



User Study Report

331-902 Team 3 or Group 9

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Executive Summary

Our project is a web-based point of sale system for Rev's Restaurant, located in the Memorial Student Center at Texas A&M University in College Station. We plan designing and developing the application with accessibility and user friendliness in mind, so that we enable users with disabilities to be able to use the application with ease. To that end, we have three "personas" that we would like to also cater to, along with our regular student base. These "personas" represent people with particular needs that our application must meet, to provide them with an equitable and equivalent experience.

Our three personas include Maria, Carol, and Trevor. Maria prefers a website available in multiple languages (English and Spanish), and websites to be usable in mobile devices, which means a translation feature and mobile rendering of the website. Carol has macular degeneration, which means that she needs to be able to see components easier regardless of being zoomed in. Trevor is autistic and needs a simpler and more basic user interface to be able to order items effectively.

To meet our goal of making an accessible and user-friendly application, we have interviewed multiple people with different backgrounds and disabilities, to gain a better understanding of what we can do better with our existing MVP, and to hear their raw, unfiltered feedback. We plan to use this feedback to revise our existing application, to make it more accessible and a better product overall.

Personas

Persona 1 - Maria:

Looking at her canvas description, Maria needs readable, fluent text to easily communicate with her family. She lives with her family who are immigrants that are English and Spanish bilingual. One



assumption is that many of her family, especially the older generations are fluent or even literate in English so Spanish may be the most comfortable way to communicate with them. Based on this, we need translation support for our product. It should allow Maria to easily and efficiently swap between whatever language suits her family members best when ordering. This can be extended to be mobile-friendly as Maria is a mobile user and we can assume some of her family is as well. Giving the extension should make Maria not have to act as a translator as often.

Persona 2 - Carol:

The canvas lists Carol as a person with macular degeneration. The description states she is not good with technology but has learned how to enlarge text on her phone. We can assume she is not technologically advanced but can still navigate to the options that can help her. Since macular degeneration leads to reduced field of vision and blurry sight, we will make sure to have the customer order screens at eye level and have the option for larger icons to be in an easy to reach place. For when she orders at the cashier, we will assume she can not read a menu from far away, so the cashier will have the option to show the menu on their own POS system so Carol can have easy access to it.

Persona 3 - Trevor:

Based on the canvas, we know that Trevor is autistic with poor social and reading skills. We can make the assumption that Trevor could be either a customer, cashier or manager so we must tailor each position to be as accessible as possible to him. For the customer side, we will make the menu board, and order screen be readable with a big, soft, plain font that is supported with a color scheme that is pleasing to the eye. On the cashier side, we will make all items have simple, easy to read descriptions so that Trevor can communicate whatever he needs to the customer. The controls will also be easy to use and will give him feedback on every action so his interactions with customers can be made easier. On the manager's side, the data will be simplistic and descriptive, not involving hefty text segments but opting for visualization that can communicate information clearly.

User Study Participants

| Participant Name (May be Changed for Privacy) | Persona and Accessibility Needs | Responsible Team Member |
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| Trenton Ely | A mix of personas; Trenton is partially colorblind and prefers high contrast and larger text. Similar to how Carol from the persona requires content that is clear to read, and Trevor needs a playful but professional color scheme, along with to the point language. | Riley Wenckens |
| Samual Mendez | Samual is an average person with no | Diego Martinez |



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| | outstanding accessibility needs. However, they suffer from some high forms of ADHD. So being able to focus on any given thing can prove challenging for him. That being said, he also has experience in the restaurant industry and knows how to use POS systems and has high expectations lol. | |
| Caleb Lee | Caleb is a person with diagnosed chronic myopia, who prefers to use their mobile devices for viewing and engaging with dynamically rendered content. Sometimes, he feels his prescription varies throughout the day, but his ability to read things through his phone closely, remains consistent. He has a harder time seeing in the night, in low brightness, and has mild headaches when squinting to read small-far away items. He also is an avid user of POS systems as he relies on restaurants throughout campus for his daily nourishment. | Rushil Jayant |
| Zack Zhu | Zack is currently a senior engineering student at UT who cares about the simplicity for the products and projects. He can't understand and properly use a product without specific instructions when he needs it, although he is about to graduate from college. He has slight symptoms of ADHD. | Elvis Chen |
| Jonathan Moore | Jonathan is a typical user. He has experience in web development, making him a good candidate to provide feedback regarding general design choices. Additionally, he will have unique opinions on what functionality a manager/customer/cashier will want in an application. | Laith Bohsali |
| Zane Meikle | Zane is a typical user. Like Jonathan, Zane has experience in web development. He will have unique opinions on what functionality a manager/customer/cashier will want in an application. Since he has | Rahul Rajendran |



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| | created a point-of-sale system in the past, he can provide insights into what he thinks will be beneficial for our product. | |
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User Study Findings

Though our team was relatively happy with the user study findings, many prevailing themes and discovered blindspots appeared. One of the most prevailing themes our interviewees highlighted is the inconsistent navigation to the customer order screen. Currently, the button on the welcome screen along with the button on the manager screen each route to the menu board. When discussing the menu board, most interviewees had trouble reading the small font within the icons and displayed discomfort with the contrast. Another prevailing theme is features that appear implemented but present little or non-functional functionality. For example, many interviewees attempted to click the main picture in the welcome screen, the ellipses within the manager screen, and the search bar in the manager screen expecting functionality but their attempts failed. Lastly, most interviewees discussed some inconsistencies throughout pages, such as the out of place clock in and out button, and differing color styles between the welcome page and menu board.

Proposed Design Moves

| High-level Design Move | Detailed Description | Justification |
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| Add the login and sign-in buttons to the welcome screen. | Currently, the login and sign-in buttons are only available through the manager screen, which is counterintuitive. | Any type of user should be able to log in, not just a manager. |
| Change table contrast | Currently, the table within the manager screen has poor contrast between text and background color. | When Trenton was viewing the table, he had a tough time distinguishing the difference between black and gray. |
| Change wording for manager graph and bar chart. | “Sales value” should be changed to be more descriptive with respect to the graph. | Trenton expressed confusion with regard to what sales value referred to. |
| Change graph contrast. | The current graph has a navy blue background with blue lines. | These color choices make it difficult for partially colorblind people to distinguish the line in the graph from the background. |



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| Fix the background consistency between pages | The backgrounds on the pages vary in style and need to be one consistent color throughout. | This will make the user experience overall better and more pleasant. No one wants to work with inconsistent page designs. |
| Navigation logic | Upon completing more requirements of the project, some of our navigational logic seems off. We need to change where certain pages go and which page has access to certain features and so on. | This will make the website more consistent. Streamlining the user experience. This makes the user experience very explicit and clear. This is what I can definitely do. |



Appendix 1: User Study Observations and Interview Notes

| Participant Name | Observations | Interview Notes |
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| Trenton Ely, Interviewed by Riley Wenckens | Trenton appeared to find the navigation between pages and the buttons mostly responsive. When the site was initially launched, he slightly squinted at the welcome page and buttons, indicating it might be worth upscaling the size slightly. When viewing the manager page, he had difficulty differentiating colors because of the navy blue background and blue line on the graph. He was unsure what the graph and bar chart were aiming to depict because of the unclear labeling and small legend. Trenton noticed a design flaw when attempting to modify or delete an entry from the table; the ellipse options don't automatically disappear when you click elsewhere, only when clicking the ellipse again. He strongly advised to change the color of the table because of the low contrast between black and gray. | <p>1) First Impressions</p> <p>Trenton mentions the website has a clean, minimalist, and mostly intuitive design. Certain areas of the website could be improved to help his partial color blindness, along with clearer labeling and upscaling.</p> <p>2) Features expected but nonfunctional</p> <p>Clicking outside of the ellipse options didn't hide the options as expected. Base features like a menu board and customer order should be shown to the user and reveal a manager screen and clock-in screen depending on credentials. He mentioned that for the final product it wouldn't make sense to show the user the manager screen. He also expressed confusion when clicking "menu board" from the manager screen and it redirected to the welcome screen.</p> <p>3) Confusing design choices</p> <p>He noted that the login and sign in page should be shown within the welcome screen. Currently, the only way to access the sign in and login page is through the manager screen, so the logic seems flipped.</p> |
| Samual Mendez, Interviewed by Diego Martinez | Launching the welcome page, it seems that he can figure out what each button does and where it takes him. When clicking customer order he seems confused on why it pops up a different page that looks like a menu board. Similarly, regarding the | <p>1) Upon asking Samual about his experience, he told me what he liked and did not like. He said a lot about what we have not worked on. This includes the clock in / out feature, the unpopulated menu board, and</p> |



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| | <p>clock in/out he is confused about what that is meant to do. He likes the manager page as well as its ease of use. Lastly, the registration page seems to be pretty straightforward for him. How to log in and access the page.</p> | <p>how the manager page UI is unresponsive.</p> <ol style="list-style-type: none">2) Similarly, he also told me what he did like. He said a lot of the UI designs were pretty and well thought out.3) Upon telling him that we have not implemented the user order page and cashier order page, he expressed that those features would make the user experience way better. As a user, he expressed he could not say much about the manager experience and overall structure. He then expressed that if those other pages were implemented then he would be able to give more insight. |
| <p>Zack Zhu, Interviewed by Elvis Chen</p> | <p>Using the welcome page to enter the customer view. He thinks the background and style for the customer page is not consistent with the welcome page. He has trouble with understanding what each box is for in this page, and he can barely see the small text. Thus, he just randomly clicked on different parts of this page and nothing happened. He tried to go back, but couldn't find any button to do that. At the end, he used the manager page. He is surprised by how fancy it is, but also he is kind of confused while receiving so much information at the same time and not straight forward enough for him to use. He spent a lot of time trying to figure out how this page works. He found a little bug that the "menu board" and "create order" button both lead him to the same welcome page.</p> | <ol style="list-style-type: none">1). Upon the interview, Zack told me that he is really amazed by the manager page, but at the same time it's kind of inconsistent with other pages. He also thought that there is a need to have more prompts for the manager view as well.2). He also told me that for the customer view, the background or layout could be better. A larger icon for each menu item and larger text is needed. (can add a extra button to adjust these setting would be a good idea)3). Overall he told me this solution is pretty intuitive to use and he likes the manager view the most. |
| <p>Caleb Lee,</p> | <p>When starting the application, the</p> | <ol style="list-style-type: none">1) During the interview. Caleb Lee |



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| Interviewed by Rushil Jayant | <p>interview subject tried to click on the REV's logo, and noticed that it did not respond to anything. Then, he proceeded to click on each of the 4 main boxes (customer order, clock in/out, manager, register). He finds that the user layout for each subcomponent, after clicking on the boxes, is inconsistent, leading him to be confused.</p> <p>He feels that the layout is good on mobile, and renders fine, but the contrast in the components makes it hard to see, and the font sizes are not in line with what the other parts of the website are. He also was unsure on how to get out of the customer order section, and felt a back button would be helpful.</p> <p>The clock in/clock out is fine, but it doesn't look like it does much, and I was confused on what it does.</p> <p>From the manager's view, the component does not work to view other parts of the website, and he is not able to understand what the fonts mean due to contrast issues. Also again, styling is not consistent and it is confusing to navigate the website.</p> <p>The register page looks nice, but the purpose of the website is not easy to understand.</p> | <p>was impressed at the structured layout of the main page, as well as the manager's page, where he was amazed with the user interface. Although, he wished for more consistency and visual clarity in navigation in the application's components.</p> <p>2) For the menu view, he wished that the contrast between the names and the component would be much clearer. He also wanted the choices in design to make more sense, as he was confused on the brown, gray, and marble colors and background.</p> <p>3) He was particularly impressed with the manager page, but wished that the navigation would be easier between pages, and that the font layout, shape, and sizes would be changed as it would be harder to see on mobile.</p> |
| Jonathan Moore, Interviewed by Laith Bohsali | <p>1. Menu board not very readable from distance</p> <p>2. Menu board not intuitive to use.</p> <p>These changes to the menu board will be made in the second sprint.</p> | <p>Question: Was the navigation intuitive and smooth?</p> <p>Response: To a degree, naming conventions were unclear at some points.</p> <p>Question: Was the color scheme easy</p> |



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| | <p>3. Manager screen was very informative</p> | <p>to read and to look at for long periods of time? Response: Color scheme was easy on the eyes.</p> <p>Question: Was the menu board simple to look at? Response: Yes, text size could be larger so it is easier to read.</p> <p>Question: How well organized was the menu board? Response: Really well, once dynamically implemented will be good.</p> <p>Question: How easy to use was the clock in/out and register screen? Response: Very easy, no confusion when using, consistent with most websites.</p> <p>Question: How could the manager screen be made more informative? Response: Drop down to display specific tables, more information displayed, not as cramped.</p> |
| <p>Zane Meikle, Interviewed by Rahul Rajendran</p> | <p>1. Choose tabbing or scrolling menu board</p> <p>This will be implemented in the second development sprint as mentioned above.</p> <p>2. Manager display was very good</p> <p>3. Clock in/out could display who is clocked in/out.</p> <p>This has been noted as a proposed design move as well as other minor changes to the positioning of the element in the application.</p> | <p>Question: Was the navigation intuitive and smooth? Response: Pretty good, naming convention should be improved at some point.</p> <p>Question: Was the color scheme easy to read and look at for long periods of time? Response: Yes, not difficult to look at.</p> <p>Question: Was the menu board simple to look at? Response: Simple enough, background could be changed. This aligns with the design choice to make the background consistent between pages in the application.</p> |



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| | | <p>Question: How well organized was the menu board? Response: Pretty well organized, make it dynamic, implement scrolling or splitting</p> <p>Question: How easy to use was the clock in/out and register screen? Response: Pretty easy, intuitive</p> <p>Question: How could the manager screen be made more informative? Response: Very good as is, not many complaints</p> |
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