



User Study Report

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Executive Summary

Our team is developing and working on a web-focused point of sale (POS) application for Rev's Grill. Due to the various shortcomings in the current POS application, we are currently overhauling the POS to allow Rev's to boost its revenue. By constructing user interfaces that incorporate human-centered design, it'll allow an enjoyable and easy-to-use interface for customers, managers, and cashiers to speed up order placement and payment. We'll also be incorporating imperative analytics tools that will allow us to improve inventory management and sales analysis.

There will be three primary personas who will utilize the POS: the customer, cashier, and manager. Essentially, the customer will be utilizing our POS to order items their specific desired items, the cashier will take various orders for people who opt to order through the cashier, and the manager will manage the various menu items, manage the inventory of the restaurant, and utilize analytics to optimize the sales of Rev's Grill. Our POS is designed to accommodate all three of these personas and ensure that it meets their respective needs.

After constructing a minimum viable product, we've asked various user study participants to utilize our product and determine if there should be any improvements or modifications to our design. Regarding the findings, there were a few significant recurring issues, such as with the lack of feedback when adding items to the cart, inability to remove items from an order, and the search box causing issues in the layout. As a result, we've decided on various design moves to resolve the issues found in the user study report. This will include adding more functionality for ordering, resolving the bugs found in our application, and enhancing the navigatability of our website.



Personas

Customer:

An assumption we're making with the customer is that they understand how to navigate a basic website that has buttons, tabs, etc. As for the customer needs, they will need an easily accessible ordering interface, each menu item's nutritional information, and the ability to choose whatever payment method they want during checkout. As for what abilities they bring, they can help with understanding patterns, and they can provide feedback on how to improve the website. To improve the accessibility for customers, we need to make sure the pages aren't overwhelming with information. While it can save space, it can often make things more difficult to understand if they're not familiar with the layout. The website should also have pictures to make it easier to see what a menu item looks like, and it should also include alternative text. Our website also needs to be translated into any language to have a wider reach. Our website should also work on any platform rather than just a computer.

Manager:

An assumption we're making with the manager is that they won't be working with the ordering interface at all since they'll be focusing on the analytics and inventory systems in order to optimize sales. The needs of the manager are more towards maintaining the inventory of all the ingredients and utilizing the analytics to know what sells more and what are underperforming items. For the analytics, this will involve graphs to convey information in a more digestible manner rather than just a bunch of numbers. Managers will need to be able to make menu item changes and alter the menu board based on what performs well. To improve accessibility, we can have alternative text if the graphs aren't good enough at conveying the information. The manager pages should also be able to be translated into any language to ensure that the manager is able to effectively utilize the analytics pages.

Cashier:

An assumption we're making with the Cashiers is that they will become accustomed to the layout of the ordering page which means we can focus more on efficiency rather than aesthetics. Whereas the customer needs to have a less cluttered layout for a more aesthetic interface, the cashier should have a more compact layout since they'll likely learn where every item is. As for the needs of the Cashiers, their main need is to quickly choose items and not have to sift through pages and scroll through them. So we need to have the layout more simple and compact rather than spread out. There should also be more options than the customer for custom instructions. As for accessibility, the initial barrier to getting accustomed to the POS will be the biggest issue. Symbols could be included to make things more identifiable and easier to understand. The cashier page should also be able to be translated into any language to ensure they're able to easily and effectively order.



User Study Participants

Participant Name (May be Changed for Privacy)	Persona and Accessibility Needs	Responsible Team Member
Keagen	Persona: Customer	Whole team in lab
Chance	Persona: Customer	Whole team in lab
Sarah	Persona: Customer	Uzma Hamid
Cindy	Persona: Customer	Alex Do
Amanda	Persona: Customer	Nathan Truong
Osvaldo	Persona: Customer	Matthew Livesay
Stacey	Persona: Customer	Easton Havemann
Shaz	Persona: Customer	Dhiraj Atmakuri
Mena	Persona: Customer	Raphael Hanna

User Study Findings

One prevailing theme among our participants was that the design of the ordering page was relatively simple. Another prevailing theme was that the accessibility options and navigation tools were quite helpful for our participants. One major blind spot that was very apparent among our participants was that there was virtually no feedback when ordering an item. Additionally, another blind spot mentioned by many of our participants was that there was no way to remove an item from an order. Another significant blind spot was that the users didn't have the ability to customize their orders, such as adding or removing ingredients. Furthermore, the participants also noted that when using the search box, there are some visual glitches regarding the menu items.

Proposed Design Moves

High-level Design Move	Detailed Description	Justification
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Enhance order confirmation	Implement a visual cue(e.g., pop-up animation or the number subscript over the cart icon) to confirm adding items to the cart.	Keagen, Chance, Mena, Osvaldo and Cindy all expressed a lack of clarity in confirming order additions. A visual cue would provide immediate feedback and improve the user's confidence in their selection.
Header visibility	Make the header section fixed as the user scrolls.	Both Keagen and Chance found the disappearing header inconvenient. A persistent header improves navigation and allows users to access essential functions(e.g.; checkout) easily.
Improve menu item representation	Ensure all menu items have high-quality images associated with them.	Keagen and Cindy both noted the lack of unique images for items. Images are crucial for visualizing food and can significantly enhance user experience.
Allow order customization	Integrate functionality to edit individual ingredients within an order (e.g; remove, add quantity)	Keagan and Shaz expressed a need for customization options. This feature caters to user preferences.
Differentiate combo orders	Visually distinguish between combo meals and individual menu items.	Keagen suggested improving the distinction between combo and individual orders. This helps users choose the most suitable option.
Fix item filter	Address any bugs or limitations in the item filter functionality to ensure accurate search results.	Sarah encountered issues with the item filter. A well-functioning filter allows users to find desired items efficiently.
Implement back to top function	Integrate a button or icon that allows the user to easily navigate back to the top of the page.	Sarah suggested a "back to top" feature for improved usability. This feature is especially helpful on long pages and enhances ease in navigation.
Enhance menu descriptions	Include concise descriptions for each menu item to provide additional information beyond the item name.	Sarah and Shaz highlighted the lack of description. Description can improve user understanding, inform purchase decision,s and enhance the overall appeal of the menu,



Make the header static	Make the header with the checkout button stay at the top of the webpage.	Amanda, Keagan, and Chance suggested the header should stay at the top so the customer doesn't have to constantly scroll back to the top to check their order.
Add more info on Rev's Grill	Add an "About us" link that will take the customer to a page that describes the history and evolution of Rev's Grill throughout the years.	Stacey suggested that she wanted an about page to learn more about the restaurant and determine if it is trustworthy and popular as well.
Add the ability to remove a menu item from an order	Implement a red "Remove" button that is associated with all the items in our cart. If it is pressed, it will remove the associated item from the cart and adjust the current total.	Kaghan, Cindy, Shaz, and Stacey noticed the inability to remove an item from their current order and suggested that the feature should be added.



Appendix 1: User Study Observations and Interview Notes

Participant Name	Observations	Interview Notes
Kaghan	The layout is very simple and easy to understand. The images don't yet represent all of the menu items listed but the ones that do are high quality and clearly communicate the item being shown. The translation to different languages also works well. Feedback to change would be finishing images on all items and adding abilities to edit orders individual ingredients like no pickles or tomato etc. Also a distinction between ordering a combo or an individual entree would be a good idea.	<p>1. Were you able to figure out how to place an order? - Yes, and it was easy to understand.</p> <p>2. Was there any part that you disliked about the order placement process that needs improvement? - Yes, I did not have the option to remove an order from the checkout.</p> <p>3. How quickly were you able to figure out how to place an order? - I was able to figure it out quickly.</p> <p>4. Were you able to find all the items you were looking for? - Yes.</p> <p>5. Were our navigation tools helpful (e.g., scrolling)? - Yes, big buttons were helpful, but constant visibility would be better. Also, images need to be assigned.</p> <p>6. What suggestions do you have for us to make the website better? - make the header static when you scroll though the page, and the ability to remove items from orders page.</p>
Chance Hughes	There is an impressive amount of features implemented at this stage. I like the layout of the	1st Likert scale statement: The website was aesthetically pleasing.



	<p>menu for the customers, but it was not clear when something was added to the cart without having to scroll all the way to the top to check. A small pop-up would be a great way to solve that issue. I like that there are already spots laid out for many of the features yet to be added. I would recommend adding more attributes to the inventory table so it can be used for the excess report feature.</p>	<p>- Grading comment: Agree</p> <p>2nd Likert scale statement: The site felt responsive.</p> <p>- Grading comment: Strongly agree</p> <p>3rd Likert scale statement: The appearance was consistent throughout the site.</p> <p>- Grading comment: Strongly agree</p> <p>4th Likert scale statement: The order placement functions as expected.</p> <p>- Grading comment: Agree</p> <p>5th Likert scale statement: It was intuitive to place an order.</p> <p>- Grading comment: Agree</p> <p>What suggestions do you have for us to make the website better?</p> <p>- There should be some form of feedback whenever you click a menu item button. For example, a popup check mark that shows it actually added. The header should also persist rather than having to scroll back to the top.</p>
Sarah	<p>I found the ordering process straightforward and quickly navigated through it without difficulty. However, there is a notable drawback regarding the absence of descriptions for menu items, which I believe could enhance the user experience. Despite this, I was able to locate all the items I</p>	<p>1. Were you able to figure out how to place an order?</p> <p>- Yes, and it was easy to understand.</p> <p>2. Was there any part that you disliked about the order placement process that needs improvement?</p> <p>- Yes, There was no description</p>



	<p>intended to order. I am impressed by the usefulness of the navigation tools, particularly appreciating the translation option provided. To further improve the website, I would like to suggest assigning unique images to menu items and recommend fixing the item filter for better search results. Additionally, adding small descriptions for menu items to provide users with more information. Also implementing a feature, such as an arrow or another option, to facilitate easy navigation back to the top of the page when reaching the bottom, thus enhancing user experience and overall satisfaction.</p>	<p>for the menu items.</p> <p>3. How quickly were you able to figure out how to place an order?</p> <ul style="list-style-type: none">- I was able to figure it out quickly. <p>4. Were you able to find all the items you were looking for?</p> <ul style="list-style-type: none">- Yes. <p>5. Were our navigation tools helpful (e.g., scrolling)?</p> <ul style="list-style-type: none">- Yes, additionally the translation option proved to be very useful. It would be even better if unique images could be assigned to the items. <p>6. What suggestions do you have for us to make the website better?</p> <ul style="list-style-type: none">- Enhance visual appeal to make items more appetizing.- Fix the item filter when searched for.- Add the small description for the menu items.- It would be convenient to have the arrow or any option when you reach the bottom of the page that takes you back to the top.
Cindy	<p>The overall design of the website looked simple and aesthetically pleasing. I thought the ordering process was initially confusing because there wasn't any notification whenever I placed an order for an item. This led to me being confused for a moment</p>	<p>1. Were you able to figure out how to place an order?</p> <ul style="list-style-type: none">- After a while, yes. <p>2. Was there any part that you disliked about the order placement process that needs improvement?</p> <ul style="list-style-type: none">- The checkout process was a little



	<p>because it looked like nothing was happening. After noticing the checkout icon in the top right, it became clearer, however. There should also be a way to get rid of items in my cart because I couldn't get rid of the large amount of items I selected earlier. Also, some of the pictures for the items seemed weird. For instance, the ice cream sandwich has a picture of a large pork sandwich.</p>	<p>difficult initially. It was mainly because I just couldn't find it in the top right corner. An improvement is to make a notification in the checkout icon whenever you add an item.</p> <p>3. How quickly were you able to figure out how to place an order?</p> <p>- Fairly quickly after realizing that there was a checkout icon in the top right.</p> <p>4. Were you able to find all the items you were looking for?</p> <p>- Yes, that part was really easy because the menu items are subdivided. Unique pictures could make it better since some of the pictures don't make sense with the name.</p> <p>5. Were our navigation tools helpful (e.g., scrolling)?</p> <p>- Yes, it let me get to the sections pretty quickly.</p> <p>6. What suggestions do you have for us to make the website better?</p> <p>- Make the checkout more noticeable and items be able to be removed in checkout. Maybe a working menu page as well.</p>
Amanda	<p>I thought the website was pretty simple to navigate but it wasn't clear if clicking the buttons worked. Also the search functionality did have an issue with the names of the items disappearing. It would also help if English was at the top of the</p>	<p>1. Were you able to figure out how to place an order?</p> <p>- Yes, I was able to order.</p> <p>2. Was there any part that you disliked about the order placement process that needs improvement?</p>



	<p>translation bar.</p>	<p>- Notification/confirmation that an item was added to my cart.</p> <p>3. How quickly were you able to figure out how to place an order?</p> <p>- Pretty quickly, I just couldn't tell when/if an item was successfully added to my order.</p> <p>4. Were you able to find all the items you were looking for?</p> <p>Yes, that part was clear.</p> <p>5. Were our navigation tools helpful (e.g., scrolling)?</p> <p>The search was good, the navigation tool was helpful.</p> <p>6. What suggestions do you have for us to make the website better?</p> <p>When you click on an item at the top, it would be easier if those items at the top stayed at the top, something that indicated the item was added to my cart/order. Item names shifted.</p>
Osvaldo	<p>The restaurant website looks pretty nice overall, especially with how it is A&M-themed. They have both bean and beef options for all their burgers, probably to provide vegetarian or vegan options. The large water is more expensive than the soda. The hours for the restaurant are conveniently located at the bottom of the ordering screen. There are links to social media at the bottom, which is neat.</p>	<p>1. Were you able to figure out how to place an order?</p> <p>I was able to figure out how to place an order</p> <p>2. Was there any part that you disliked about the order placement process that needs improvement?</p> <p>There was no particular part that I disliked about the order placement process. Maybe it would be nice if the website let you know when</p>



		<p>you had added something to your cart.</p> <p>3. How quickly were you able to figure out how to place an order?</p> <p>I was able to figure out how to place an order relatively quickly thanks to the intuitive layout.</p> <p>4. Were you able to find all the items you were looking for?</p> <p>Yes, clicking any category on the menu took me to that section which helped me find the items I was looking for.</p> <p>5. Were our navigation tools helpful (e.g., scrolling)?</p> <p>The menu links were very useful and the search bar was very helpful.</p> <p>6. What suggestions do you have for us to make the website better?</p> <p>It might be nice if it showed how many items were in your cart in case you accidentally clicked on something.</p>
Stacey	The design layout is simple which makes it easy to navigate. I do think it would be nice to have some description of the restaurant or the history of the restaurant. Additionally, having the option to modify the order - no vegetable, no mustard, etc. - would be a	<p>1. Were you able to figure out how to place an order?</p> <p>Yes, but the cart didn't show the notification.</p> <p>2. Was there any part that you disliked about the order placement process that needs</p>



	customer friendly option.	<p>improvement? It was good. It would be helpful to have the option to remove an item from the order.</p> <p>3. How quickly were you able to figure out how to place an order? Right away.</p> <p>4. Were you able to find all the items you were looking for? Yes, no problem.</p> <p>5. Were our navigation tools helpful (e.g., scrolling)? Yes, it made finding items quicker.</p> <p>6. What suggestions do you have for us to make the website better? It would be helpful to see a notification of the number of items in the cart.</p>
Mena	This design is nice and simple. There are just a couple of things that could be changed or added but overall it looks great. Things to consider: adding shopping cart notification, edited shopping cart, adding ingredients for menu items.	<p>1. Were you able to figure out how to place an order? Yes, it was straight forward</p> <p>2. Was there any part that you disliked about the order placement process that needs improvement? Everything works as expected. I Recommend adding a notification to let the user know that the item selected was added to the shopping cart before opening it to check.</p>



		<p>3. How quickly were you able to figure out how to place an order? I was able to place an order very fast. Everything made sense from the beginning</p> <p>4. Were you able to find all the items you were looking for? Yes, the options make it easy to navigate</p> <p>5. Were our navigation tools helpful (e.g., scrolling)? Yes, works normally</p> <p>6. What suggestions do you have for us to make the website better? Make sure that you can edit the cart. Also unnecessary spaces between menu item.</p>
Shaz	The design is very clear and straightforward and it was really easy to place an order and the website is visually appealing. I also like the translate button and the weather. The only thing i wish i could do was edit the items after adding it to the order	<p>1. Were you able to figure out how to place an order? Yes</p> <p>2. Was there any part that you disliked about the order placement process that needs improvement? Everything functions like it's supposed to. I can't remove items</p> <p>3. How quickly were you able to figure out how to place an order? Very quickly</p> <p>4. Were you able to find all the items you were looking for? Yes</p>



		<p>5. Were our navigation tools helpful (e.g., scrolling)? Yes</p> <p>6. What suggestions do you have for us to make the website better? Need to be able to edit the items in the checkout</p>
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