



User Study Report

BOGO SORT CONNOISSEURS



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Executive Summary

Our Project 3 goal is to improve Project 2's Rev's Grill point-of-sale system interface to meet more accessibility needs and make the system more user-friendly. Since there is a wide range of customers with different accessibility needs, we want to make the ordering process as easy as possible for everyone to provide a positive ordering experience which would ultimately lead to an increase in sales. We also plan to add more features to help the manager and cashiers meet their needs such as the usage of Google OAuth Login Page and a search bar for menu items.

This document outlines as follows:

- Personas - We describe the personas we came up with for our proposal based on our further understanding of our end user population. Here, we describe their accessibility needs and solutions that would meet those needs.
- User Study Participants - We describe each person who participated in the user study with the respective interviewers. We included the participant's name (may be changed for privacy), persona & accessibility needs, and responsible team member.
- User Study Findings - We present what we have found out about potential users on the A&M campus, which ultimately helped us come up with accessibility solutions for each of the interview participants.



- Proposed Design Moves - We explain all the accessibility features that would improve each user's experience with justifications. This allows us to find what that user exactly needs that would make an overall positive user experience.

Personas

Based on our initial discussions over our user stories as well as the peer review we performed with other groups during our lab, we decided that a lot of the concerns we raised were certainly important to consider. However, we thought it would be useful to broaden some of our personas as a lot of the problems we addressed for certain people were extreme concerns. For example, we initially proposed a story of a user who did not speak English at all trying to interact with the cashiers or interpret the menu. However, we agreed that a lot of people with a working knowledge of English still might not be familiar with certain obscure names of menu items especially if they're not versed with the type of food Rev's serves. By generalizing our user persona a bit further to accommodate this, we were able to create a much more realistic concern which we could solve with more helpful tools and insights in addition to simple translation.

User Study Participants

Participant Name (May be Changed for Privacy)	Persona and Accessibility Needs	Responsible Team Member
James John Jones Jr III	A manager of Harvest Coffee who is very ambitious and focused, so he is always looking for ways to improve his store. He wants to analyze sales trends to figure out the best-selling products and create meals that would be appealing to customers. This user's accessibility need is to have easy navigation with large text.	Andrew
Romaner	The cashier is very unfamiliar with the menu items and the point-of-sale system. It is very difficult for the cashier to multitask: listening to customer's orders and having to look for a menu item.	Warren



	This user's accessibility need is to have easy and fast navigation without redundant pages.	
Carol	<p>Carol, a customer who is experiencing macular degeneration which affects her reading ability. She knows how to enlarge text in her browser.</p> <p>This user's accessibility need is to have large images and text.</p>	Surya
Betelgeuse	<p>Betelgeuse, a customer with low vision due to glaucoma. He uses screen magnifiers and contrast adjustment to read better when he works his engineering job.</p> <p>This user's accessibility needs to have high contrast.</p>	Sua
Maria	<p>Maria, an international student who uses translation and needs clearly written information. Her immigrant family is Spanish/English bilingual, so she is more familiar with Spanish than English. She often finds herself having trouble ordering at a store and understanding cashiers.</p> <p>This user's accessibility needs to have translation.</p>	Shweta

User Study Findings

We found that there is quite a diverse set of accessibility requirements that our platform would need to meet. We were able to interview a lot of people who more or less covered a lot of the concerns we initially foresaw when designing our user stories.

For example, we weren't expecting that there would be a lot of people at A&M who would benefit much from translation at REVs Grill, but we met Maria, an international student, who explained that



there are a lot of people like her who often struggle to understand obscure menu item names, and it's difficult to discern much more from the cashiers due to the language barrier. This told us that adding translation features to the platform would be a fundamental step in making it much more accessible.

Additionally, we interviewed people like Carol and Betelgeuse who require visual accessibility features due to medical conditions relating to their vision. Based on these two interviews, we decided that incorporating contrast adjustments, font magnification, and other accessibility elements into our UI design and frontend platform would be instrumental in ensuring everyone would have a roughly equitable experience interacting with the platform.

In addition to polling our potential customer base, we also interviewed 2 people with more managerial and cashier experience – James and Romaner. They both gave us a broader perspective on improvements we should focus on for the cashier and manager pages. They told us that it's often difficult to objectively gauge things like seasonal trends and order frequency by day of the week as their inventory systems are not that easy to work with and they're often inundated with other responsibilities. This told us that we should pay extra attention to the leverageable insights of our manager page with easily interpretable graphs and charts to make this kind of analysis much less arduous to perform.

Proposed Design Moves

High-level Design Move	Detailed Description	Justification
James John Jones Jr III	A solution for James would be the implementation of an analytics page that tracks most bought-together items and displays them in the form of a chart or graph.	This is the simplest solution to this task, as having an intuitive analytics page would help James improve his store by figuring out the best-selling products
Romaner	The initial proposed solution was to integrate an audio listener to automatically allow the customer to order based on specific voice cues similar to many voice assistants. However, the main issue with that is that it will be difficult to integrate considering the surrounding noise and we didn't want to	As stated in the description, not only does a voice assistant take more time and resources to construct for only a marginal improvement in experience, but it also discourages more engaging and friendly conversations between the customer and cashier. The lack of interaction is not only harmful to a customer's experience, but also



	discourage interaction between the customer and cashier. As such, the new proposed solution was to allow for popular combo meals as a singular order, so that the cashier doesn't have to select each item individually. Additionally, to remove cognitive load, images will be removed which allows for the cashier to more quickly scan the rest of the items	leads to less social experience for the cashier which is a must in any service based occupation. As such, the simpler solution also proved to be the least riskiest since it will be more beginner friendly to the new cashier. Additionally, this design change will also evolve with the cashier as they become faster at their task.
Carol	The proposed solution is allowing for the website to scale up depending on the user's preferences.	Since Carol's central vision is not as great, scaling up the website is a must to be able to properly see and utilize the functions of the website. Since Carol already knows how to enlarge text in her browser, it's best for the proposed design to follow best practices in those regards since we want Carol to intuitively know how to scale up the website.
Betelgeuse	A solution for Betelgeuse would be the ability to switch to dark mode.	Since he has glaucoma, his ability to distinguish letters from the background is low, so having a dark mode that provides high contrast between letters and the background would meet his accessibility needs.
Maria	A solution for Maria is having a translation feature. This can be implemented by ensuring the feature on the navigation bar is implemented. This can be easily accessible and implemented with the use of Google Translate.	As someone who is not familiar and comfortable with the English language, having a translation feature will be beneficial. This will allow her and other customers to navigate the site freely at the comfort of the language they understand.



Appendix 1: User Study Observations and Interview Notes

Questions asked:

1. On a scale of 1 to 10, how would you rate how easy it is to log in?
2. On a scale of 1 to 10, how would you rate how easy it is order from the order page?
3. What is the first thing you notice when you enter the order page
4. How easily were you able to identify the help button on the order page
5. How noticeable was the latency of each page (did it take noticeably long)?
6. Did you experience any confusion on what any of the buttons or links navigated to?
7. How would you improve our current system?
8. The order screen was easy to use
9. The call for help button on the order screen was easily identifiable
10. The text on the menu page was easily readable
11. The login page was easy to use
12. The accessibility buttons on the navigation bar was understandable

Participant Name	Observations	Interview Notes
James John Jones Jr	<p>Thought that the login page and ease of ordering were alright, but nothing super impressive.</p> <p>Overall James didn't seem too impressed. James seemed to think that the website was decently functional.</p> <p>Had a lot of great feedback on what specific analytics would be nice to view and was pretty critical of the navigation difficulties he experienced.</p>	<ol style="list-style-type: none">1. Rate: 52. Rate: 53. The images stood out and were noticeable.4. Help button was easy to notice.5. It took long and was very noticeable.6. The buttons were confusing and was hard to navigate to manager information.7. Would improve by more menu information on site.8. Somewhat agree9. Somewhat agree10. Do not agree11. Agree12. Agree
Romaner	<p>Design and layout was pretty decent. It was easy to find where everything was after a few minutes of practice and exploration. Saw that there were some things that</p>	<ol style="list-style-type: none">1. 62. 73. The order page was easy to navigate4. It was easily identifiable



	had to be clicked through an extensive amount of times	<ol style="list-style-type: none">5. It was noticeable, especially for the menu page6. There was some confusion with the login page7. Add faster navigation, get to a page with less clicking8. Agree9. Agree10. Agree11. Agree12. Disagree
Carol	Design and layout were somewhat inconsistent between pages, and small font sizes and lack of contrast for certain elements made it hard to navigate and immediately understand how to interact with design elements and features.	<ol style="list-style-type: none">1. 72. 53. Inconsistent color schemes create contrast issues that make it harder to discern elements4. Does not stick out because it has less contrast than other elements relative to background5. Not very noticeable6. Login page only goes to manager login – unclear7. More consistent UI elements and better navigation to understand where to go8. Somewhat Agree - UI design was hard to understand9. Somewhat Agree - different color than other elements but lower contrast10. Somewhat Disagree - Too small11. Somewhat Agree12. Agree
Betelgeuse	Design and layout were not consistent and were not appealing. Liked the clear categories but wish the navigation of the site was similar. Wanted more features to stand out similar to help button. More color would be appealing and easier to navigate.	<ol style="list-style-type: none">1. 42. 53. The clear categories outlined in the page4. It wasn't the easiest thing to notice but once pointed out was good5. It was pretty noticeable for



		<p>some pages but was nearly instant for others</p> <ol style="list-style-type: none">6. There was some confusion in understanding exactly where everything went7. Add more accessibility features, make it more obvious on how to navigate and login.8. Somewhat agree, it could be more contrasted to make it more accessible9. Agree10. Disagree, dark mode has not been implemented yet, so the contrast between the text and the background was low11. Somewhat agree12. Agree
Maria	Design and images were beneficial in understanding what each category consists of. Wants translation and was wanting that feature to be implemented. Hard to understand the website navigation and want more features of the nav bar to work. Did not understand the home page.	<ol style="list-style-type: none">1. 72. 73. The images were useful in understanding what the item is.4. It was easily identifiable5. It was noticeable and seemed to be a good idea6. There was some confusion with text and not understanding it.7. Add translation so it is easier to use for people who do not know English.8. Agree, images helped9. Agree, the color emphasized it10. Disagree, would want larger text and translated text11. Disagree, was unsure how to navigate and for who it was for12. Agree