LettuceCOOK

Team 30 - Product Backlog

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Problem Statement

When you live in an apartment, it can be hard to think of recipes with the ingredients available in your house. Even if you do come up with a recipe to make, you often may not have all the ingredients to make it as it is difficult to maintain the stock of groceries regularly. This app will suggest recipes to you, and lets you save the recipes you want to make, based on the ingredients you choose from your stock. If you're ever missing an ingredient to make a particular recipe, it will help you gather the remainder of the ingredients by either adding it to the common grocery list between the members of the household or by requesting ingredients from nearby households. It will also help you keep track of your groceries by displaying a common stock among the members of the household.

Background Info

Audience

Many people who have a very fast-paced life, do not have time to think about what they can make with the ingredients they have available to them. LettuceCOOK provides a centralized platform to help college students and bachelors living independently, as it shows them what they can make with the groceries in their house and can help them attain missing ingredients easily and efficiently. Although this is a large target audience, many apps have failed to provide a good solution that can suggest to our target audience the recipes they can cook so that they can make do with the groceries they have.

Similar Platforms

There are a lot of platforms like Supercook, Allrecipes Dinner Spinner that show you recipes based on ingredients. The two applications listed above have similar core functionality, however, their implementations differ from each other. Supercook, on one hand, let's the users look up recipes they want to make, whereas Allrecipes Dinner Spinner, on the other

hand, lets you filter recipes based on many different criteria such as low-calorie or gluten-free food. In addition to the two apps, Cookpad is a social media based application that lets the users search for specific recipes from chefs all around the world and share them with other people.

Limitations

One of the biggest shortcomings of the apps mentioned above is there inability to maintain a stock of the groceries in your kitchen. Thus, using these apps requires its users to look over the available ingredients and then search for a recipe.
Our app fixes the issue by letting them manage a stock of their groceries, thereby facilitating user experience. This is done by using a real-time, editable grocery list and a stock manager that lets members of a household update the things to buy and at the same time keep the household inventory.
Another issue with Supercook and Allrecipes Dinner Spinner is their inability to connect its users with other users. However, LettuceCOOK lets you connect with other households and at the same time allows you to ask them for any missing ingredients for a recipe that you want to cook. In addition, the app lets you socialize by giving you an option to invite your friend households for a meal together. Cookpad has a very intuitive social media aspect but does not let users search recipes based on ingredients available.
A final limitation with Supercook is it's hard to use interface and its inability to look up recipes with the checked off ingredients. We plan on fixing this problem by firstly making sure that the interface is very intuitive and easy to use by making the app's front end very minimalistic and clean. Using a precise API for recipe calls will help us look up specific recipes without many errors.

Functional Requirements

1. As a user, I would like to register for a LettuceCOOK account so that I can use the services provided by the application.
2. As a user, I would like to be able to login and manage my LettuceCOOK account.
3. As a user, I would like to have a "forgot password" button so that I can access my account even if I forget my password.
4. As a user, I would like to create a new household.
5. As a user, I would like to invite other users to join my household.
6. As a user, I would like to accept any household join requests so that I can enter an existing household.
7. As a user, I would like the option to leave a household or join another.
8. As a user, I would like to be able to log out.

9. As a member of a household, I would like to be able to update the grocery list so that other members of the household are aware of any updates and have a refreshed stock.
10. As a member of a household, I would like to receive notifications when other household members update to the grocery list so that I am aware of recent activities in the household.
11. As a member of a household, the notification I will receive will contain information about what change has been made to the stock and who has made the change to it.
12. As a member of a household, I would like to receive notifications when a friend household asks me for ingredients or invites me over.
13. As a member of a household, I would like the application to add the ticked off items from the grocery list to go into the current stock so that it avoids the hassle of manually adding the items.
14. As a member of a household, I would like to delete items from the grocery list so that I can undo any items which were added accidentally.
15. As a member of a household, I would like to see the current stock of groceries so that I am aware of the groceries available.
16. As a member of a household, I would like the application to prompt me to add an item to the grocery list if there is none of it left in the stock.
17. As a member of a household, I would like to see other nearby households as suggested friends so that I can later connect with them.
18. As a member of a household, I would like to send other households friend requests so that I can connect and talk with them.
19. As a member of a household, I would like to request ingredients from households in my friend’s list.
20. As a member of a household, I would like to invite other users to my house for a meal together.
21. As a member of a household, I would like to search for recipes based on the items I have chosen from my stock.
22. As a member of a household, I would like to know the nutritional breakdown of the recipe so that I can maintain a healthy lifestyle.
23. As a member of a household, I would like to know if there are any missing ingredients for the recipes suggested to me.
24. As a member of a household, I would like to request ingredients from the households in my friend's list.
25. As a member of a household, I would like the option to add the missing ingredient to my grocery list so that I have that ingredient the next time I try to make the recipe.
26. As a member of a household, I would like to save any of the suggested recipes so that I can refer to them in the future without having to go through the entire process.

27. As a member of a household, I would like to see all the recipes I have saved so that I can make them again.
28. As a member of a household, I would like the application to prompt me to update the current stock of the ingredients used when I select to make a recipe so that the stock is not outdated.
29. As a member of a household, I would like to filter recipe search results based on its nutritional value and benefits.
30. As a member of a household, I would like to be able to not receive notifications when updates have been made to the stock.
31. (if time allows) As a member of a household, I would like to share the recipe I make with all my friend households so that they can see what I am cooking and how am I cooking it.
32. (if time allows) As a member of a household, I would like to see the recipes my friend households shared with me so that I get to know different recipes.
33. (if time allows) As a member of a household, I would like to click on a recipe from the feed to check whether I have the required ingredients for it.

Non-functional requirements

Response time

The Spoonacular recipe search API that we are using to display recipes to the user has an average response time of 540 milliseconds, so the average response time that we strive for in our app is going to be around 500 to 600 ms given a good internet connection. Given more than enough requests per day for the API, the user will have no problem searching for recipes. The app will operate 24 hours a day, with more than 5000 queries for the recipes.

Usability

The frontend of our application will be very user-friendly. It will be easy to navigate to different screens, like the recipes page and the stock page. The frontend will not be very cluttered and will be fairly easy to use. Different activities will have a similar UI. We also want the app to work on all phone sizes. Given the major screen size ratios in the market for 16:9, 18:9 and 19:9 for Android, our app will be able to look good on all of them. Our app will also look good on screens with different resolutions like full HD or 2K screens. If time allows, we want our app to be able to work on devices with big screens such as tablets.

Security

Since there is a login screen for the app, users will have to log in to the app by making a user id and a password. The passwords will be hashed and then stored in the database. Whenever the user wants to log in, their password will be hashed, either by using the SHA-2 or BCrypt algorithm, again and compared with the original password that they set. Apart from passwords, the user and household data will also be stored in the database, like what items need to be bought, and what items are in stock right now. All of this will be securely stored in the database, and used whenever the user login. The users will only be able to access the information of the households that they were invited in or that they created. Everyone will be able to edit their household's list.

Architecture and Performance

Our goal is to make the front end in Android Studio, which uses Java. Since there will be interaction between people on the app, it does require a backend. For the backend, we intend to use firebase to store all the data, like the usernames, the ingredients in stock, the name of the household, etc. We will integrate firebase with Android Studio, so the data retrieved from the database can be shown on the frontend of the app. Since there is continuous communication between the app and the database, that means that if there is a network communication problem, then the app will stop working. For instances like these, firebase provides offline capabilities in the name of disk persistence, which writes the data locally on the device in a cache, and then communicates with the network when the connection is found.