Project: smartMirror

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ABSTRACT
In this paper, we describe our high fidelity prototype, and related design decisions. After a brief introduction to the problem we are trying to solve along with target demographic, we describe changes made to the prototype. After working with our evaluation steps last assignment, we summarize the improvements made here. Additionally, specific design decisions made for each screen follow. Included is also a storyboard of our prototype, and finally the interactive prototype itself.

CCS Concepts
• **Human Centered Computing -> Interaction Devices -> Imagers and Displays**

Keywords

Mirror; Fashion; Clothing; Shopping; Internet Shopping; Voice Interface; Mobile App;

1.   INTRODUCTION
The smartMirror project aims to revolutionize modern shopping paradigms by providing easy and quick access to a virtualized wardrobe. The mirror is designed to be used at a store or conveniently in your home. It projects a retained set of digitized clothing options, representing real items that can be purchased, onto the user's body in a mirror. This paper describes how the execution of our plan was carried out, the tasks that were performed, which techniques we used and why, relevant materials, and any alterations to the original plan.

Our primary audience is a middle class shopper, leaning towards women. While usable by men, we foresee our primary demographic being women. The application allows the user to try on clothing at home or in the store quickly, as well as allowing them to scan in items from the store to save for later.

2.   Design Decisions and Justification
We have a few options to pick from, from our original ideas for the prototype. We opted to go with a mobile application due to simplicity, and learnability by the user. In our cognitive walkthroughs and empirical testing, we found these decisions justified due the familiarity of the interfaces. A few issues we found were that we were missing a couple screens, as well as not providing clear user feedback to particular buttons.

In this section, we discuss the additional screens we included, and then a summary of each screen's purpose and design decisions.

2.1   Additional Screens
Feedback we received included a major point of missing screens. We added three screens in total, reset password, recently added outfits, and barcode feedback.

The first was added as one of our team noticed there was no way to recover account info from the login screen. This was a simple fix, and so we added it. Second, the recently added outfits screen is where you are taken after scanning and confirming a barcode scan. Lastly, the barcode feedback screen is a confirmation screen that the user goes to in order to assure the user the scan was successful.

Another important addition to our layouts was the addition of the hamburger menu to every screen. We found we had no easy way to navigate to the home screen, so we added it to every page. This is present in the interactive prototype.

Lastly, we did our best to add more pictures to our prototype, as suggested by the empirical interview with our user. While a low fidelity prototype, she felt that it was rather plain.

2.2.   Design Decisions

2.2.1   Hamburger Menu
Each screen has a hamburger icon leading back to the Hamburger Menu so the app is easier to navigate and and get to items like the Home screen, User Profile, Categories, and Logout. Which were easier to find and get to based on user feedback we found with our prototype evaluation. The Hamburger Menu is a standard menu that a user will be familiar with in other mobile apps that someone may have used and it is designed to be this way.

2.2.2   Login
The Login screen design is very basic where the user will type in username and password. There is also a tab in case the password is forgotten. This design is based on a familiar login sequence and the prototype feedback showed this was fully understood and a simple concept.

2.2.3 Reset Password

The Reset Password screen is designed to be simplistic and familiar. There's one textbox (account email) that the user can input into, and one button (Reset Password) that the user can click. It really couldn't be simpler than this, and this is a standard method of password resetting so users will be familiar with its use.

2.2.4 User Profile

The User Profile is also designed to be a screen that's easy to understand and fill out. First name and last name are standard fields as are age and location. The radio Male/Female is also straightforward. The single button, "Save", clearly saves the information they have inputted; there's little room in this screen for the user to make mistakes. The smartMirror isn't really dependent upon information about the user to function, so there's no need to gather lots of it.

2.2.5 Barcode Scanner/Barcode Feedback

Screen added to illustrate visual feedback of a successful barcode scan for our barcode scanner. Consist of a pop-up message "Successful" as well as new buttons to "save" or "undo" a scan.

2.2.6 Categories

The Categories screen design is based on what a user would like to see when shopping like clothing categories (i.e. jeans, suits etc.), sale items, and hottest trends. The category design screen is clearly marked and self explanatory making it easy for the user to understand and navigate.

2.2.7 Recently Added Outfits

The Recently Added Outfits screen contains groups of up to 6 boxes, each of which can represent one of the individual items that makes up the outfit. The purpose of this screen is simply to display recently uploaded outfits, there is no user interaction outside of simply seeing the outfits. This provides a way for the user to know that they have successfully added an outfit to the smartMirror.

2.2.8 Gallery

The Gallery screen will allow the user to choose a product category (see above category reference) to browse and also the ability to Sync that product with the smartMirror based on simple picture icons of the user's choosing. The Sync button is self-explanatory and stands out on the screen with a tab button to choose from. This screen also has the standard hamburger menu for easier user navigation

2.2.9 Fashion Advice

The Fashion Advice screen will display the user's chosen outfit picture that they want to compare to a current fashion picture. The comparison will display a percentage of how fashionable the user's current choice is when compared to current fashion and based on expert feedback. There is also a horizontal Fashionable bar below the two pictures so the feedback given as a percent is more visible to the user.

2.2.10 smartMirror Sync

This screen was designed to have the user stand in front of the smartMirror and take their picture by simply pressing the only button on the screen. These photos will sync with the items chosen from the application.

2.2.11 smartMirror

This screen will display the user's profile picture in the upper left side of the screen in a circle which is a standard account design. The username and the current outfit picture and name will be displayed on this welcome page.

3. Storyboard

Please see appendix A for the storyboard of our prototype.

4. Interactive Prototype

Please see the separate pdf included with the assignment. We tried to combine the written portion with the pdf, but it caused issues we were not able to resolve with the pdf links.

5. Conclusion

Our prototype has evolved quite thoroughly since its initial conceptions weeks ago. We have found pain points for the user, and improved overall usability and flow through the application. By building a storyboard and an interactive prototype, we've fully fleshed out how a user would, and will use our application. By working through these exercises, we've made great improvements overall, and are looking forward to the final project.

Appendix A: Storyboard

smartMirror App StoryBoard

1. Login-Screen

1.b Reset Password Screen

2. Home-Screen

3.

Hamburger Screen

Scan Barcode

Successful Barcode

Shopping Screen

Sync Screen

Taking Pic

Recently-Added

Fashion Advice