User Study Report

Team 3b

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Executive Summary

Our product aims to terminate the gap between managers, food, and consumers. Not only will our software provide for an effective and accessible food ordering system, but it will serve as the one and only application a food establishment would need in order to operate. Although we have previously aimed to make this software as accessible as possible to all users, our user study illuminated a few shortcomings. For one, it became clear that much of our functionality did not "speak for itself", meaning functionality occasionally had to be learned through failure rather than intuitively communicated. As an obvious example, it was clearly not accessible to non-english speakers. Beyond that, the navigation was unclear, and our software was difficult to use for individuals with visual impairments. We will take these experiences into consideration as we continue to develop our software.

Personas

Maria

Maria is a community health worker who plays a vital role in bridging healthcare information for her community. She comes from a bilingual Spanish-English immigrant family, and while she speaks both languages, she often relies on translation tools to fully comprehend English content online. Her mobile phone serves as her primary computer, making her familiar with mobile interfaces. Maria requires clear, straightforward information, especially since nuanced or complex language can become confusing when translated. For her, user-friendly resources and reliable translations are essential to quickly access, understand, and share vital health information with those she serves.

Jacob

Jacob is a blind paralegal with aspirations of attending law school. Having been blind since birth, Jacob is a digital native who is highly skilled with assistive technology, utilizing screen readers and keyboard shortcuts to navigate his computer with ease. As someone who relies on technology for nearly every aspect of his work, he needs platforms that are screen-reader accessible, efficiently labeled, and compatible with keyboard navigation. His goal is to pursue law school, making him particularly appreciative of accessible tools that support his research and communication. Jacob values technology that enables independence and keeps his workflow as efficient as possible.

Carol

Carol is a grandmother who has gradually learned to use technology with help from her grandkids. She faces the challenges of macular degeneration, which affects her reading ability, and a mild tremor that impacts her hand precision. Carol has mastered basic adjustments, such as enlarging text in her browser, but more intricate interfaces can be overwhelming. She benefits from simple, easy-to-navigate designs, larger fonts, and voice-activated commands, which help accommodate her vision and motor issues. These features empower Carol to stay connected with family, manage daily tasks, and maintain her independence as her physical needs change.

Saurav

Saurav is a college student attending Penn State University. He is smart, and no stranger to software; however, he has a form of colorblindness that makes it difficult for him to distinguish words and icons for some color palettes. Although Saurav is tech-savvy and would, on paper, be considered a low-maintenance client, his color blindness may be a inhibiting factor to him using this software unless there are distinct color differences in important places.

Cezar

Cezar is a middle-aged man who is no stranger to technology. He is actually a software engineer based out of Mexico City, and mainly works on the backend. However, he cannot speak English whatsoever. Although our software should be fairly intuitive, Cezar will likely struggle with sections that require a lot of knowledge of the English language.

User Study Participants

Participant Name (May be Changed for Privacy)	**Persona and Accessibility Needs**	**Responsible Team Member**
Participant 1	English second language (ESL), College student, Able bodied	Nathan Tserng
Participant 2	Poor vision	Christopher Kim
Participant 3	Motor Impairments	Joshua Abraham
Participant 4	Color blind	Robert Longo
Participant 5	Does not speak english	Roshan Sreedhar

User Study Findings

Nathan Tserng - Participant 1

One thing I observed was that it was a little harder for the participant to read the titles of the food because they don't speak as good English. However, they were still able to order what they wanted because of the pictures we had included. I also found that it was hard for my participant to navigate back to the landing page because there was a lack of clear navigation buttons. This has been a prevailing finding in all of our user studies so far. We have also found that the login functionality does not quite work yet, so the user can not login to their account.

Christopher Kim - Participant 2

I observed that participant 2 had trouble reading the text on the screen at times. Additionally, since there were no options to zoom in he had trouble reading the text when it was on a phone screen, which was even worse on the computer since the screen was bigger but the text was just as small. He also kept talking about how the font size and style made it difficult to understand what he was reading. He also could not really see what each menu item looked like based on the small pictures provided.

Joshua Abraham - Participant 3

I observed that Participant 3, who experiences an essential tremor, faced difficulties with fine motor tasks on our platform. The tremor made it challenging for him to select smaller buttons, often resulting in missed taps and unintended actions. He expressed frustration with the lack of larger buttons and touch targets, which increased his effort to navigate the interface effectively. Additionally, he noted that an option for voice-activated commands or alternative input methods

would make it easier to interact with the platform independently, allowing him to use the application with greater confidence and ease.

Robert Longo - Participant 4
While observing participant 4, I noticed that he was mostly able to navigate through the pages and use our software efficiently. However, because he has protanopia, it is hard for him to read the white text against the red background sometimes. That being said, most other colorblind individuals were able to navigate effectively because our theme is mostly black/white with some red accents… colors do not collide too much. That being said, I think that it could be useful to integrate a high-contrast mode, or make it accessible to change our background color in order to accommodate color blind individuals.

Roshan Sreedhar - Participant 5
Given our current design, I was surprised that participant 5 was able to do such a good job at navigating through the pages. That being said, it was difficult for participant 5 to figure out how to navigate through and order items without messing up a couple of times. I definitely think that having a universal icon system could be beneficial for our app so that anyone could navigate and use our software despite a language barrier.

Proposed Design Moves

High-level Design Move	Detailed Description	Justification
Add better page navigation	Adding clear back buttons, clear home buttons, and clear next buttons that don't only have words on them will help someone who does not speak English still be able to navigate around our interface.	Navigation is an extremely important aspect of using the interface. If the user can't navigate around the different pages, they will not be able to order and use the interface in the way it is supposed to be used.
Add accessibility functionality to change the text size	Provide the option to the users to be able to increase the font size or change the font style so that it will be easier to read and easier on the eyes.	It will help those with poorer vision to be able to enlarge the text so that the site will be easier to read. Overall, it gives more visibility to the information on the screen.
Add larger buttons and touch targets	Provide an option to enlarge buttons and key touch targets	Larger buttons and well-spaced touch targets will improve usability

	throughout the interface. This will make it easier for users with essential tremors or other motor impairments to tap accurately without accidental selections. Additionally, ensuring adequate spacing between buttons can reduce the likelihood of misclicks.	for users with motor impairments, such as essential tremor, who struggle with fine motor control. This design move promotes accessibility by allowing these users to interact with the platform more confidently and efficiently, enhancing their overall experience.
Add a high contrast mode	Add a button or menu that will allow users to change the red accent color to another color that makes the page more accessible.	Accommodating colorblindness is something that is often overlooked, although it affects as much as 1 in 12 men. Providing this simple feature can allow us to stand out and provide for a more accommodating experience at this establishment.
Add icons for everything	Add distinct, useful icons that effectively communicate functionality. This should mainly apply to buttons and navigation sections.	Adding icons that can be universally understood will not only benefit individuals who do not speak English, but it will also help children and visually-impaired individuals use our software.

Appendix 1: User Study Observations and Interview Notes

Participant Name	**Observations**	**Interview Notes**
Participant 1	User is slow at navigating because there is no clear navigation, user ordering based on pictures, user can not login	It was hard for him to understand the English text, but the pictures helped him order. They thought our website was visually appealing and looked professional.
Participant 2	He struggled to read the text on the site mainly because the font was too small. He continued to complain that it was hard to read and could not make out what the images were portraying because they were too small.	Participate 2 has poor vision, which led to him struggling to read what was on the screen. He was able to use the built in zoom functions for the browser he used but wished there was a built in function in the website.
Participant 3	He struggled with selecting small	Participant 3 expressed frustration with

	buttons due to his essential tremor, often missing his intended targets. This led to repeated attempts to select options, which slowed down his navigation and caused some frustration. He also experienced difficulty scrolling smoothly, as the tremor sometimes triggered accidental taps on other elements on the page.	the small buttons and touch targets, mentioning that larger buttons would make the platform easier to use. He appreciated the platform's overall design but noted that an option for voice commands or alternative input methods would significantly improve his experience. He emphasized that these changes would help him interact with the platform independently, as his tremor sometimes makes precise actions challenging.
Participant 4	Participant 4 did well for the most part, but especially struggled reading text and navigating items when it was specifically gray or black text against a red backdrop.	Participant 4 was able to navigate through the web pages, although it did take him longer to read certain sections and effectively use the app than other users. This is likely due to his colorblindness, which makes it difficult to distinguish icons and text against certain background colors. That being said, he still did well.
Participant 5	He initially struggled navigating to the correct section, and spent a couple of minutes fumbling around and figuring out how the app worked. However, he ultimately was able to navigate and use the app based off memory.	Participant 5 does not speak english, and initially struggled to navigate through the app. However, after experimenting enough, he was able to use icons and our design to navigate to the order section and succeeded in ordering his meal.