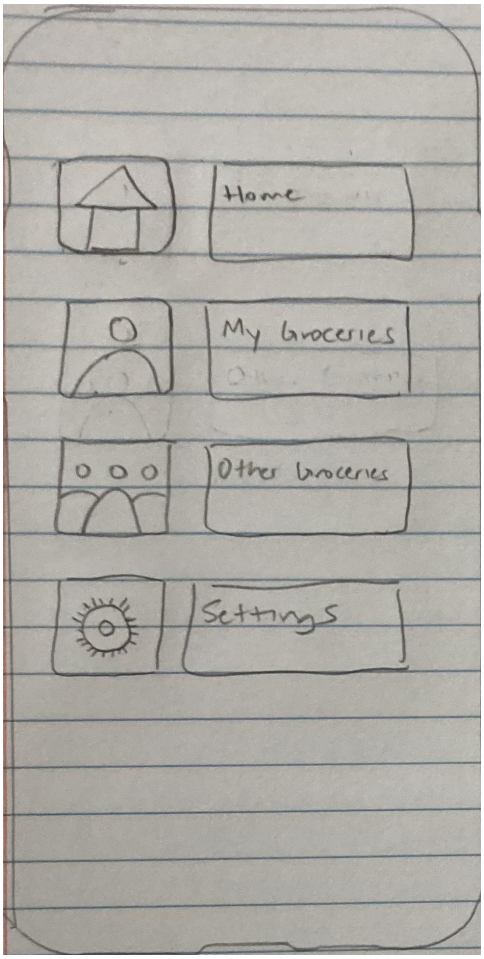
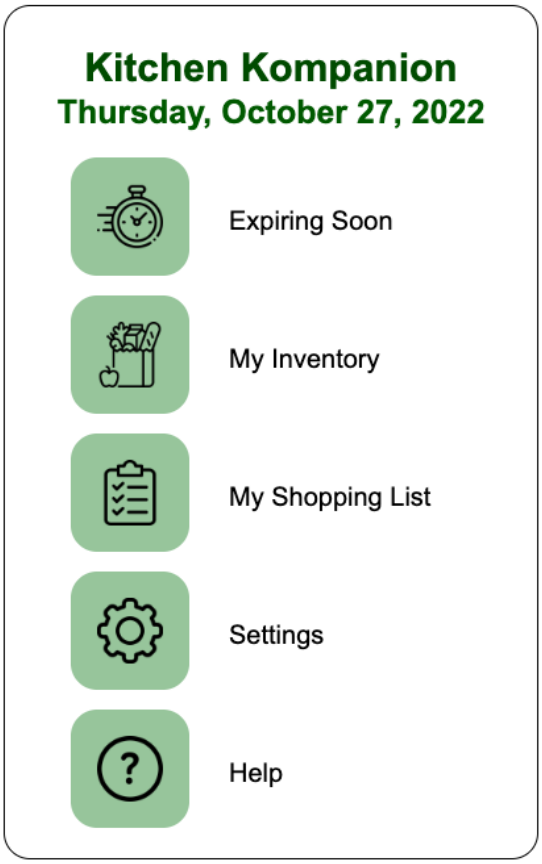
Re-design rationale from Phase 1 to Phase 2:

In Phase 1, we mainly focused on the aspects of adding and displaying the items in a comprehensible manner for a “grocery” list. Our low fidelity prototypes were focused on displaying food items and sorting them by food categories or expiration dates. To make sure that our prototype was designed for users, we got feedback from various people. When talking to a male college student who was majoring in CS and was living on his own for the first time, we realized that there were more aspects that were wanted from our application. They suggested that we display the expiration date so that the user could see which foods would go bad. We were able to change our low fidelity prototypes to incorporate different types of lists for the user to organize. A stay at home mother of five suggested that we implement a groceries list. For example, “My Groceries” would show a list of the food items that the user currently had with them. “My Shopping List” would show a list of food items that the user would want to purchase during the next trip to the grocery store. The user would have an option to add and remove items from “My Groceries”. Our main goal was for users to be able to track the expiration dates of the food items in their respective living spaces.

Low fidelity home screen:

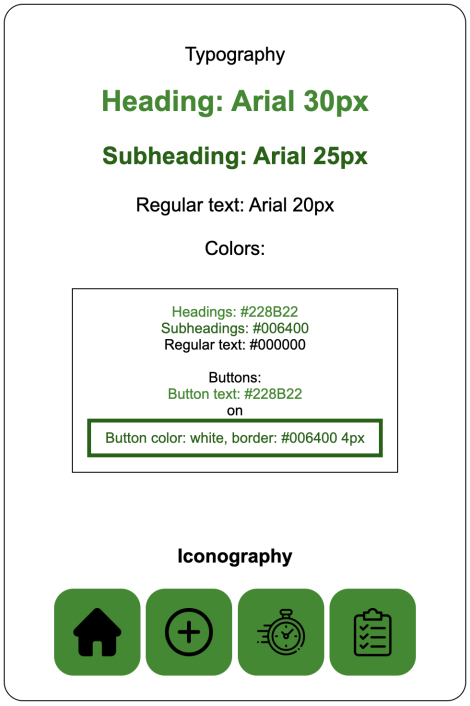


Horizontal prototype home screen:

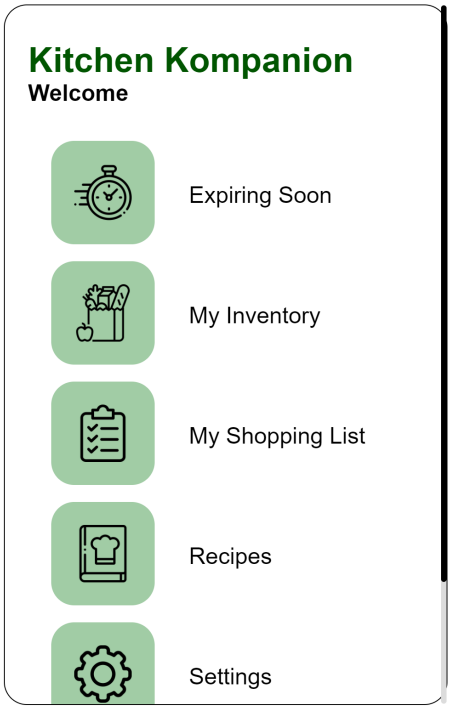


Using the feedback that we received, we decided on using a lighter shade of green for the style guide. We realized that the original shades of green (#228B22, #006400) were too dark against our black text. This was not accessible for all users, especially those who are colorblind or cannot see as much color contrast. Using an online color picking resource, we were able to find a shade of green that contrasted with black to make the application more accessible.

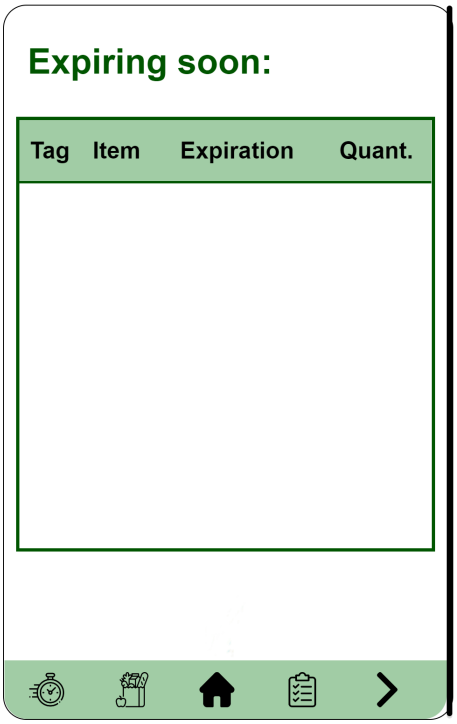
Old style guide:



Updated style guide:



While implementing our ideas from Phase 1 into a working prototype, we realized that there were aspects that were not as efficient as we thought. For instance, in order to see the expiration dates of foods, the user would have been required to sort the “My Inventory” list every time. To make this aspect of our application more efficient and easier for the user, we decided to create an “Expiring Soon” list. This list would show the foods that were expiring within a specific number of days from the current date. The “Expiring Soon” list would further act as an extension of “My Inventory” that would automatically populate once the number of days until expiration was met.



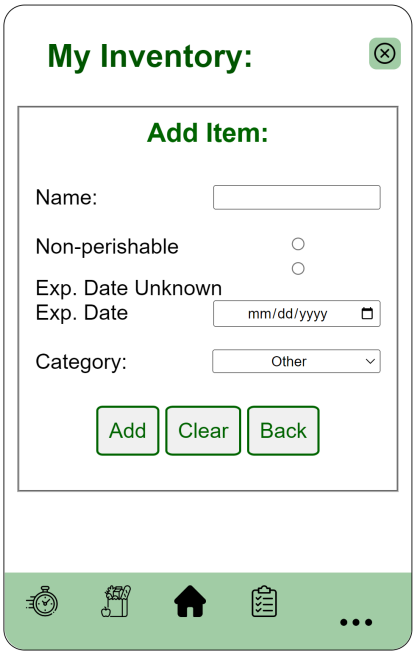
During Phase 2's implementation, we also changed the idea of removing items from lists. Originally we planned to have the user go to another page of all food items and they would select the items that they wanted to remove. However, we felt that it was easier for the user to remove the food item from the respective lists without navigating to a completely new page. For "My Inventory", we decided to implement it so that the user would click on the item to remove or edit the item. For "My Shopping List", the user would select the corresponding checkboxes to the items that they want to remove.

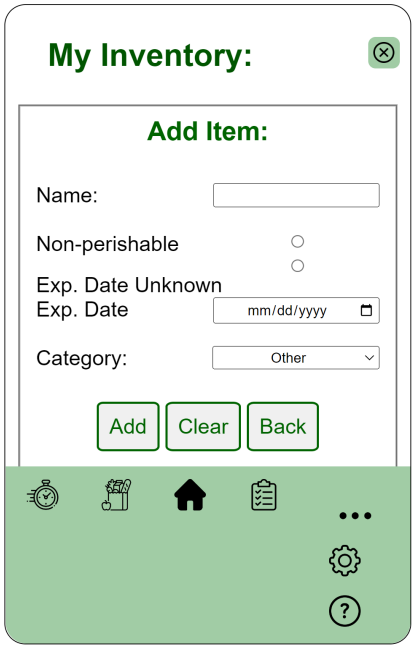
Re-design rationale from horizontal to vertical prototypes:

During our implementation of the vertical prototype, we were able to see more issues with our application. We were able to receive feedback from the TA meeting that helped us to clearly see which aspects would make our prototype improve. There were issues with the general flow of the application and getting to different pages of the application from others. We also saw issues in accessibility of the buttons and text input fields.

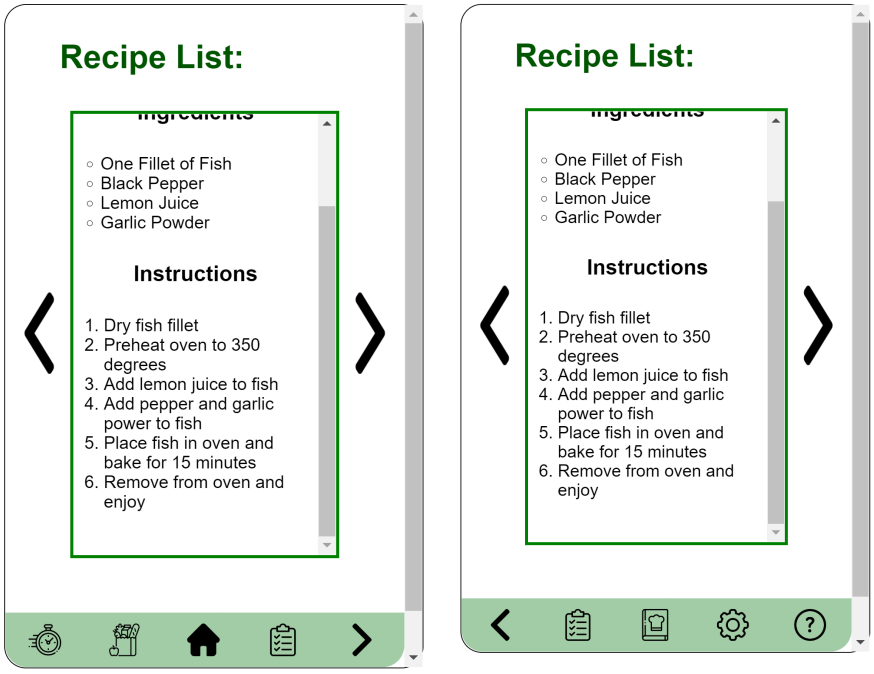
One addition that we made to the application was adding a navigation bar at the bottom of each screen. We realized that the user would have to go back to the home page every time they wanted to navigate to another page. This felt inefficient in the amount of time and clicks that were needed to navigate to all of the pages. For the first implementation, we added a navigation bar that included icons to all of the pages in the application. However, we saw that the buttons were crowded and hard to access. The navigation bar was further edited to display a left and right arrow so that the user could access the other icons in the navigation page like a carousel.

Older version:



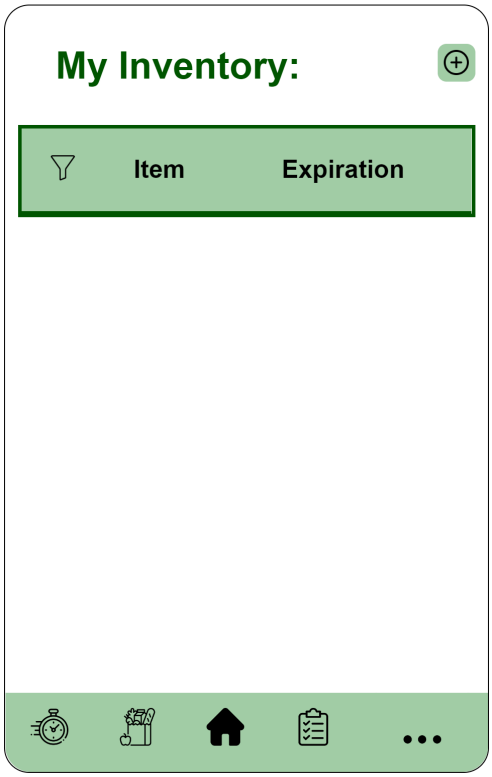


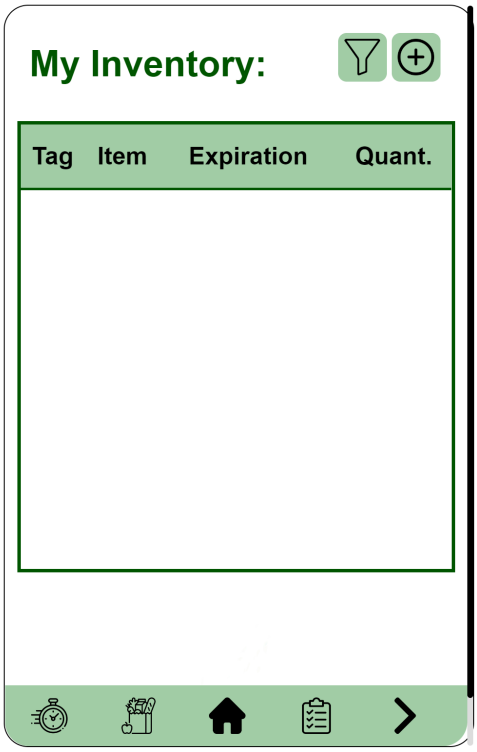
New version:



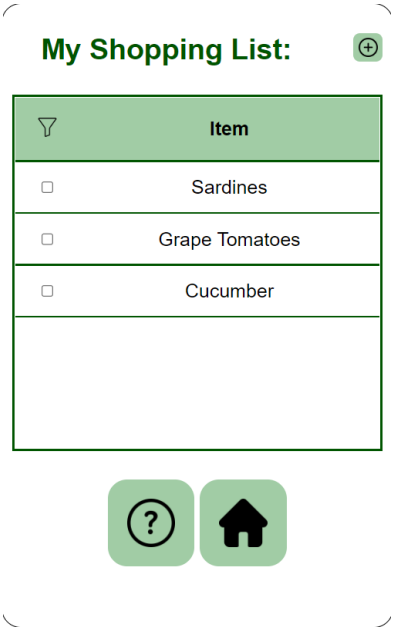
We also changed various aspects to improve the general accessibility in our application. The size of the add button on “My Inventory” and “My Shopping List” was increased so that the user would be able to easily navigate to the button. We also changed the filter option to be a button next to the add button. We decided that these decisions were necessary because adding an item to lists and filtering by categories, expiration dates, etc. were key parts to the use of our application. The application originally did not warn the user at any point. For example, if the user put the date in the wrong format or if the user had to put data in, the application would just take in the bad data or stall. We realized that this was not a good design choice. We implemented an “alerts” functionality so that the user would get prompted to put input in or tell them to reformat their input in the correct way. We also added a popup of a phone keyboard for the user to use to input data. This was mainly for us to see how much of the screen is covered when the user needs to input data. As a design choice, we decided that the user would click away from the text box for the keyboard to go away. For the checkboxes in “My Shopping List”, we got rid of this option and changed it so that the user would have to click on the food item to remove it. We decided to get rid of the checkbox and general remove option because it did not match the workflow that we needed. It did not make as much sense to display expiration dates or food categories for a grocery list, especially if the expiration date cannot be anticipated. We decided to prompt the user for confirmation if they wanted to remove the food item and have them confirm the specific quantity of food items that they were removing.

Older version on left (small add button, original filter button placement); newer version on right (bigger add and filter button; button placements have changed):



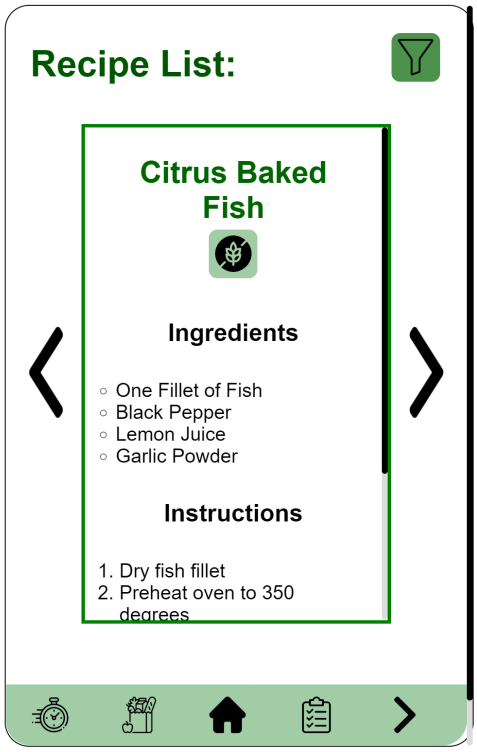


In terms of functionality, we made a few changes to the flow of the application. The "My Shopping List" originally was a list where the user could add food items that needed to be bought. The user would be able to check a checkbox for items that they've already bought. For the "My Shopping List", we wanted to make the list dynamic to change with the users' needs at the exact time of use. To do this, we implemented a button for the user to click once they finished selecting the items that they bought.



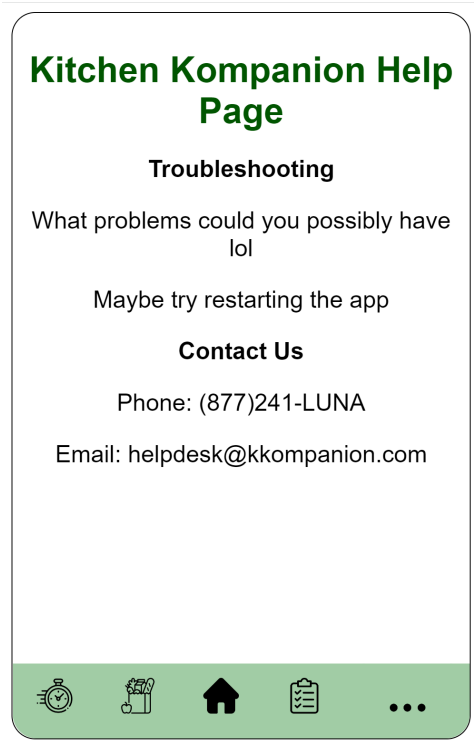
Original shopping list.

To further match the guidelines needed for this project, we implemented a “Recipe List” page for the user to reference for various recipes. We implemented this page in a way so that users had multiple recipes to choose from. A carousel type of display was chosen so that users would not have to scroll through every recipe to get to the next one. In some task scenarios, users expressed desires to find recipes that would suit both their and another dining partner’s needs. To address this, recipes can be filtered by dietary restrictions, which appear as symbols on the page.

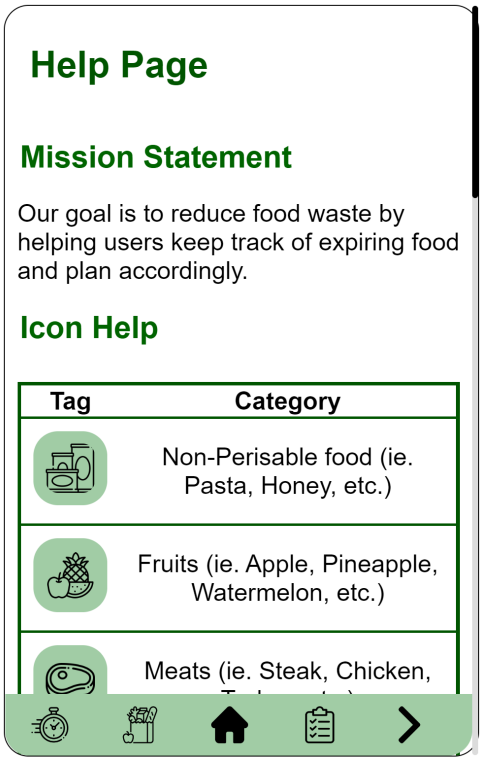


We also further implemented a help page. The “Help” page was originally created as a way for users to contact us for any issues or help. However, we realized that it may be easier for users to have a screen to refer to for explanations of lists and icons. We added information for users to clear up any possible confusion. This includes the meaning of the icons (non-perishable foods, fruits, vegetables, meats, “other”) and how each list should be utilized. While we strived to make this application as intuitive as possible, we included a “Help” page so that users could refer to it at any time.

Original Help Page:



Edited Help Page:



Final Discussion of the prototype:

Our prototype is currently a functioning prototype that can go through various task scenarios. The vertical prototypes are fleshed out to allow users to get their tasks done through our application. We aimed to create an application that helps users keep track of food items' expiration dates with the expiring soon list, stores what they possess in their pantries through the "Inventory", and inspire them to explore new dishes via the "Recipe List."

Using our current prototype, the user will encounter the home screen when starting the app. This screen showcases all of the page options that the user can get to: Expiring Soon, My Inventory, My Shopping List, Recipes, Settings, and Help. From this page, the user can choose to go to any screen that they need to. A navigation bar shows up at the bottom of each of these pages. This allows the user to navigate to all other pages from the current page that they are on. The "Expiring Soon" page is automatically populated with food items in "My Inventory" that have entered the date range that is set. The automatic date range is set to 14 days from the current date. "My Inventory" is populated with food items that the user adds in. In the top right corner of the page, there is an add button where users are shown the "Add Item" page. The "Add Item" page displays various input fields. If the user inputs data in the wrong format, an alert is displayed to correct their format. Once an item is added, it is displayed in "My Inventory". These food items can be filtered in various ways: food categories (tags), expiration date, etc. "My Shopping List" is a list that displays food items that the user would like to buy during their next trip to get groceries. The top right corner displays two buttons: "Add", "Filter". These work in the same way that "My Inventory"'s buttons work. "Recipes" displays various recipes for the user to use. We currently have a filter option for recipes as well. This filters the recipes for the user. For both filters for the inventory, expiration, and recipe page, once a filter is applied the button turns dark to signify on whereas when there is no filter it is the normal button color. In order to turn off the filter, the user just has to clear all filter values. "Settings" is a page where users can toggle between light and dark mode for ease of accessibility. They can also edit the date range for when food items are considered expired. The functionality for the dark vs light mode and editing the range of expiration have not yet been implemented. The "Help" page consists of various explanations for each page in case the user would like to refer back to it. It also explains the different icons that are used to sort the food items into different categories.

The quality of our design is focused on accessibility and needs of the users. We have worked to make sure that all aspects of the application are visible. This includes making sure that all colors contrast in an accessible and visible way. We also made sure that the buttons are big enough to see and use. We would like to make sure that every user has a positive experience with the application. We also focused on making each task as intuitive and efficient as possible. Each icon that we used summarizes the use of them well and is intuitive in their usage. Each page is designed in the same graph layout and style guide to maintain internal consistency. We also use

the same color throughout the application to make sure that the user does not get confused by different colors showing up.

Currently, our prototype is fleshed out to allow the user to get their tasks done. The navigation bar is functional, allowing users to navigate through the different pages. The carousel design of the navigation bar gives enough space for the buttons to be accessible without overcrowding it. The “Add” and “Remove” functionality of food items for “My Inventory” and “My Shopping List” works in a way to populate the lists as needed. The alerts that are implemented for user input help guide the user to input correct data or add input if they missed a necessary field. The “Expiring Soon” list is working to automatically populate as needed. This depends on the current date that the user is using the application and the range of days that is set. The “Expiring Soon” list cannot be edited by the user. This helps to structure the use of the application because it helps the user keep track of the foods that are expiring and there is no chance that the user can accidentally delete a food item that hasn’t been used yet. When the user is on each page, the current page’s icon is highlighted a darker green in the navigation bar. This shows the user that they are on that current page.

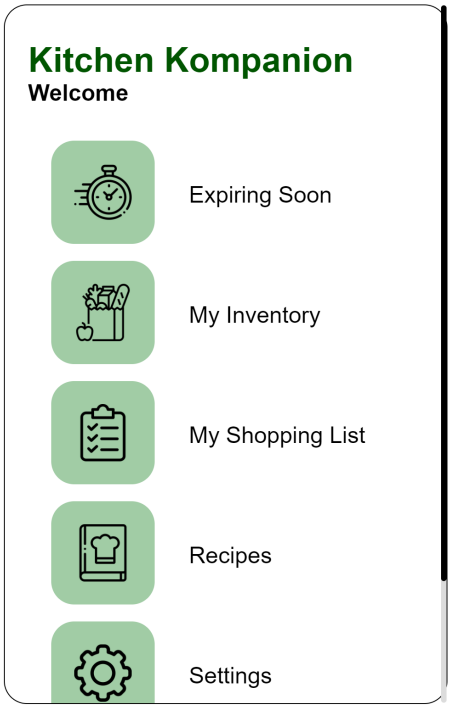
During our final usability test, we realized that the application was not working properly across all platforms. Some of our group members had iOS running on their device while others had Windows. Although we worked on HTML to avoid these problems, aspects such as the navigation bar, icon buttons, and scroll bar did not show up uniformly throughout each device. Each group member worked to make sure that the aesthetics of the application were consistent throughout each system (iOS, Windows). We also tested to make sure that each function and page was working as needed. This included putting in wrong input or missing a field of user input. After checking for these aspects, we were able to make sure that the filtering aspects of “Expiring Soon”, “My Inventory”, “My Shopping List”, and “Recipes” were working properly.

One aspect that we are currently working on is making sure that there are more filtering options for the “Recipe” page. Currently, we have implemented a gluten-free and vegan option. However, we know that among potential users, there are more dietary restrictions that they would like to be able to filter by. Our recipes are also limited in the ingredients that they utilize. We would like to flesh out this page with a more in-depth filtering functionality. We would also like to add more recipes so that the user has more options in what they would like to utilize.

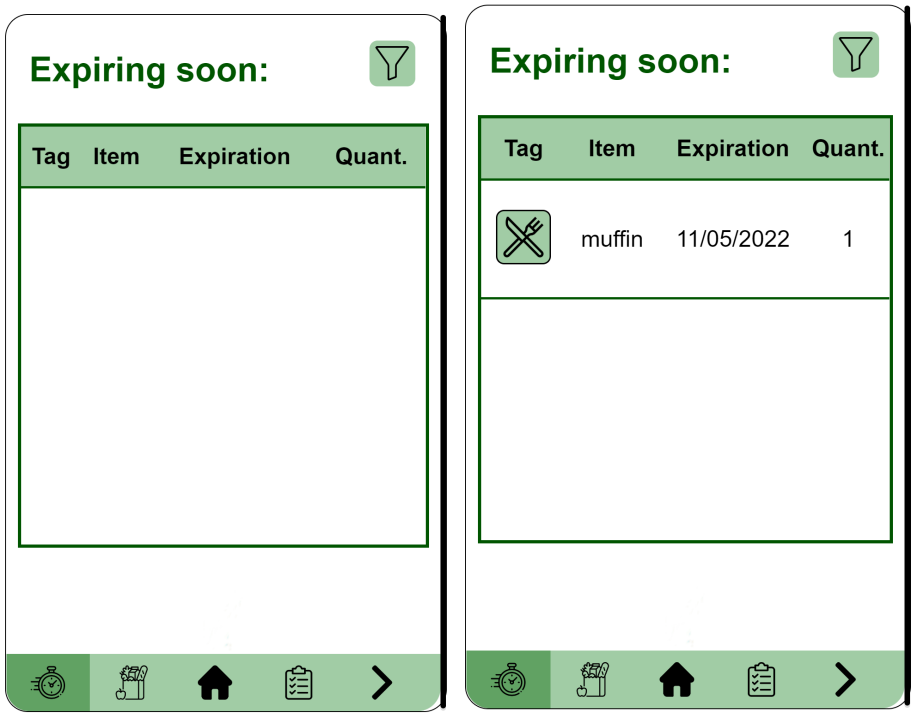
Within “Settings”, we have a few more aspects to further implement. As aforementioned, we have an option to toggle between light and dark mode, as well as a setting to change the expiration date range. We currently have these settings as a placeholder. They do not affect the application in any way at the moment. During the next iteration of the prototype, we would like to have these aspects fully fleshed out so that accessibility and usability within our application increases.

Although we have done usability testing within our group and with outside users, we would like to receive more feedback. Through this feedback, we hope to increase usability and accessibility for potential users. Our goal is to provide an application that accomplishes what a true “kitchen companion” should do.

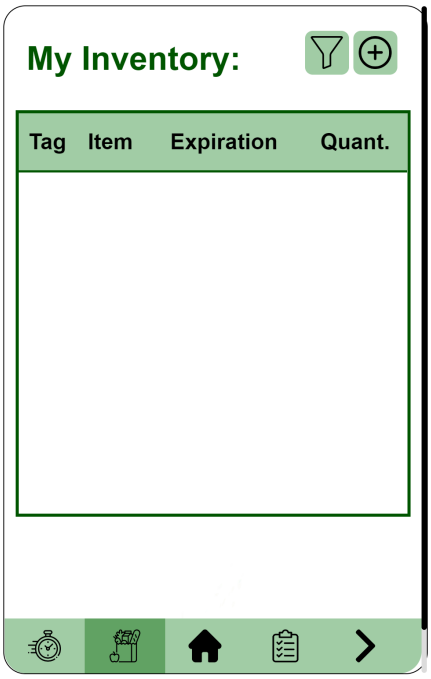
Home Screen:



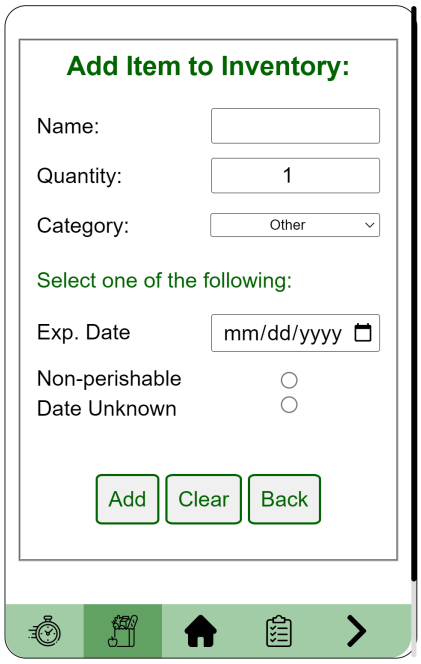
Expiring Soon (populated with a food item that has a close expiration date):



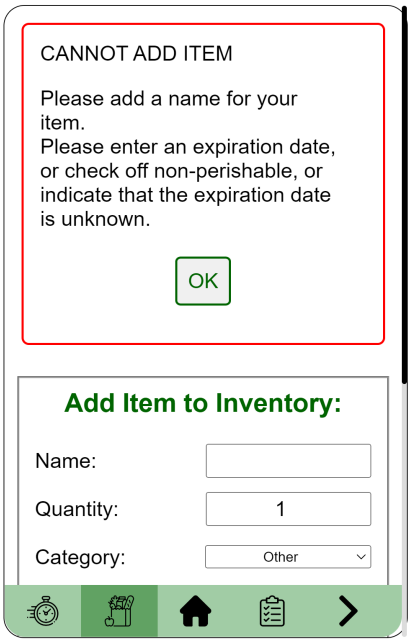
My Inventory:



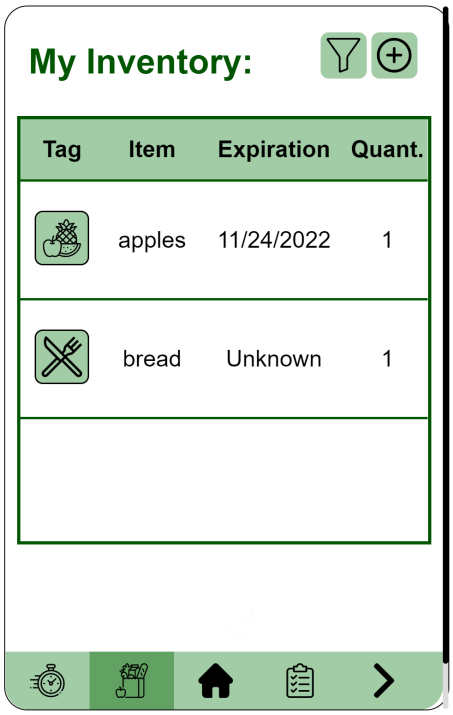
Add item to "My Inventory":



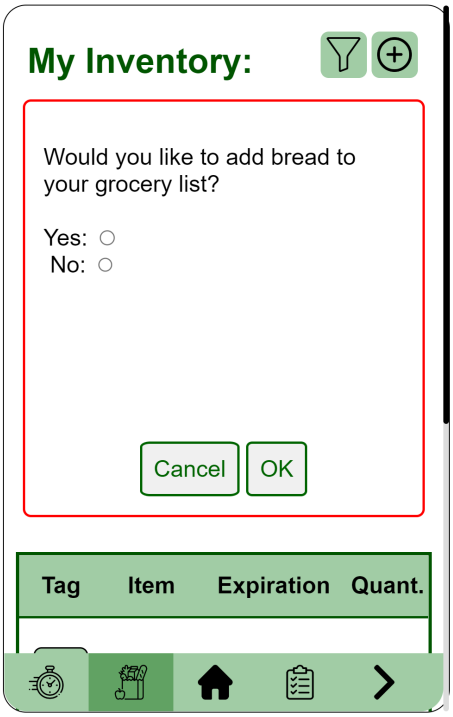
Alert if wrong data is input



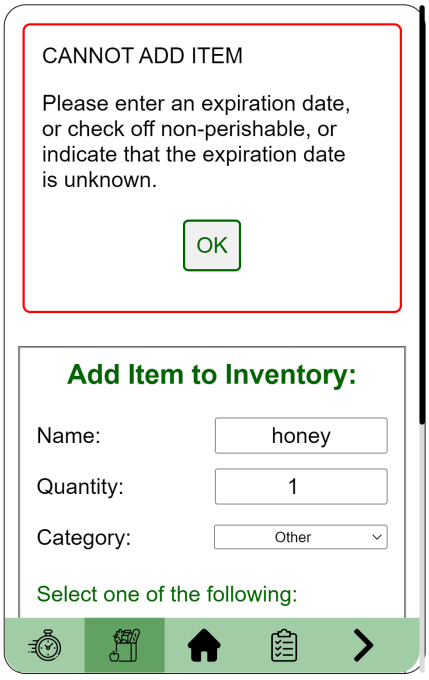
"My Inventory" after items added:



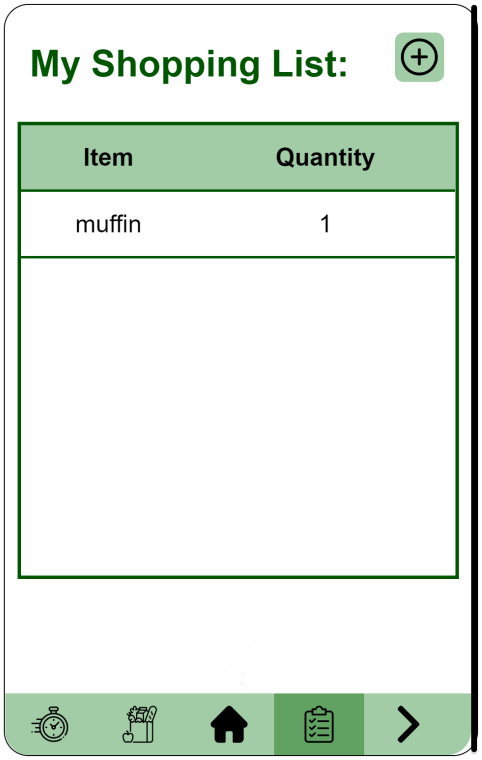
Removing items from inventory:



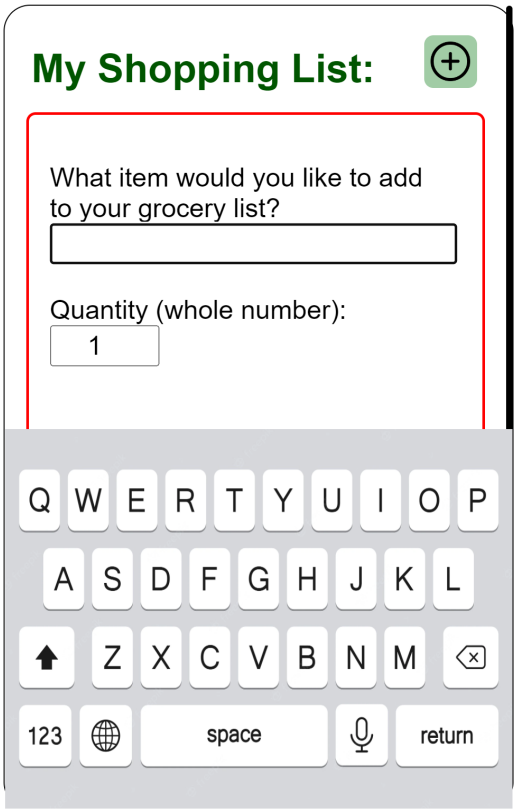
Alert for inventory:



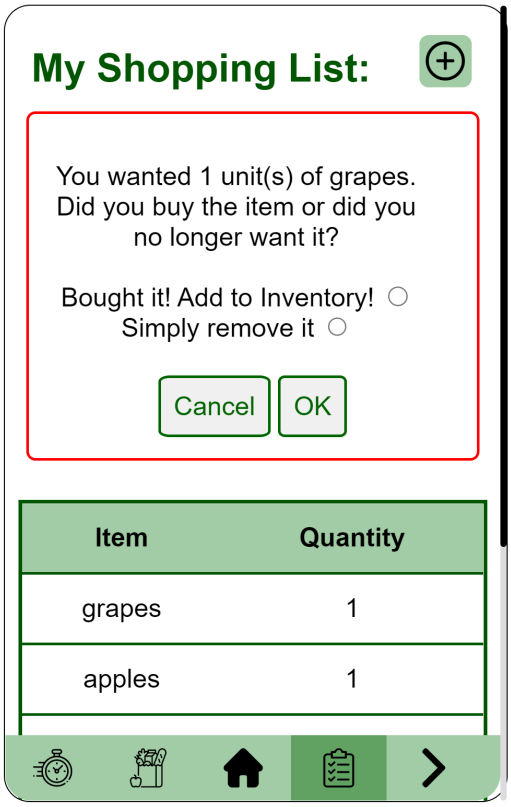
My Shopping List (populated with item that user removed from inventory):



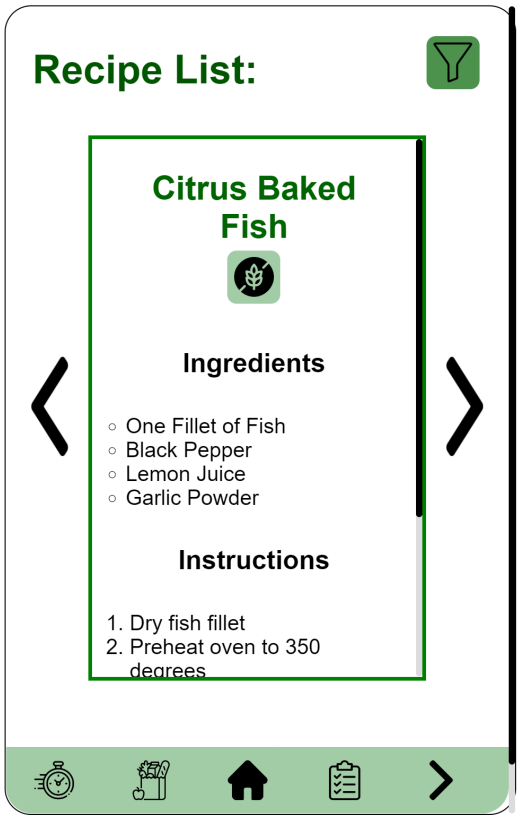
Adding item to shopping list:



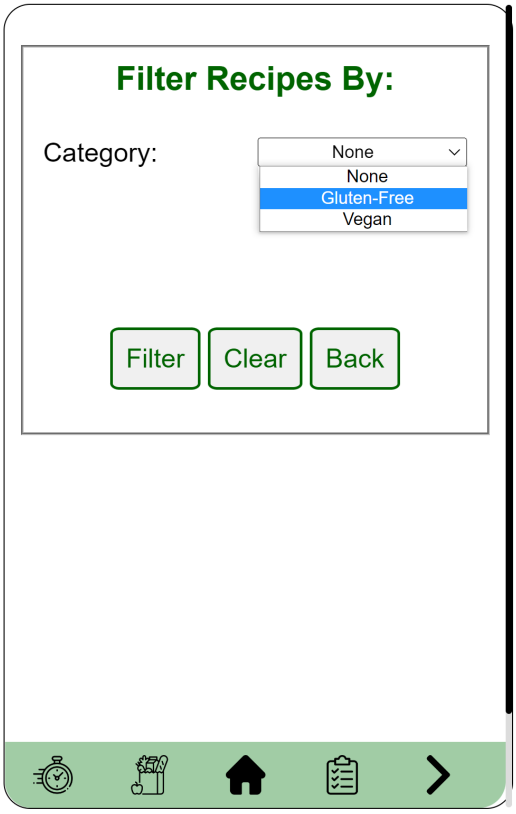
Removing item from shopping list:



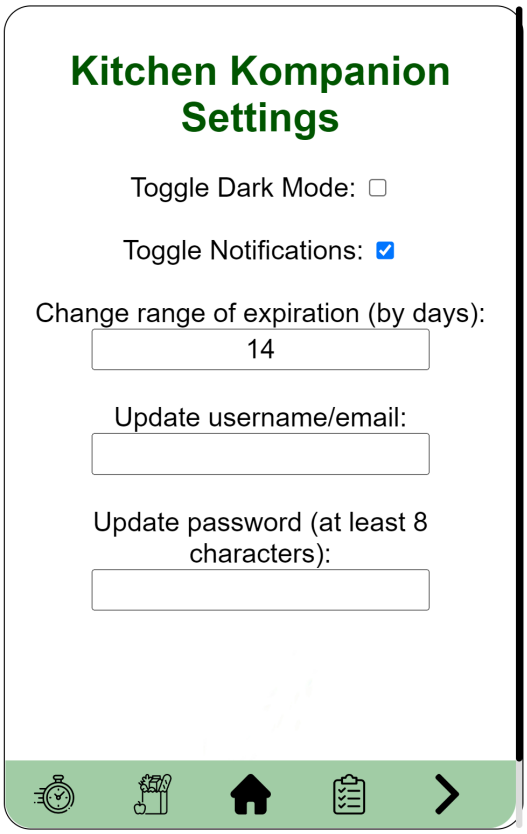
Recipe Page:



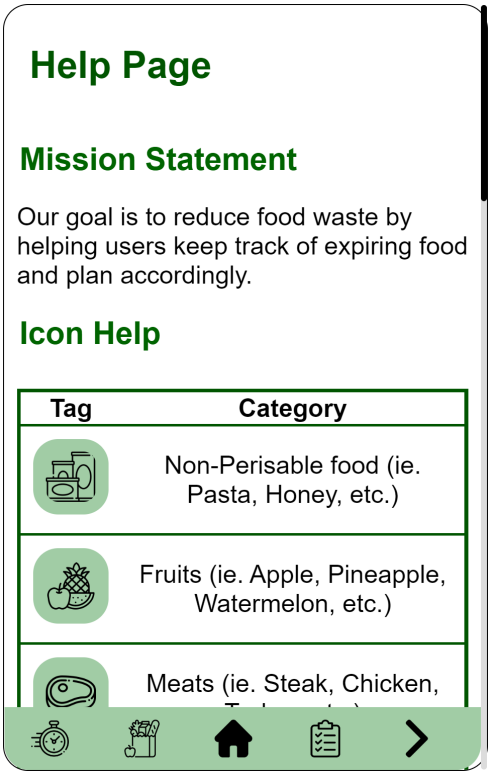
Filtering for Recipe page:

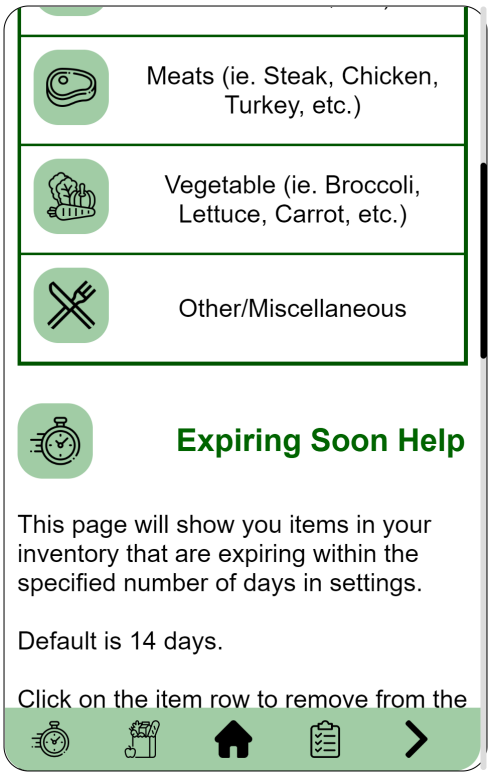


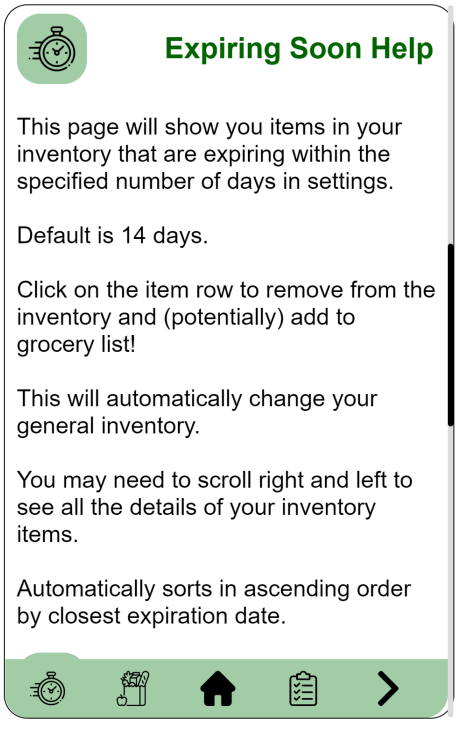
Settings:

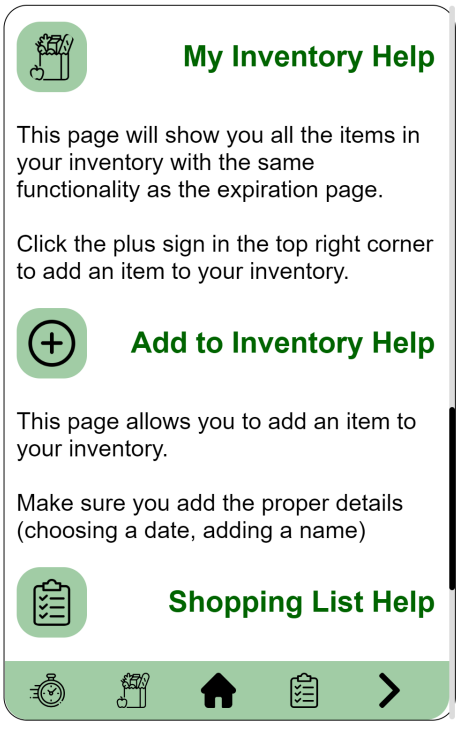


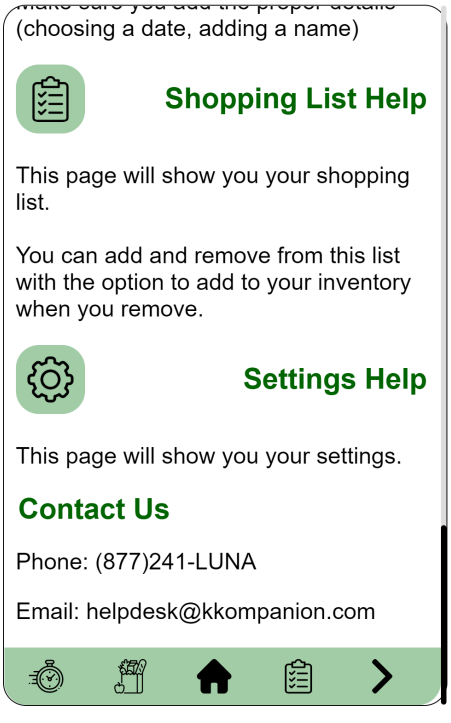
Help page:


Help Page
Mission Statement
Our goal is to reduce food waste by helping users keep track of expiring food and plan accordingly.
Icon Help
Tag
Category
Non-Perisable food (ie. Pasta, Honey, etc.)
Fruits (ie. Apple, Pineapple, Watermelon, etc.)
Meats (ie. Steak, Chicken,


Meats (ie. Steak, Chicken, Turkey, etc.)
Vegetable (ie. Broccoli, Lettuce, Carrot, etc.)
Other/Miscellaneous
Expiring Soon Help
This page will show you items in your inventory that are expiring within the specified number of days in settings.
Default is 14 days.
Click on the item row to remove from the


Expiring Soon Help
This page will show you items in your inventory that are expiring within the specified number of days in settings.
Default is 14 days.
Click on the item row to remove from the inventory and (potentially) add to grocery list!
This will automatically change your general inventory.
You may need to scroll right and left to see all the details of your inventory items.
Automatically sorts in ascending order by closest expiration date.


My Inventory Help
This page will show you all the items in your inventory with the same functionality as the expiration page.
Click the plus sign in the top right corner to add an item to your inventory.
Add to Inventory Help
This page allows you to add an item to your inventory.
Make sure you add the proper details (choosing a date, adding a name)
Shopping List Help


(choosing a date, adding a name)
Shopping List Help
This page will show you your shopping list.
You can add and remove from this list with the option to add to your inventory when you remove.
Settings Help
This page will show you your settings.
Contact Us
Phone: (877)241-LUNA
Email: helpdesk@kkompanion.com