Reverse Recipe

Final

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ABSTRACT

Reverse Recipe is an application that is designed to empower users to be able to shop, cook, and organize their kitchen in a revolutionary way. It aims to provide users with an accessible tool to help streamline and simplify their time spent on several aspects involved in the cooking process. The primary target demographic are adult-age individuals who have busy daily work lives and family obligations. The design of the interface has undergone revisions based on the research and analysis performed throughout development, which provided valuable insights on optimizing the design in order to deliver a high-fidelity interactive prototype and bring our vision to life.

KEYWORDS

high fidelity prototype; interactive prototype; heuristic analytical evaluation; empirical evaluation; peer review, user interface (UI); usability; user-friendly, discoverability;

I. Introduction

Heuristic, empirical, and peer reviews evaluations have been critical in improvement and optimization of our application's development. Heuristic evaluation helped identify any problems with the interface functionality that users had to overcome to be able to use the tool in its current state. The empirical user test focused on only one of the app's features to get a user's real-time perspective and assess if the interface is both easy and learnable, or if users experience difficulties when interacting with the app. The peer reviews examined our in-progress high-fidelity interactive prototype and provided us with valuable insights regarding current functionality of the app and further changes that need to be implemented. The outcome of these evaluations were incorporated into the updates of the app's workflow, final version of our high-fidelity prototyping deployment and were discussed in this paper..

II. Materials

Workflow of our prototype is presented in Appendix A. The link to our high-fidelity interactive prototype that was created by utilizing Figma is provided in Appendix B [2,3,4,5,6].

Design Discussion

I. New Changes

This section of the research paper details new changes and additions made to the prototype since Project 8, based on research as well as feedback received from peer reviews.

A recent peer review discussed how the Registration and Login screens did not have labels for form entry fields where users would type their email and password. The prototype contained sample text inside, but if the text was removed, users could potentially be confused as to what each box represented. To improve clarity, text labels were added to distinguish the fields for 'Username' and 'Password'. A third box for password confirmation was also added to the Registration screen, keeping in line with account registration standards.

There were discussions about potentially re-designing the landing screen to include larger buttons for immediate social media login - this would bring the social media options to the forefront with a stronger scent, which appears to be common in other services. However, this was not implemented as there was concern that doing so would make users feels pressured into linking their social media accounts, which would go against design objectives of encouraging user engagement and freedom.

Other clarity changes included changing 'Scan' on the Home screen to 'Item Entry', as a peer review noted that 'Scan' suggested that the only way to add to the inventory was scanning. The label did not provide a strong scent or indication that manual entry was available as well, leading to this change which should better describe the functions available to users. It was also noted that the Shopping List screen was lacking in information to make it meaningful to a user. Item quantity or weight has been added while also simplifying the overall presentation of each item in order to make the list more effective for users.

Some peer reviews expressed concern about a lack of help documentation, such as a tutorial, when navigating the app. Though *ReverseRecipe* aims for efficiency while still maintaining learnability for users, it was difficult to determine a method to improve this aspect. A previously discussed concern was that poorly implemented tutorials contributed to user frustration and may cause a user to feel restricted. Heuristic evaluations agreed with peer reviews, but empirical evaluation did not find that help was needed. The smaller scope of the app's research made it difficult to decide if a full tutorial was needed, thus this iteration would add small text to help guide users in areas that were found to be unclear in an attempt to improve user help. For example, the Settings screen includes such text next to the options to help describe their function to users.

Another issue related to lack of help involved deleting items in a list, such as in the Inventory screen. The previous iteration used a small red, vertical bar to indicate that a user could swipe on an item to remove it. However, a peer reviewer found that they could not determine its function from this. Thus, the design was changed to a larger red box with the label 'Delete', similar to some native iOS applications, to help users better understand its purpose and how to use it.

Color usage was originally intended to help with user recall of the location and purpose of certain buttons. The new iteration opts for the usage of mostly black and white theme buttons in response to peer reviews that found the design overstimulating at times, thus requiring too much attention investment in certain areas. Sticking to one theme for a majority of the app helps reduce any sensory overload that may be distracting users, keeping in line with the goals of user comfort and general usability. Similarly, the scale of images for recipes on the Recipe Results screen was adjusted to increase the amount of whitespace between results to help users distinguish between them. These types of changes were also made with the goal of minimalism in mind.

II. Justifications from Project 8

The UI design of the app has generally remained similar through the last few prototype iterations, with changes being made to address areas needing improvements based on feedback and research. As such, several design choices from Project 8 based on testing and evaluations remain the same, or have received small improvements. This section describes those adjustments, and discusses why certain design decisions remained.

Changes in button labels were previously made to resolve issues pertaining to the Nielsen heuristic of 'match between system and the real world', such when empirical evaluations found the label 'Match Recipes' to be an ill-suited choice of words, as 'match' holds similar meaning to words such as 'search', but is used less commonly. To further improve upon this aspect, the label has been adjusted to 'Search Recipe', which better suits social standards. Similarly, 'Pics' and 'Video' were changed in the Settings screen to 'Add Pics' and 'Add Video' to better represent their purposes. Recipe collections from popular sources or celebrities on the Recipe Book screen remained, as it helps user familiarity when using the app and did not distract or clutter the design.

The previous report discussed the possibility of including a “guest” mode in the application, allowing users to demo certain features in order to improve its overall accessibility. After review, the team concluded that, while the feature has its merits, the cost of time and resources to include it in a prototype was substantial. The feature remains to be developed at a later time, as its benefits become more substantial with popularity i.e. when the application has released and developed a larger user base. It was found that no peer reviews had requested or even discussed the feature, supporting the team’s choice not to implement it. It’s worth noting that the sample size of peer reviews is small, which may support the idea that a guest-friendly feature could become a priority once the application is in a larger market. Thus, further research and data on a larger scale would be needed to help determine the cost vs. benefit of its implementation.

One peer review praised the design of the Home screen, but disliked that the other screens in the app was not designed in a similar style or layout as the Home screen. The team discussed this, and decided not to change the style of other screens. One reason was that previous review and user-testing of earlier prototypes found that users disliked how the app maintained the same button layout and style across screens, remarking that it made the app feel tedious and bland. As discussed in previous reports, consistency can be important for learnability or familiarity; however, it was determined that the risk of user disengagement was greater and much more significant than the potential benefits of the previous design layout. Additionally, none of the other ten peer reviews in the final set discussed similar issues, with some noting that they liked that design throughout the app. Re-designing the style and layout based on one peer review would be illogical, as it could end up less liked by users or even result in unforeseen usability problems. As such, it was an easy decision not to make any major changes.

A ‘Home’ button had previously been added to help reduce excessive usage of the ‘Back’ button. A peer review discussed the potential benefits of expanding to include a navigation bar or a Hamburger menu. The team felt that including a dedicated navigation bar would clutter the screen, taking away from the app’s goal of being simple, comfortable, and minimal. The ‘Home’ button occupies minimal space, but provides substantial benefit by helping reduce user frustration and improving navigation. While a hamburger menu could be reasonable, it would ultimately provide minimal benefit, as all core features are quickly accessible from the Home screen, and any navigation options included in a hamburger menu would likely only save the user a single click.

ACKNOWLEDGMENTS

Shannon Farazi, Carter Fritsch, Dylan Kieu, Yu Chuan Tey, and Michael Ton, "Project 9", pp 1- 4, unpublished.

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Appendix A: (Our workflow was submitted separately)

Appendix B: Our Interactive Prototype in Figma

https://www.figma.com/proto/qJ8lpF9D2uCxRwrS5ZZ8Xe/Reverse-Recipe-Revised-Prototype?node-id=317%3A2928&viewport=-3%2C171%2C0.12459047883749008&scaling=scale-down

Peer-Evaluation of Team Members:

Table 1: Group members, Assigned Tasks, and Task Completeness Grade

Group Member name	Role	Responsibilities and Assigned tasks	Tasks Completeness Grade* 0-5
Shannon Farazi	Leader	● Managing the meetings ● Prototype and Workflow ● Helping on writing the document	5
Carter Fritsch	Collaborator	● Report: Justifications of design decisions ● Helping on writing the document	3
Dylan Kieu	Collaborator	● Prototype and Workflow ● Helping on writing the document	5
Yu Chuan Tey	Collaborator	● Prototype and Workflow ● Helping on writing the document	5
Michael Ton	Collaborator	● Report: Justifications of design decisions ● Helping on writing the document	5