



User Study Report

Team S.M.E.A



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Executive Summary

My project team conducted a user study report that will allow us to consider solutions for special needs one might need that are not taken into account. Through the personas and user study participants, we aim to create the most effective solutions for their needs so that we could have a wider range of users that could benefit from our software. Down below we listed the results of our survey with the notes we took. To begin our report, we went back and looked at the personas we originally assigned ourselves in our proposal document. We included a description of the personas, And wrote assumptions, needs, abilities, and accessibility each persona would need. We did this so we better understand what is expected of us as a group to incorporate into our software. In addition, my teammates and I went around and asked some friends that require special needs to help us figure out how we can modify the website so they can have a better user experience. In the User Study Participants, we listed the name of the people we interviewed and their special needs that needed to be taken into account. After the interview was over, we listed our findings in the user



study findings sections. We also listed our observations notes we took throughout the interview in the appendix below. Afterwards, we met as a group to discuss our findings. With a better understanding of each participant, we discussed how we will incorporate a design move in our software to accommodate for these participants/personas. This user study helped my team and I better understand those who need special accommodations and in exchange will help us reach a wider range of users in the future.

Personas

Emily - Person with Limited Dexterity:

Assumptions: Emily navigates the website using a tablet device with touch interaction.

Needs: Requires an intuitive and easy-to-navigate interface that supports touch gestures.

Abilities: Limited dexterity may impact precise touch interactions.

Accessibility Needs: Touch-friendly interface with large, easily clickable elements for smooth navigation.

Maria - Person with Bilingual Family:

Assumptions: Maria wants to translate the website for herself and her bilingual family.

Needs: Access to website content in multiple languages to cater to her family's linguistic diversity.

Abilities: Familiarity with language translation tools and technology.

Accessibility Needs: Multilingual support for website content to facilitate seamless communication within the family.

Carol - Person with Limited Eyesight and Tremor:

Assumptions: Carol has limited eyesight and experiences tremors, affecting her ability to interact with the website.

Needs: Requires clear and easily readable text, as well as large clickable elements to accommodate tremors.

Abilities: May use assistive technologies or screen readers for navigation.

Accessibility Needs: Enlarged text options and large, easily clickable buttons and links for improved usability.

Jacob - Person who is Blind:

Assumptions: Jacob relies on assistive technologies to access and navigate websites due to his blindness.

Needs: Access to website content through text-to-audio readers for seamless navigation.



Abilities: Proficient in using assistive technologies such as screen readers.

Accessibility Needs: Compatibility with screen readers and adherence to web accessibility standards for comprehensive auditory navigation.

User Study Participants

Participant Name (May be Changed for Privacy)	Persona and Accessibility Needs	Responsible Team Member
Dennis Strickland	Vision accessibility (poor vision) - needs a way to easily access and navigate the website with poor eyesight	Nathan Tran
Camila Torres	Linguistic accessibility - needs to be able to access a Spanish-language version of the website to accommodate limited proficiency in English.	Kyle Palermo
Gabriel Federico	Difficulty interacting with web content due to mobility issues - requires zoom or enlargement	Alex Beamer
Scott Mayweather	Find complex designs or navigations challenging and distracting- needs a combination of text to speech and text enlarger for easier navigation.	Sandeep Mishra
Alice Robbins	Vision accessibility (poor vision) - should be able to read all text on screen or large images for easier viewing	Marvin Fung
Andrew Mao	Color Blindness - Have color blindness color schemes so they can see properly	Jose Ortiz

User Study Findings

Include your observations and interview notes as an appendix. Synthesize these into a series of findings. Look for prevailing themes or discovered blindspots. Do not talk about design moves in response, you will discuss those in the next section.

- I was surprised to see that a user with limited English proficiency was able to navigate through several functions of the website, such as most of the directory and understanding



the layout of the page. This suggests that aspects of the website's design intuitively support interaction, even without linguistic comprehension.

- Despite some success, the heavy reliance on English for instructions, item descriptions, and navigation significantly hinders the ability of non-English speakers to use the website comfortably and effectively.
- Symbols, such as the x-button, were understood intuitively, and the user suggested that pictures or symbols may be easier for them to understand, indicating that visual cues may be very helpful for accommodating non-English speakers.
- Some users knew to use the zoom in feature in case they were unable to read the text on the screen. In addition, this leads to evident issues with our site's responsiveness being noticed with weird results when zooming in the site.
- Some user advice was not beneficial for design choices as they are not aware of what a POS system is or about the web design.
- After conducting the survey, I was amazed to see the difference colorblindness versus normal sight has on a user impact, user struggled to tell certain buttons apart thinking it was the same button due to the color
- In using our website, it was seen that for people with vision impairment, it became difficult to navigate the site as the text on our implemented navigation methods can be hard to pick out and use. This suggests that our current functionality lacks a way for those with vision impairment to easily pick out text and use the navigation features and needs to be addressed in some way.

Proposed Design Moves

High-level Design Move	Detailed Description	Justification
Implement a text to audio feature using an API	<p>As a popular fast food staff, We need a simple interactable interface that can address people with poor sight. A simple text to audio feature can address this.</p> <p>Acceptance Criteria:</p> <ul style="list-style-type: none">-Users can select specific portions of text they wish to have read aloud for or have another option to play audio for the entire website-Configure an API for text to	<p>As seen in our user study observations and interview notes, our user that had poor eyesight had issues navigating between and on pages as there was a lack of text to audio or screen reader functionality on some of our pages which created difficulty in using the website. In order to account for this, we plan to implement a text to audio feature using an API that would allow users with similar accessibility needs to be able to read aloud audio on the website which should allow for</p>



	audio	greater accessibility
Implementing a text enlarger	<p>As a popular fast food staff, We need a simple interactable interface that can address people with poor eyesight. This can be done with the use of a text enlarger that has a clear button for it.</p> <p>Acceptance Criteria:</p> <ul style="list-style-type: none">-The button for text enlargement is easily accessible and visible on all main pages-The text size adjustment affects all text content on the webpage, including headers and paragraphs and excluding images-Implement for all pages	<p>As we have seen from the people in the user studies, we have users who either have poor eyesight or have trouble concentrating on the actual contents of the pages. When incorporating a text enlarger, it alleviates those issues. For example with Alice, poor eyesight can simply be fixed with a text enlarger, while Scott's issues can possibly be mitigated through seeing bigger text and thus being able to navigate through different pages better.</p>
Implement other language options	<p>As a non-English speaking customer, I need to have access to the website in other languages so that I can use my native language to understand how to navigate and use the website.</p> <p>Acceptance criteria:</p> <ul style="list-style-type: none">- An input, such as a dropdown button, should be available on all pages and easily recognizable as a language input.- The input should change the language of all text on the page and should persist between pages. This includes headers, button labels, item names, and any other text.	<p>The non-English speaking user showed difficulty understanding certain website functions or recognizing what certain menu items were, specifically because their labels were written with English words that the user did not recognize. By translating the words on a page, any functionality that currently relies on a text label or description will be equally usable to users who are not proficient in English as they are to English-speaking users.</p>



Implement pictures for menu items	<p>As a customer with poor vision, I need large images for the menu items so that I have visual understanding what I am buying and doesn't require reading text that may be difficult to read</p> <p>Acceptance criteria:</p> <ul style="list-style-type: none">- Image for all menu items on customer page that can be pressed to add the item to shopping cart/order- The images should all be consistent in size- The colors of the image are visible compared to the background color- The images should be of the menu item and there shouldn't be any repeats of images as menu items are unique	<p>From our user study, Alice with poor vision explicitly mentioned that they liked the websites with images when they buy things. It was easier on their eyes than trying to focus when reading text on the screen. Further, Camila suggested that visual aids would help her and other non-English speakers understand what different menu items were or to understand other website content. In addition, what Camila mentioned appears to be true across many websites that one can shop for items to try to include the image of the item.</p>
API Integration for Color Analysis	<p>As a man with colorblindness, I need to be able to have an option that fits my colorblindness so I can see more clearly what the interface displays</p> <p>Acceptance Criteria:</p> <ul style="list-style-type: none">-Design colorblind elements-Integrate API to help with color analysis-The integration of the color analysis API successfully identifies and addresses	<p>Colorblindness is a common disability that needs to be taken into consideration. After living with my roommate of 2 years, I've noticed the difference it makes when he has the option to choose a color palette that fits his needs. If we take this into consideration, we would be able to hit a wider range of users. Not only that, but they would be pleased with the function.</p>



	potential color contrast issues or visibility concerns throughout the website	
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Appendix 1: User Study Observations and Interview Notes

Participant Name	Observations	Interview Notes
Dennis Strickland	<ul style="list-style-type: none">- Had issues using the website as multiple pages lack the implementation for text to audio to account for accessibility- Struggled with navigating between pages	<ul style="list-style-type: none">- When asked to rate whether it was intuitive to navigate between our pages, the interviewee responded with a 2 out of 5- When asked to rate whether it was easy to do tasks on the pages themselves, the interviewee responded with a 2 out of 3- In response to open ended questions, the interviewee mainly suggested ways to improve on accessibility on our website which included making sure to add text to audio on all of our pages and possibly implementing a screen reader
Gabriel Federico	<ul style="list-style-type: none">- Logout button on Cashier page doesn't work and requires two tabs to pass- Customer page buttons grow in height but not significantly in width, makes them difficult to click- Page content fails to center properly when zoomed in	<p>Questioning was open ended.</p> <ul style="list-style-type: none">- Noticed that navbars behave well under zoom- Said that navigation was consistent, but some buttons didn't work- Commented that the "place order" button takes up a large portion of the page when zoomed in
Alice Robbins	<ul style="list-style-type: none">- Had difficulty reading the navbar on the Login page- Also had difficult reading the text on the customer page- They zoomed in the page after trying to use it for a bit to be able to view- They noticed the page got weird when very zoomed in and mentioned it- The logout page cashier	<p>For the open ended question</p> <ul style="list-style-type: none">- The things on the page get scaled correctly along with having images on the page without having to zoom in to really read the text- They weren't sure "maybe just a cleaner or modern design" and "they don't really know web design" <p>For the Likebert scale questions</p>



	<p>page doesn't work and had to press back button to go back to home page when using the application</p>	<ul style="list-style-type: none">- The navigation between pages is easy to understand and use, which they gave a 3 since they didn't like the login page navigation- I knew how to use the cashier page to add a menu item to an order and checkout, which they gave a 5- I knew what page I was on at all times, which they gave a 5- I was able to change between the categories on the customer page, which they gave a 5- The customer page UI made sense, including the categories, menu items, and pop-up, which they gave a 2. They said it wasn't evident what the pop-up was for <p>Additional Notes:</p> <ul style="list-style-type: none">- They mentioned they are used to applications having images of the items they are buying and suggested that we should have images as well- They also noted that images are easier for them to see compared to text that we only have on our website
Camila Torres	<ul style="list-style-type: none">- Was able to recognize or infer enough words to use certain functions, such as using the directory to go to the manager, customer, and menu board pages, but could not recognize other words such as the directory's cashier page.- Was able to navigate the cashier page's categories, recognize many items, and add them, and she could infer what the current order	<ul style="list-style-type: none">- When asked to rate the ease of understanding website content on a scale from 1 to 5, the interviewee gave a 3, indicating that it was possible at times but there was moderate difficulty due to the language barrier- When asked to rate the ease of performing tasks, the interviewee responded with a 2, reflecting the incompleteness of the website and the challenge of interacting with limited English proficiency.



	<ul style="list-style-type: none">- table was showing.- Did not recognize certain menu items.- Did not immediately know how to submit the order on the cashier page.- Knew how to remove items, so the use of symbols may be useful for accommodating language barriers.	<ul style="list-style-type: none">- In response to open-ended questions, the interviewee suggested a button to switch the website's language to Spanish, and they also suggested images or visual aids to improve understanding.- The interviewee also mentioned that simple words, rather than technical, are easier for non-native speakers.
Scott Mayweather	<ul style="list-style-type: none">- Couldn't find all the other sections login page until it was pointed to it- Couldn't navigate back to the login section or any other sections until it was pointed to it- Had trouble concentrating on the actual contents of the manager and menu page. This is due to the lack of text to audio addressing this.	<ul style="list-style-type: none">- When asked if there are parts of the website you avoid using, he noted the table of menu items and options seem overwhelming so he just doesn't pay attention to it.- When asked to rate the usability out of 5, he rated it a 3 as it is still easy to use but going back to the login section was the hardest. Note when we add more stuff like graphs, I assume this rating will go down.- Finally when asked about an open ended section of using apps or websites in general, he stated that he usually tries to find the help button first as there are alot of options there. He also says sometimes he just clicks on things until he ends up finding what he wants and there are times he gets frustrated and just closes it.
Andrew Mao	<ul style="list-style-type: none">- Had a hard time differentiating between colors- Couldn't tell the difference between red and green- Struggled to read certain text with the color	<ul style="list-style-type: none">-When asked about what colors where being shown, user struggled to differentiate-When asked to compare colors, user could not do so and said the colors looked messy-When asked to read text



	background	behind a certain colored background, struggled to read
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