2e: Design Check-In

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Existing Tasks

Selecting an outfit to wear for the day (Easy)

Michael is a 22-year-old University of Washington student. Certain factors affect how he chooses his outfit for the day including the weather, the occasion, and comfort. Today, Michael is heading to 6 hours of class followed by a meeting with his Formula Motorsports team. The Formula team is meeting with a potential sponsor for a project, so Michael wants to dress business casual. Additionally, Michael checks the weather on his iPhone app and finds the weather will be overcast and 42 degrees. Considering his meeting and the weather, Michael chooses to wear leather boots, dark jeans, a button-down shirt, and a high-end rain jacket. Michael picks out these clothes from his wardrobe, dresses himself, and heads out to conquer his day. With the inclusion of our design, Michael is able to receive outfit selection choices through our product that factors in the weather, occasion and comfort.

Maintaining a clean, organized, and accessible wardrobe (Moderate)

Simon is a 26-year-old data scientist in Amazon. He lives in a studio apartment in South Lake Union. One year ago he chose to live in Seattle because he loves the pretty scenery and distinct seasons there. As he is enjoying his life in Seattle, he started to notice that his wardrobe is getting cramped up – He has acquired a variety of clothing for different seasons and occasions. Instead of living in Pomona in California, where he would just keep some shirts around for the year, he now deals with the problem of searching for a specific waterproof jacket in his wardrobe on a rainy day. On the next weekend after laundry, he decided to sort out his clothes and put them back according to their types. He didn't enjoy the process and was content with his wardrobe layout. However, in the next week after he interacted with the wardrobe, he found that some jeans he wanted to wear was hidden deep in the closet. And he then repeated the process and has yet to find the perfect placement for his items. With the inclusion of our design, Simon is able to view intuitively his inventory and make rational decisions on where to put his clothes.

Properly dispensing their wardrobe of unworn items (Moderate)

Ashley is a 23-year-old barista. She's really not that interesting but sometimes she looks through her closet and notices clothes she doesn't really know why she bought. Some items are out of fashion, don't fit well, or don't fit with the rest of her wardrobe. Ashley notices these unwanted items sometimes but doesn't feel particularly motivated to get rid of them because they still fit in

her wardrobe. With the inclusion of our design Ashley will be explicitly notified of these items that are never worn in her closet, so she can take action. Possibilities range from donation to online sale for more expensive items

Visualization and evaluation of the outfit selection (Hard)

Vanessa is 17-year-old high school student at Mercer Island High School. On a bi-weekly basis, Vanessa goes to the Bellevue Mall with her high school friends to buy new clothes. Through these frequent shopping excursions, Vanessa has acquired a large amount of clothing options. Every night before school, Vanessa looks through her wardrobe to pick out her outfit. However, she sometimes thinks about what she wants to wear when she is not at home near her wardrobe. With the inclusion of our design, Vanessa is able to scroll through and explore her wardrobe options with her phone, combining certain items and testing out potential combinations. Because she can visualize her wardrobe through her mobile device, she's able to choose an outfit anywhere and anytime.

Exploring and evolving an individual's fashion options (Hard)

Annalise is a 21-year-old college student at the University of Washington. She belongs to a sorority, but lives out in a house with 8 other people off campus. Annalise has her own room, and plenty of storage space for clothing. As a result, she often buys new clothing, and hardly gets rid of anything. Annalise would like to be more fashionable and adventurous with her outfits, but she feels like it takes her too much time to find new outfits amongst all of her clothing. Time is often a factor in her dressing process. With the inclusion of our design, Annalise will be able to look through *ALL* potential "working" outfits in her wardrobe as decided by our algorithm. She will be able to explore all reasonable possibilities without trying them on, choose from a limited set of options if time is extremely short, or narrow options down based on selected parts of the outfit.

New Tasks

Maintaining a detailed catalog of their wardrobe (Hard)

Cody is a 24-year-old Product Manager at TUNE in Seattle. Cody lives in Capitol Hill and commutes to work via the Sound Transit LINK. Cody has developed a large wardrobe due a combination of an ever expanding fashion interest and a large walk-in closet in his new apartment. Cody is sometimes overwhelmed with the vastness of his closet and wardrobe size and sometimes has a difficult time remembering what items he has in his possession. Cody is able to query and filter for certain items based on certain criteria(weather, occasion, comfort, etc.) through a mobile app. Cody has two options to establish this wardrobe inventory. Cody can initially go through his wardrobe and scan every item for our design's onboarding process, or Cody can scan one outfit at a time day-by-day to slowly establish his inventory.

Design 1: Magic Mirror

The first design is a standalone smart mirror designed to be placed in the owner's walk in closet or bedroom. The mirror will be two way, able to act as a mirror, and also display information on-screen about weather, daily plans, time, and outfit options.
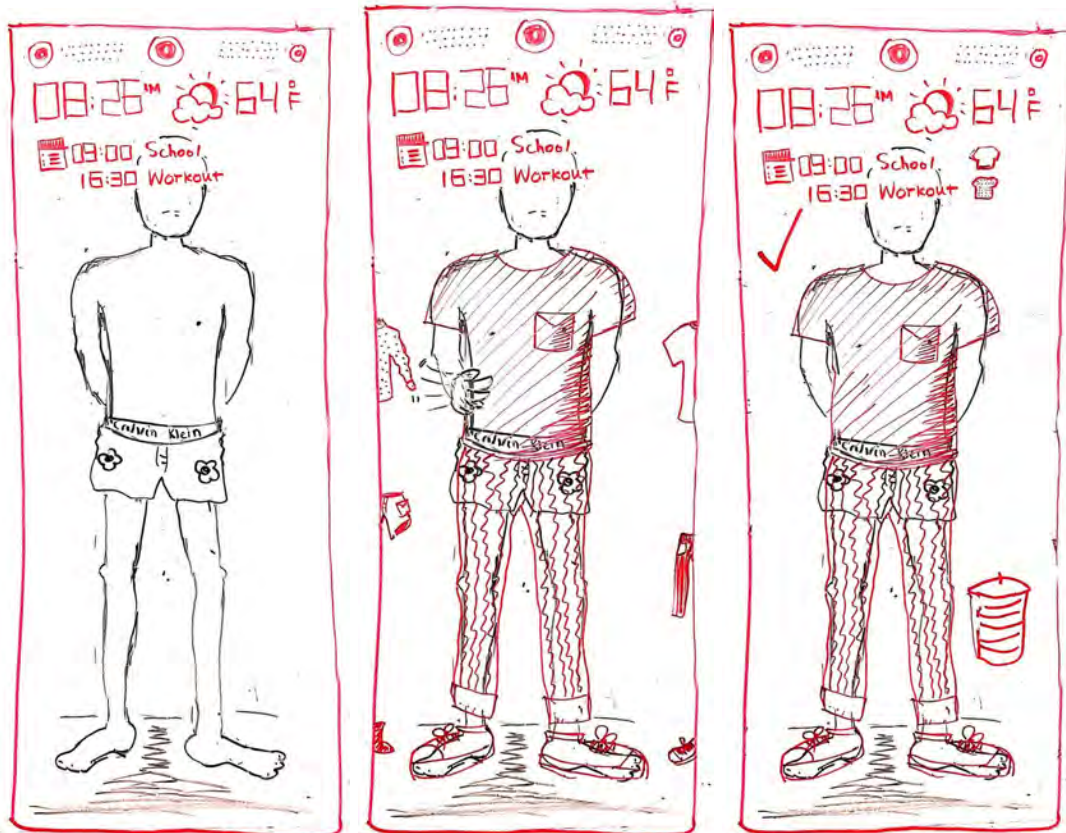
Task 1: Selecting an outfit to wear for the day

The mirror is also a full size display, so outfit options for the day will be displayed on screen, allowing the person swipe through potential outfits via voice commands or gestures. The outfits would be selected from the person's wardrobe based on the above parameters, such as weather and the person's schedule. If they want a specific look, they select a specific style or article of clothing to have potential outfits generated for, via voice command.

Task 3: Properly dispensing their wardrobe of unworn items

Because the mirror tracks daily outfit selection and compares it against the entire wardrobe inventory, it will keep track of items that are unworn, whether the person consistently rejects outfit selections with the item, simply chooses not to wear it, or has a lack of matching items. If an item

has been unworn for a certain length of time, perhaps 6 months (although this is arbitrary), the mirror would display the item and suggest a location to donate to, sending directions to their phone. The definition of unworn item would vary on articles of clothing, for instance, a heavy coat would not be marked unused if it has been consistently warm over the past several months and there was no appropriate time to wear it

Task 5: Exploring and evolving an individual's fashion options

Since the person's entire wardrobe is stored in memory, the device will explore all potential outfit permutations that are deemed acceptable (simply that they match and look decent) and classify them by type of outfit. This would automatically explore all wardrobe options for you, revealing combinations of clothing that would otherwise be unexplored

Task 6: Maintaining a catalog of wardrobe items

The mirror is equipped with cameras, so each outfit is scanned as it is selected if chosen by the person independently, or explicitly selected from onscreen options. After buying new clothing, you would have to do an initial scan, simply by looking in the mirror with the new clothing items. People can scroll through the entire inventory of their wardrobe on the mirror via gestures and voice commands.

Design 2: Mobile application & Camera Mirror

Task 1: Selecting an outfit to wear for the day

Similar to the smart mirror, the application will display suggested outfits for the day on screen, based on conditions such as weather and planned events. The outfits are chosen from the local inventory recorded and stored in the device's memory. The interactions will be based on the touch screen of the mobile device.

The application tracks the person's selection to learn his/her dressing pattern.

Task 3: Properly dispensing their wardrobe of unworn items

The application tracks the items that are consistently rejected or ignored by the person. Similar to the mirror, if an item has been unworn for a certain length of time, the application will suggest a location to dispose/donate the item to.

Task 4: Visualization and evaluation of the outfit selection

Instead of displaying items on the mirror in design proposal 1, this design will present the visualization and evaluation on the phone's screen. The benefit of this is that the visualization can

be achieved regardless of the person's physical location. Instead of only viewing the person's collection in front of the mirror, he/she can browse/present his/her selection anywhere.

Task 6: Maintaining a catalog of wardrobe items

Instead of embedding all functionalities in the mirror, the mirror in this case will only be equipped with a camera and a bluetooth/Wi-Fi module to communicate with the mobile client.

When the person needs to record new items or evaluate existing ones, he/she can stand in front of the mirror with the items and turn on the camera on the mirror in the mobile app. Then the mirror will take a photo and transfer it to the application for further analysis. After the application has gathered all necessary information, it will store the items in a categorized gallery.

Design 3: Standalone mobile application

Task 1: Selecting an outfit to wear for the day

The standalone mobile application, working similarly to designs one and two, will select outfits for the person based upon factors such as weather, occasion, and activity type. In most cases, the application will determine these factors automatically. For example, the application can grab the weather information from a weather API and occasion and activity type through authorization to the person's calendar. However, users will be able to change or input additional factors from within the application to increase the accuracy of the wardrobe selection. For example, if the weather projection is incorrect, the person will be override the suggested weather outfit selection and opt in for a more appropriate outfit. The application will display a set of suggested outfits based on the factors and direct the user to pick them from their closet.

Task 2: Properly dispensing their wardrobe of unworn items

The mobile application will present the person with two methods to consider dispensing their wardrobe of unworn items. The first option will come when the person is engaged with the first task, selecting an outfit to wear for the day. If the person constantly ignores the item after a threshold of time, the mobile application will suggest to the person they dispense of their item due to infrequent to none wear. The second method requires a more direct approach from the person; while the person is participating in task 6, maintaining a catalog of wardrobe items, they will have the option to "tag" or "rate" each item of clothing. For example, the person can be exploring their inventory of pants and come across an item they don't like and haven't worn in long time. They can mark this item as "dislike." When the "dislike" option is triggered, the user will be prompted with a message suggesting they take the item to their local goodwill or post on a selling site such as Craigslist, Facebook Marketplace, and OfferUp.
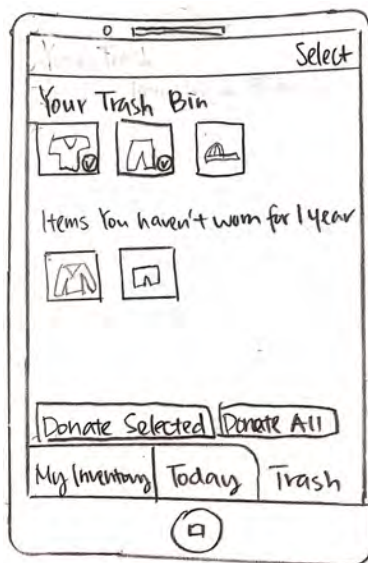
Task 4: Visualization and evaluation of the outfit selection

One of the obvious benefits of a mobile application over smart mirror is the "mobile" factor. The smart mirror design provides for the same visualization task, but in a large mirror display in a fixed location. With a mobile application, the user is able to visualize their outfit selection and wardrobe inventory on the go--whether that be at the office, classroom or even in bed. For example, if the person wakes up on a lazy morning with plenty of time to get ready for the day, they can scroll through their wardrobe looking for the day's outfit from the comfort of the bed. There is no need to get up and stand in front of the mirror. Although getting out of bed is a simple task requiring minimal effort, we hope to make this process as comfortable as possible

Task 6: Maintaining a catalog of wardrobe items

Through the mobile application, the user will be add new (and existing untagged) items to their wardrobe through the device's camera. When the user acquires a new clothing item, they can click the "input item" button on the application. The application will take direct the person to the camera view, where the person will photograph their item in a frame, similar to other applications in which the user can input their credit card information by photograph. Once the photograph is taken, the user will directed to add certain tags (size, comfort level, occasion category, etc) to assist in the outfit selection process