Team Grimer (Applied 03)

Storyboarding and Low-Fidelity Prototypes

Planning for food donation guidance app

2024

User interface design and usability

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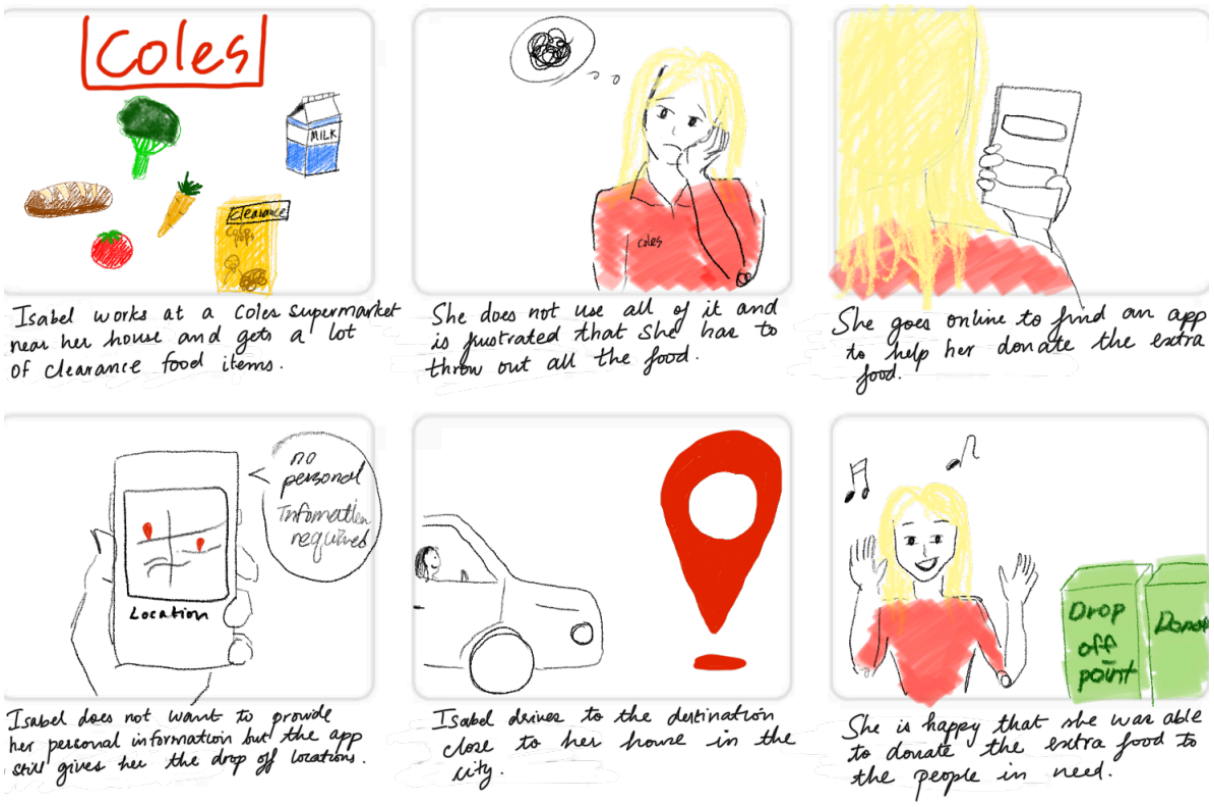
Introduction:

This storyboard and low-fidelity design report outlines the development of a mobile app focused on facilitating food donations while ensuring user privacy and accessibility. The app aims to help users find safe drop-off points and manage leftover food efficiently. Key features include location accuracy, language support, and user feedback mechanisms. By adhering to Norman's usability principles and WCAG guidelines, the app ensures a consistent and inclusive design. The goal is to create an intuitive platform that enhances community engagement and supports user needs effectively.

1. Storyboarding

User story 1:
"As Isabel Mercado, I want to find safe, city-based food drop-off points without sharing my personal information so that I can contribute to the community without compromising my privacy."

Storyboard 1:



User Story 2:

"As Yoonchae Shin, I want an easy-to-use mobile app which will help me with solutions to manage my leftover food so that I can contribute to the community."

Storyboard 2:

Youchae enjoys cooking for her family and likes to try out a lot of new dishes

But her family does not always finish the food and it ends up wasted or put in the fridge.

Youchae wants to help the community and donate the food but she is not tech-savvy and does not fully understand english.

She finds the app which translates to her native korean and she can understand the app now.

She is able to easily understand the app and find locations for food drop off near her home.

She rides her bicycle over and drops off the food and she is happy that she has helped the community.

2. Low fidelity prototype and design

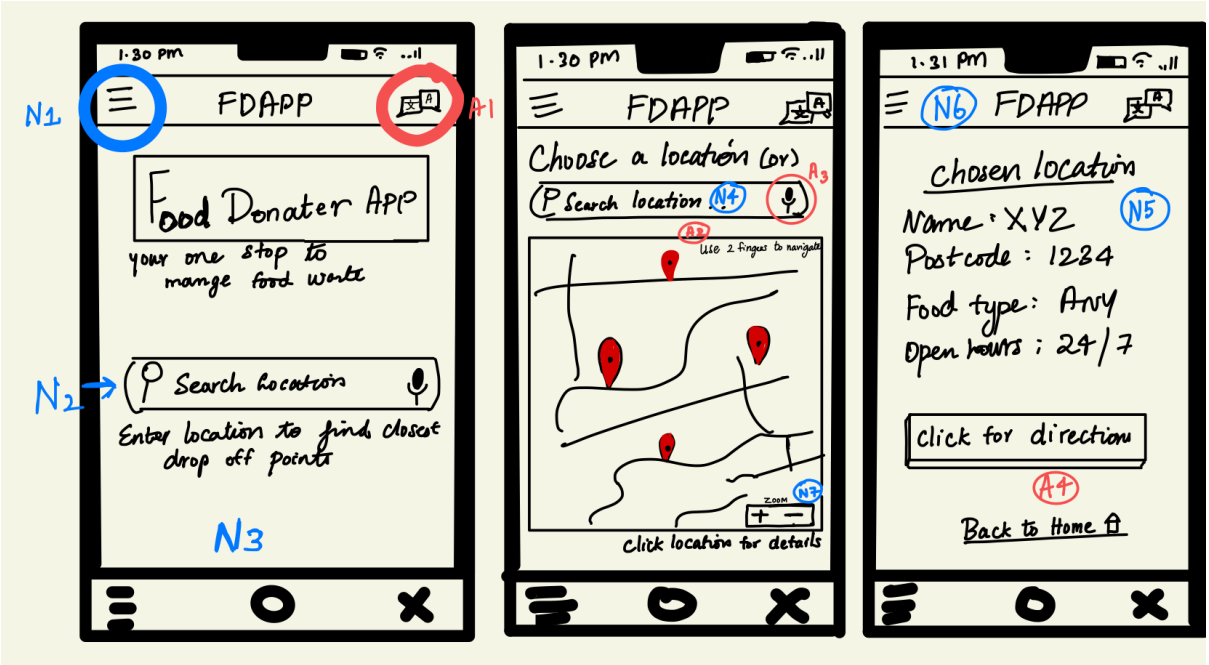
Kanban Board for Acceptance criteria

User Story	To do	Doing	Done
U.S.1: As Isabel Mercado, I want to find safe, city-based food drop-off points without sharing my personal information so that I can contribute to the community without compromising my privacy.	A.C.1.1: **Privacy Preservation:** • **Given**: I am using the app to search for food drop-off points. • **When**: I click on “Search Locations” to find drop-off locations. • **Then**: The app should not require me to enter any personal information (e.g., name, email, phone number) to view the results.		Done. Home screen does not ask for any information but search location.

	A.C.1.2: **Location Accuracy** ● **Given**: I am on the app's search interface. ● **When**: I input my city or zip code into the search field. ● **Then**: The app should display a list of food drop-off points that are accurate and relevant to the specified city or zip code.		Done. Once location is entered in the search results page shows her drop off points. The search bar is visible again if they want to update the location.
	A.C.1.3: **Drop-Off Point Details** ● **Given**: I am viewing details for a specific drop-off point. ● **When**: I access the detailed information for that point. ● **Then**: The app should provide comprehensive details including address, operational hours, and any specific instructions for donations.		Done. On selecting the location a detailed view of that location is shown to the user.
	A.C.1.4. **User Feedback** ● **Given**: I have used a food drop-off point. ● **When**: I choose to leave feedback about the drop-off point. ● **Then**: The app should allow me to submit feedback and rate the drop-off point without requiring any personal information.	Doing/Not implemented	
	A.C.1.5. **Food type search Filters** ● **Given**: I am on the search results page. ● **When**: I apply filters for	Doing/Not implemented	

	different types of drop-off points (e.g., contactless, secure bins, food type etc.). ● **Then**: The app should update the list to show only those drop-off points that meet the selected filter criteria.		
U.S. 2 As Yoonchae Shin, I need a mobile app that helps me locate places to donate my leftover food. The app should be easy to use, accommodating my eyesight impairment and language issues, so I can effectively contribute to the community.	A.C.2.1: **Language Support** ● **Given**: I have language issues and may not be fluent in English. ● **When**: I access the app. ● **Then**: The app should provide a language change option at the top right of the screen. The language selection should apply to all app content and navigation.		Done. There is a translate button on the top of all the screens right which when clicked can be used to change the language of the app.
	A.C.2.2: **Simple Navigation** ● **Given**: I am using the app to find donation locations. ● **When**: I navigate through the app. ● **Then**: The app should have a straightforward and intuitive user interface with large buttons and clear labels. The design should minimise steps required to locate donation sites.	Most design features implemented but can be improved	The UI has large text and buttons making it easy to use and understand.
	A.C.2.3: **Get Directions Button** ● **Given**: I have selected a donation site from the map. ● **When**: I want to navigate to that location. ● **Then**: The app should		Done. There is a “Click for directions” button at the chosen location page which will direct the

	provide a "Get Directions" button that, when tapped, opens a navigation app with directions to the chosen drop-off location.		user to the navigation app for directions.
	A.C.2.4. **Accessibility Features** • **Given**: I have visual impairments. • **When**: I use the app to locate donation sites. • **Then**: The app should offer high-contrast mode and support for screen readers. The app should use minimal text and large font sizes to ensure ease of understanding and readability.	Yet to implement high contrast mode and screen reader support.	Implemented voice to type feature



3. Design

Justification of User stories and acceptance criteria:

The selected user stories reflect the key aspects and expectations of the personas from the initial research conducted in the earlier assignment. One persona (Yoonchae Shin) values ease of use and simplicity and the second persona (Isabel Mercado), though she is quite tech savvy, only wants to use an app without sharing her personal information. These user stories highlight the pain points of these personas and can be used to emulate the most fundamental aspects of the app which are the most essential features for most users

The chosen Acceptance criteria align well with the user story and provide the key aspects to satisfy the user. For example for Yoonchae Shin who wants the app to be easy to use and offer multi-language support, these features were a must and were crucial to satisfy the user story. There are yet some acceptance criteria which are yet to be designed or implemented but these can be considered as additional features which can be implemented later on.Example high-contrast option and food type filter option for search.

Norman's Principles:

1) N1 - Navigation Menu icon

Principles:

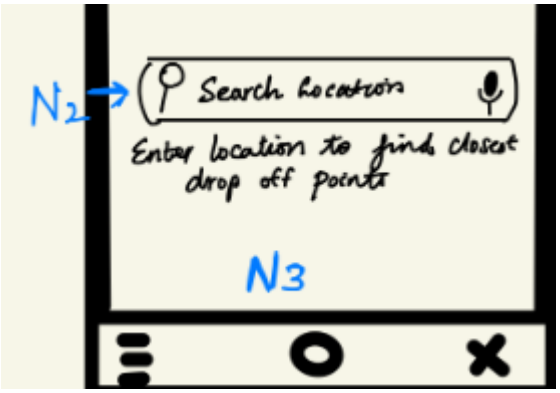
1. Visibility:

- The icon is always visible on the top left, making it easy for users to locate the navigation options at any time.

2. Consistency:

- Using a familiar nav menu icon (three horizontal lines) across all pages provides a consistent navigation experience. Users know where to find the menu regardless of the page they're on.

2. N2 - Big search bar with search symbol and “Search location” text:



1. Visibility:

- The large size and clear placement of the search bar make it immediately noticeable, ensuring users can easily find the search function.

2. Affordance:

- The combination of a search icon and a text input box clearly communicates to the user that they can type into the bar to search. The visual design suggests the action.

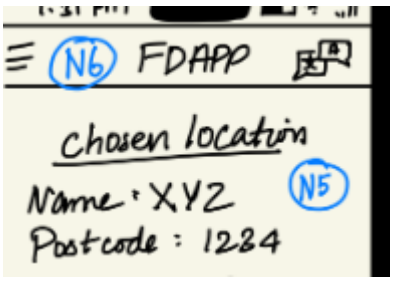
3. Feedback:

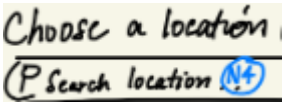
- As users type into the search bar, they usually get immediate visual feedback (e.g., text appearing, a list of suggestions) that confirms their input is being registered.

3. N3 - Consistent colour and theme throughout the app:
   N6 - Consistent header throughout the app:
   N4 - Consistent search bar on search page:

1. Consistency:

- Maintaining the same color scheme and theme across all pages ensures that the design feels unified and cohesive. This reduces the cognitive load for users, as they don’t have to adjust to new visual environments as they navigate through the app.





4. N5- Presenting details in a big size, clearly, and with less clutter

1. Visibility:

- The use of large, clear text and prominent elements ensures that important details are easily noticeable and readable, minimizing user effort to find the information they need.

2. Simplicity and Constraints:

- Reducing clutter and only displaying the most important information adheres to the principle of constraints, as it limits the amount of irrelevant or distracting content. This makes it easier for users to focus on key actions or data.

5. N7 - zoom in/out button on a map interface

1. Feedback:

- When the user clicks the zoom buttons, the map immediately zooms in or out, providing instant feedback that confirms the action was successful.

2. Mapping:

- The relationship between the zoom buttons and their effect is clear: pressing the plus button zooms in, and pressing the minus button zooms out, matching user expectations.

Guidelines/Principles for accessibility/inclusivity:

1. A1: Translate button for language

1. Navigable

- Implementation: The button is placed in a consistent and predictable location within the app, such as the top navigation bar , making it easy for users to find and use.

2. Distinguishable:

- The translate button has sufficient colour contrast against its background. This means users with low vision or colour blindness can easily see and identify the button.

2. A3. Speech to text button

1. Navigable

- Implementation: The icon is placed on the right side of the search bar which is easy to reach and access when needing to search using voice.

2. Predictable

- Implementation: The icon's behaviour is predictable meaning the function of the icon when clicked is predictable as the user of voice to text is universally used in search bars.

3. A4.Click for directions button:

1. Distinguishable

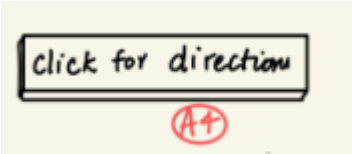
- The button has high colour contrast with its background, ensuring it is easily visible to users with low vision or colour blindness. The button is designed to be large enough to be seen clearly and tapped easily.

2. Operable:

- The button is designed with a sufficient touch target size , making it easy for users to tap. It is responsive to touch commands.

3.Understandable:

- The button is clearly labelled with text like “Click for Directions” and provides a predictable action, such as opening a map or showing directions, so users know what to expect when they interact with it.



General Accessibility features from consistent design:

1. Uniform Layout: Each page uses a similar layout and structure, so users know where to find key elements, like navigation menus, search bars, and content areas.
2. Consistent Navigation: Navigation elements are placed in consistent locations across all pages, allowing users to easily move between sections of the app.
3. Standardized Colors and Fonts: The app employs a uniform color scheme and font styles across pages to ensure readability and visual coherence, catering to users with visual impairments and those who benefit from predictable visual patterns.
4. Predictable Interactions: Buttons, maps, and interactive elements are designed to behave consistently throughout the app, providing a predictable interaction model for users.

Conclusion:

The project effectively addresses key usability and accessibility concerns by implementing comprehensive storyboards and low-fidelity prototypes. Through the use of clearly defined user stories and acceptance criteria, the project ensures that the app meets the needs of diverse users, including those with privacy concerns, accessibility requirements, and ease of use preferences. The application integrates Norman’s usability principles to enhance user experience, such as consistent design and intuitive navigation.

By adhering to WCAG guidelines, including features like language translation, speech-to-text functionality, and high-contrast modes, the app becomes more inclusive and accessible. The consistent design across pages further improves usability by reducing cognitive load and making navigation predictable, resulting in a mobile app that is both user-friendly and inclusive, thereby contributing effectively to community engagement and support.

Appendix:

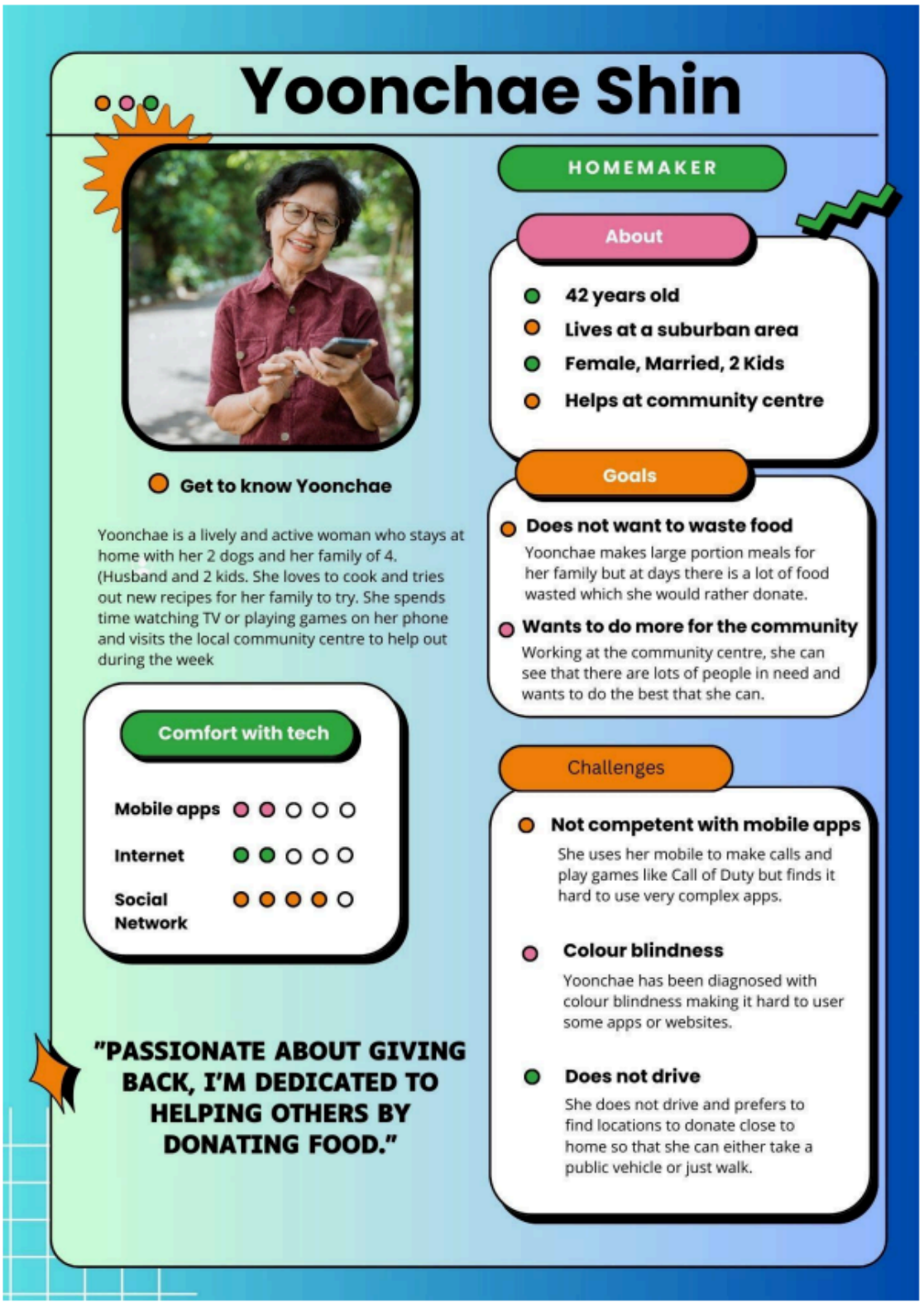
Personas:

Persona 1:

User Story:

"As Isabel Mercado, I want to find safe, city-based waste drop-off points without sharing my personal information so that I can contribute to the community without compromising my privacy."

Persona 2:



User Story:

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