CPSC 481 Fall 2020 – Team D
Project: Grocery Getters Stage 4
Tutorial 01
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Project Description:

The Grocery Getters mobile application will focus on providing shoppers with a way to optimize their savings and time while getting their groceries by using their phone. Based on their current location, users can choose their preferred store that they are shopping at and create a list that will use that store's specific inventory system. Our app allows for creating multiple grocery lists that allow users to check what items are on clearance and on sale, as well as show what the grocery store has in stock. From the store inventory menu, the user can add it directly to their grocery list and it can display the estimated prices for everything that is in their list. Previous grocery lists will be saved in the app and the user can go back to those lists to copy items into future lists. The primary target users of our app are students and older individuals that like to shop for sale items or move quickly through the store.

Updated User Tasks:

We will first list the user tasks that we prototyped vertically.

- User adds or removes items to their grocery list
  - Add item button will take them to the item search menu where users can then search store inventory based on the store location
  - Remove item button that will give users the option to take out items from their current grocery list
  - Can sort the list alphabetically, price, quantity and if item is completed

- Users can search for items on sale and clearance using their grocery list
  - App will display both regular price and sale price as separate columns
  - When searching sale items, they can directly filter the search by specifying "Only Sale Items"
  - Users are free to remove the filter at any point by tapping on the filter icon again and tapping the same "Only Sale Items" button to remove it

- Users can connect to the grocery store's inventory system to see total stock for an item
  - On the item search menu, users can see the available quantity for the items that they are searching for
  - When searching items, users can filter the search by specifying "Exclude Sold Out" and the query will remove any items with the quantity of zero

- Users can choose to price compare to grocery store competitors
  - User clicks on an item in their grocery list or the item search menu and there is a price compare button which will directly search up prices of the exact same item for different stores and then display the respective store name and distance

These are the remaining user tasks that were prototyped horizontally.

- For each grocery list, users can specify what grocery store they are shopping in and then have the option to set it as their preferred store
    - Each list will be specific to one store location upon creation but can be changed at any point in the settings

- Users can search for where items are located in the store
    - Users can click on an item on the Item Search menu which will then display the general section in the store and the product description in more detail

Heuristic Evaluation:

Over the course of our heuristic evaluations we were able to review our overall design and learn about what we did and did not do right. Both evaluators had fairly similar results, finding that Grocery Getters was able to satisfy all of the heuristics to at least some extent. Our app's design is quite streamlined and provides all the necessary information for a new user to operate it immediately and intuitively. The UI is not cluttered by excess information and clearly displays the actions a user is able perform. Not much error checking was implemented as Grocery Getters is so simple that there is barely any room to make any on the user's end. In terms of improvement, some icons and texts should be more obvious for the user so those issues were purely cosmetic and could be adjusted. Overall, we determined that we had a fairly minimalist design that could easily be used by any English speaker who has experience using apps.

Reflection:

The overall heuristic evaluation process went smoothly for ensuring that none of the rule of thumbs were violated for our mobile application. The evaluators were able to navigate through the application without any issues and provided the proper feedback needed for the reviewers. In order to help us determine more errors or faults within our application, having a slightly bigger team would have helped us more for the evaluation process. Ideally, having at least five people evaluate the application would be more beneficial in finding more faults but we were limited to only two evaluators and two reviewers. In turn, this made it slightly difficult for the reviewing end to fix potential issues because not that many were pointed out. If we were to do the heuristic evaluation again, having at least five evaluators and at least three reviewers would make the process more realistic.

Appendix:

1. Matthew Tamkee's Heuristic Evaluation

Rule of Thumb	Is this rule being applied? How so?	Is this rule violated? How so?	How can this rule further improve usability, utility and desirability?
1. Visibility of system status	Yes. Each page is titled so user knows what the purpose is. Pop ups for each action show up quickly every time the user does something.	No. The app clearly communicates what is happening currently on the page the user is on.	It allows the user to quickly determine what state the app is in and confirm that their action was completed properly
2. Match between system and the real world	There are different icons on each page. These range from click buttons to shopping carts. They make it so that the functionality is intuitive and implied.	It is not violated	Make some of the icons a little bit more intuitive and obvious. The home button icon is shaped like a house but not the most obvious.
3. User control and freedom	There are three buttons that exist on every page. The first is the home button as it allows a user to go to the main screen from any page. The same feature exists with the settings button for accessing the settings page. Lastly, the back button on every page is shown so that a user can move backwards.	No rule violations as the user never gets stuck on a single page.	A user never gets stuck and can restart the process if they get confused or make a mistake.
4. Consistency and standards	Each page on the app has a very good and similar base page. This creates a consistent experience among all pages so that users are never	No violations as the core experience and base layout is present on each page.	Having the consistent base layout is important so that users know where to find the core functionality on

	guessing where the features are.		each page preventing them from getting stuck.
5. Error prevention	Yes. There are pop-ups which confirm a user's action.	No. Pop-ups and clearly described titles on pages ensure the user doesn't make mistakes.	Being able to prevent errors is essential to having good design.
6. Recognition rather than recall	All features are easy to see.	No violations as the symbols and wording is easy to understand.	Gives the user an easy to understand UI so there is no confusion for the user.
7. Flexibility and efficiency of use	App is designed to be simple with core functionality only, thus there are no shortcut buttons in the app.	There is a rule violation as there are no shortcuts for the user to minimize time.	Having shortcuts can reduce the number of steps taken for each process.
8. Aesthetic and minimalist design	The app is designed to be simple, thus only the essential information and features are incorporated.	No rule violations as the app is already minimalistic.	Having a simple and minimalistic design prevents the user from being confused or getting stuck.
9. Help users recognize, diagnose and recover from errors	Yes. There is an error message if no items are selected and they use the 'add item' button. This prevents the action from being completed.	No. There aren't that many ways the user can make blatant errors while using the app.	No. There aren't that many ways the user can make blatant errors while using the app. Stops users from causing errors.
10. Help and documentation	Every task is easily labeled for understanding.	There is no distinct documentation however everything is labeled nicely so its easy for the user to understand.	Having the documentation allows the user to figure out how they are going to interact with the app.

2. Gabriel Martinez's Heuristic Evaluation

Rule of Thumb	Is this rule being applied? How so?	Is this rule violated? How so?	How can this rule further improve usability, utility and desirability?
1. Visibility of system status	Yes. Each page is titled so user knows what the purpose is. Pop ups for each action show up quickly every time the user does something.	No. The app clearly communicates what is happening currently on the page the user is on.	It allows the user to quickly determine what state the app is in and confirm that their action was completed properly.
2. Match between system and the real world	Yes. The terminology used to communicate what task the user is currently doing is simple for the convenience of English speakers. There are a variety of icons (search, shopping cart, etc.) and abbreviations which are fairly universal when it comes to app design.	No. Everything is in proper English and the symbols are straight-forward.	Making sure the user understands everything through the use of text and icons provides for a much more intuitive experience. This allows them to easily pick up the app and use it right away without having to look up a manual beforehand.
3. User control and freedom	Yes. There is a back button and even a home button on every page which allows the user to return to a previous page. There are also pop-ups which the user has to confirm for certain actions to ensure fewer mistakes.	No. There are clear exits that prevent the user from being stuck.	Having a way to leave pages easily makes for a smoother experience as users often make mistakes, even if they are experienced with an app!
4. Consistency and standards	Yes. Everything is proofread and the design is similar to other apps in certain functionality so most users should be immediately able to start using it without problem	No. It is quite consistent throughout its usage.	Having a straightforward and consistent system makes users want to continue using the app.

5. Error prevention	Yes. There are pop-ups which confirm a user's action.	No. Pop-ups and clearly described titles on pages ensure the user doesn't make mistakes.	Being able to prevent errors is essential to having good design.
6. Recognition rather than recall	Yes. All available options are clearly labeled for user convenience. Symbols are universal.	No. Everything is easy to understand right away.	Having an intuitive design helps the user to understand the system.
7. Flexibility and efficiency of use	No. The app isn't complicated enough to warrant shortcuts.	Yes. There is no shortcuts and there aren't any customization features for how the user operates the app.	This can reduce the number of steps necessary to use certain apps and speed up whatever task the user does.
8. Aesthetic and minimalist design	Yes. The app focuses on efficiency over complicated design. Only essential information is presented to avoid unnecessary clutter.	No. The app incorporates a very minimalist design, from the menus to the logo.	Prevents users from being confused about the content presented to them due to complicated aesthetics or design.
9. Help users recognize, diagnose and recover from errors	Yes. There is an error message if no items are selected and they use the 'add item' button. This prevents the action from being completed.	No. There aren't that many ways the user can make blatant errors while using the app.	Stops users from causing errors.
10. Help and documentation	Yes. Menus and tasks are clearly labeled for the user's benefit.	No. The documentation provided is easy to understand immediately.	Helps the user figure out what actions they will take next.

3. Reviewer's Findings

Based on both of the heuristic evaluations performed by two members of the group, we are able to see that the overall design of the mobile app has achieved straightforward usability and accessibility. The rules of thumb that mainly apply to this is the visibility of system status and match between system and the real world. The evaluators determined that the app's use of clear titles and icons makes navigation and functionality easy to use. As per the feedback for the previous stage according to our low-fidelity prototype, the user freedom was not the best as we did not use a back button and only had a home button. This has been addressed in the high-fidelity prototype to make user navigation more convenient and the evaluators both agreed that there was no violation for this rule. No problems for the app have been addressed for the stated rules of thumb so all severity ratings are at zero for usability and accessibility.

In regards to the design, the evaluators agreed that the mobile app is consistent and incorporates minimalistic design to tailor towards more end users without the need for extra help. Most symbols and wording are easy to understand meaning that explanations or tutorials for the app will not be required. The critical advice that is stated is for the home button in which the icon and text may not be obvious enough for some users. We will consider this severity one in which the problem is purely cosmetic. The fix should be straightforward as we will simply need to adjust the home icon and text to increase in size and have a slightly bolder coloring to make it more obvious for the user.

For error prevention, help users recognize, diagnose and recover from errors, and help and documentation, all severity ratings are at zero as well. The overall conclusion is that it is difficult for a user to make errors in the first place but when they do, a clear and useful message will show up stating the exact problem and how to avoid it. The only rule that was violated for the evaluations was the flexibility and ease of use category in which the app does not have shortcuts for the user to minimize time. We justify that this is not a huge issue for our application because we still give users a back button for each of the pages and each feature is normally within one or two steps of the user so our app is not complex enough to feature shortcuts.