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CartGuru

Stage 4: Functional Prototype

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Briefing

Our app, CartGuru, was created with the purpose to give our client the necessary information to make conscious decisions with their purchases in the most suitable supermarket for their needs.
The app has the feature to create a shopping list and find the best supermarket according to the user's criteria, for example location, price, etc. It's also important to note that the prices get update via a well-established community. Finally, we also have another feature to track expiry dates and receive notifications before your products get spoiled.

Startup Instructions

As a team we decided that our idea would fit best as a mobile application, so our final product is an android application developed with React Native.

To download our application, use the following link …

To run our application, you will need to install the apk file from the link above on an Android 13 phone.

Once running, it is possible to occur some catastrophic bugs where the screen will go black, to solve this close the app, restart it and repeat your last action as it may not have been saved. This problem is related to the storage method, and since it's backend related and due to time constraints, we decided to focus on other matters more important for this course. We are sorry for the inconvenience.

Our prototype is available to download at: …
The following tools were used to develop it:
- React Native
- Typescript
- Miro
- Many React Native libraries such as:
  - React Native Async Storage
  - React Navigation
  - React Redux
  - Redux Toolkit
  - React Native Vector Icons
  - UI Kitten
  - Redux Persist

Functionalities

Succinctly our app can be divided into 6 groups of features, Log In/Sign Up, Profile, Shopping List, Community, Pantry and Map. For this prototype the most pertinent ones are Shopping List, Community and Pantry, so there's a higher level of fidelity there in general.

Throughout the application we decided to implement some popups to warn the testers of the features that are yet to be implemented. These will be mostly found in the map and profile related features.

Log In/Sign Up
We implemented a simple log in form, a registration form and a guest log in. Guest users have access to less features, which we will talk about later. The only thing not implemented is the forget password form, which we considered very low priority.

Profile
In this section we have a message showing the currently logged account. We also have a few buttons for non-implemented features, such as settings. Finally, we have a logout button.

Community
To interact with the community a user must not be a guest. The community is well implemented and includes the following features:
- Creating a post to inform other users of the price of an item in a supermarket, which updates the value of the item for that supermarket (might work incorrectly sometimes)
- Reacting to other user's posts with a like/dislike (a user cannot react to their own posts)

Map
The map tab is comprised of a static image and a few buttons launching a popup to warn the users that the feature is not implemented.

Pantry
Guest users can use the pantry freely. The pantry is well implemented and includes the following features:
- Creating a visual reminder for the expiry date of a product previously bought (which is external to the app) in the app. As described in the briefing, the app would also send notifications, however we ultimately decided not to implement that part.
- The reminders can be edited in case the users make any mistake or change their mind about the additional options we provide to them.
- Items on the list can be sent to the pantry (this is supposed to occur once the user bought the items on their list through external means). The items are sent to the pantry with default values, that can be changed later.

List
All features of the list tab are free for the guest users to use except the list of the favorite items. The list is well implemented and includes the following features:
- Adding a product to the list. This can be done through three different methods:
  - Through the favorites list, which gives quick access to the favorite items of a user with an account.

- o Through the popular list, which gives quick access to the latest five different items which were posted on the community.
  - o Through the search feature, which allows users to search for any product in our database (more on this in the next section).
- Seeing detailed information about a given product, in particular the price in all supermarkets and the closest location.
- Setting an item as favorite.
- Deleting items from list.
- Calculating the best supermarkets by number of items as first criteria and giving the possibility for the user to change the second criteria (price/location).
- Seeing detailed information about what is available from your list and at what price in a given supermarket.

Important Details

Geographical location
To simplify the process of developing this prototype we decided to simulate the geographical locations instead of using real life coordinates.
Each time the user has entered the app, independently of whether they are a guest or not, their location is randomly generated within certain values.
The supermarkets on the other hand have a fixed location, also within the same values, which were generated with the help of AI.

Product dataset
To simplify the process of developing this prototype we decided to have a small and not extensive product dataset generated with AI.
The following features require knowledge/access to the dataset:
- Adding a post to the community or a remind in the pantry requires using the correct name and capitalization of a product's name.
- Searching for an item in the list tab uses a simple algorithm that separates the name of the product in different keywords based on spaces and any other characters that aren't letters. This algorithm compares keywords of the entered product and the products in the dataset, this comparison does not require the keywords to have the same capitalization, but they're characters must match. Here are some examples:
  - "Whole Wheat Bread" is separated into "whole", "wheat" and "bread". The user could search for one or more of these keywords that "Whole Wheat Bread" would be one of the results.
  - "Semi-Skimmed Milk" is divided into "semi", "skimmed" and "milk".
  - Searching for "Bananas" returns one result, however searching for "Banana" would give an error.

To facilitate the testers of the app we provide bellow the names of the products in our dataset:
- Simple Bread
- Nutsack
- Whole Wheat Bread
- Sourdough Bread
- Skimmed Milk
- Semi-Skimmed Milk
- Full-Cream Milk
- Free-Range Eggs
- Boneless Chicken Breast
- Fresh Fillet Salmon
- Vine-Ripened Tomatoes
- Granny Smith Apples
- Fuji Apples
- Chocolate Milk
- Russet Potatoes
- Bananas
- Valencia Oranges
- Cheddar Cheese
- Spaghetti
- Basmati Rice
- Cornflakes Cereals
- Greek Yogurt

- Vanilla Ice Cream
- Dark Chocolate
- Chocolate Bar
- Ground Coffee
- Baguette
- Croissants
- Rye Bread
- Pita Bread
- English Muffins
- Bagels
- Ciabatta
- Sourdough Loaf
- English Breakfast Tea
- Green Tea
- Honey
- Almonds
- Quinoa
- Coconut Oil
- Chia Seeds
- Avocado
- Orange Juice
- Spinach
- Frozen Peas
- Canned Tuna
- Hummus
- Brown Rice
- Olive Oil
- Sweet Potatoes
- Cucumbers
- Red Bell Peppers
- Broccoli
- Blueberries
- Ground Turkey
- Black Beans
- Whole Chicken
- Basil
- Lemons
- Cottage Cheese
- Oats
- Pineapple
- Asparagus
- Mozzarella Cheese
- Ginger
- Celery
- Ground Beef
- Baby Spinach
- Zucchini

Scenarios

Scenario 1

Mrs. Jane was on her way home after work thinking about what she could make for dinner, she immediately thought of making açorda, however she remembered that her husband and kids ate toasts with the remaining bread for breakfast. The store she usually goes to is quite far from her way home, so she decides to try CartGuru, a mobile app she recently downloaded, that lets her find products at the best price nearby. Mrs. Jane is in a hurry, so she wants to find the nearest store that sells "Simple Bread".

Scenario 2

Mr. Samuel is an avid CartGuru user, so he already has an account and frequently interacts with the community. A few days ago, he saw a post in the community of a "Chocolate Bar" he never tried, so while he was shopping on Intermarché, Mr. Samuel went to the chocolate aisle and found the same "Chocolate Bar" for the price of 1.90€. To alert other users of this amazing price, Mr. Samuel decided to share it on CartGuru.

Mr. Samuel's user details are:
- Username – "Mr. Samuel".
- Password – "123"

Scenario 3

Mr. Ruy loves caramel nuts, and the last time he went to the supermarket he overbought them as they were on sale, but, unfortunately, he couldn't eat all the nuts within the expiry date. Mr. Ruy told this story to a friend of his, Mr. Samuel, which in turn recommend him CartGuru to take note of expiry dates and receive notifications to avoid it. Mr. Ruy listened to Mr. Samuel's advice and the next day he bought a "Nut sack" with the expiry date of 25/12/2023 and registered it on the app.

Scenario 4

Mrs. Jane after eating an amazing açorda realized how useful the app was, she decided to explore the app a bit more, but soon realized she hadn't deleted the "Simple Bread" entry from her shopping list, which she doesn't need anymore.