  + Used Android Plot API.
* User Interface

# Future Development

* Incomplete: Database sharing with other users
  + Ran out of time of course, but specifically this feature was deemed not critical for initial version of the app. With more active users, this feature would be pushed up in priority.
* Incomplete: Automatic Location Get
  + Would be nice to have to eliminate manual entry, but there would be issues with adding items to app after arriving home. May be added to supplement manual entry later.
* Incomplete: More advanced database search/visualization options
  + More is always nice, but not strictly critical for use of the app.
* Incomplete: Nutritional insights
  + Would require tedious manual entry of nutritional information of many produce items, as well as necessary infrastructure to view said information in a useful way. Not needed for initial app release, can be added later without much hassle.

# Conclusion

* No known apps offer the unique combination of automatic expiration date reminders (Constantly Improving™), along with barcode item per store price tracking in a local database, that Groce-Reader™ does. We believe that by taking advantage of the freely available PLU database, we have a very solid foundation for an all-encompassing wellness lifestyle app. The only limiting factor for what can be done with the data is imagination. Suggested recipes, nutrient intake reports and warnings, price alerts, and more. While our base app is just that, a base, it is designed in such a way that future features would primarily just involve database changes, and UI modifications to go with them.

Groce-Reader puts power back into the hands of the people, and away from the big chains.