Expert Panel Report

331-902 Team 3 or Group 9

Rushil Jayant
Riley Wenckens
Rahul Rajendran
Elvis Chen
Diego Martinez
Laith Bohsali

Executive Summary

Rev's American Grill is a restaurant located on the Texas A&M University campus and needs a newly designed point-of-sale system. Previously, our team designed and implemented a point-of-sale system in Java that brought many welcomed features but lacked portability. Our team is redesigning the Java application to improve accessibility, portability, and improve overall user experience with new features.

Our team has collaborated with experts across various fields to review our current implementation, judge progress, and give valuable insights. Every interviewee is a professional in their field and holds a specific area of expertise, giving valuable insights and thought-provoking questions to their experience when navigating our web application.

The first part of this document highlights our specially chosen expert panelists, with a brief description of their expertise and the team member who held the interview. The findings section separates each panelist by their name and lists the valuable insights, data, observations, and unconsidered perspectives revealed by the panelist. In awe of the findings, our team compiled a list of high-level design moves separated by category that describes any arising issues and justification for changes.

Expert Panelists

Panelist Name (May be Changed for Privacy)	Specific Area of Expertise	Responsible Team Member
Jared Wang	Human-Computer Interaction Researcher and Enthusiast	Rushil Jayant
Abraham Sanchez	Electrical Engineer at CMC	Riley Wenckens
MG	Team Lead, Software Quality Assurance. Led a project for handling "Cash in stores"	Rahul Rajendran
Tianle Gao	Software Engineering From HPE	Elvis Chen
RF	Retail Manager	Laith Bohsali
Xavier Hernandez	Hardware Verification Undergrad Researcher	Diego Martinez

Expert Panel Findings

Appendix 1 at end of document

In our interviews with experts, we uncovered many findings conducive to our project's success. For starters, many of the experts saw weaknesses in our use of Google authentication, mainly in how we stored our cookies. Relating to cookies, there were also comments on our architecture being uncentralized and unscalable. On the user side, there were talks about inconsistencies in our styling, making it confusing to navigate at times or seemingly unrelated to one another. More on the styling, there were comments on odd placements of buttons, meaning a customer could click a manager button even if they didn't have access to it. Finally, there were some comments on the accessibility of the website. Some thought it was alright but could be improved to make the website as broad and open as possible.

Proposed Design Moves

High-level Design Move	Detailed Description	Justification

Authentication Security	The current way we are approaching authentication is by using Google OAuth and Cookies, which are prone to security issues because cookies are editable by users.	A better way of authentication is to use encryption to improve cookies and to just generally reduce the entries saved in cookies. This will make it much more difficult for scammers and hackers to fake authentication.
Architectural Changes	The current way we are storing state is either with cookies or passing it as props, which is not efficient, and can be incredibly difficult to maintain.	A better architecture would be to use a Vuex store to have a centralized storage. It allows code to be written more easily and allows for scalability.
UI/UX Styling	Our current UI/UX is a little all over the place. Meaning that one page looks different from the other. This difference can be too drastic for users.	A better approach to this would be to have a consistent styling guide for UI/UX. Meaning, that all pages follow the same font, color scheme, widget design, and foreign API design. This would not have to overhaul our entire design but rather make small stylistic choices to have big impacts.
Creating New Users	Our current "register" button is accessible on the home page. This makes it so that anyone visiting the home page can create a new "cashier" and start messing with stuff. This is a flaw.	A better approach would be to hide the "register" button on the manager page. Only a manager or rather an admin would be able to make new users and assign them permissions. This implementation would be more safe.
Accessibility Options	Our current accessibility options are located on the main page of the website. We should consider implementing certain accessibility options such as increased text size and alternate color scheme and putting them within settings. Certain features like language should not be located in settings and the current implementation suffices.	If we continue in the direction of implementing accessibility features and having their toggle on the main page, it obstructs the main features. On the other hand, the setting needs to be easy to find for users that have accessibility needs.

Appendix 1: Expert Panel Interview Data

Panelist Name	Interview Data (Questions and Responses, Observations)	Important Insights and Previously Unconsidered Perspectives

Jared Wang	1) What are your general thoughts on the designs, given your expertise in this field?
	    a) The design looks good, with authentication security for the manager and cashier parts of the pages
	    b) The project feels somewhat incomplete with some components not completed like the pricing for the menus, but adding pictures for items will be helpful
	2) What are things that we can improve in terms of accessibility?
	    a) The Google translator feature is not easily accessible, and not aware at first due to its placement in the top left corner
	    b) Adding more colors to the UI other than Red and Black could make it more meaningful and understandable
	    c) Adding easy-to-read menu prices is essential to making sure that consumers can make well-informed choices
		Important Insights
		
		Overall the design is on the right track, but making it more thorough and with a clearer focus on user interaction and accessibility is essential in making the website excel in the HCI area. Make sure to think about color contrast and readability, and use an accessibility checker.
		
		Previously Unconsidered Perspectives
		
		It is important to be more mindful about the placement of different UI components across the different web pages in the project, having it in corners, or only accessed after multiple clicks make it harder for normal users, and also users with impairments to access the website to the fullest extent possible.

MG	**Questions and Responses:``**
	● Q: What pointers do you have for handling the flow of transactions?
	    ○ If a customer is ordering at the kiosk and their credit card is declined, is there an option to call the manager?
	    ○ If a customer orders at the kiosk but wants to pay with cash, redirect them to the counter
		Important Insights
		
		Handling of payments may change depending on whether a customer or cashier is placing the order. For example, the kiosks at restaurants typically do not take cash. But CVS and other grocery stores do.

	- Q: Is the customer/cashier order page intuitive?
	  - There should be a distinction/grouping between combos and single items
	  - Instead of a "+" button, it should clearly be labeled as "Add to Cart"
	  - Include a button labeled "Edit Item" to edit the ingredients
	  - Think about displaying the cart at all times
	  - Include a tab for "Specials"
	  - Maybe add colors for the cashier.
	Observations:
	- Maybe include a vegetarian section
	- Consider including allergen information
	- How to test the correctness of features?
		For orders paid in cash, the shift manager should have a breakdown including the responsible cashier. This will be a good feature for accountability and balancing purposes.
		
		Previously Unconsidered Perspectives:
		
		Out-of-stock items should be marked on the kiosk. This will prevent unnecessary refunds and conflict.

Tianle Gao	1) What improvements do you think we can make? The functionality looks to be there but it lacks organization. It will be hard for the cashier to find what they are looking for. 2) Are there any features that you think we should implement to stand out against our competition? Add pictures to the options so it would be easier to find the items. Also when there are very few options, the page can look very unbalanced at times so maybe change the display format.	The biggest thing for Tianle is the organization or the UI/UX part of the website. There should be more pictures or icons to improve the looks of the website and a more cohesive design would be much more intuitive for the user.
RF	1. How intuitive is the website to navigate? -Not many difficulties, provide a more logical flow of the website. For instance, do not let customers or cashiers have an option to access the manager page or menu board. 2. How accessible was it as a foreign language speaker? -The option to translate was accessible and visible. The actual translation was a little formal but that seems to be a google translate thing. Was a bit annoying to not	We hadn't considered the overwhelming amount of options some customers who simply want to order would be faced with. We hadn't considered the website from the perspective of a foreign language user, only as a feature. We got an insight into how they specifically use the Foreign

	have an option to switch languages after navigating to an internal page.	language feature while operating the website.
Xavier Hernandez	1. How does the general layout of the website convey ease of use? - Hernandez responded by saying, "The website looks pretty well laid out, and it is obvious what is going to happen when I click a page. I would say that the website is pretty easy to use. Other than just style changes across each page, it's pretty consistent." - He also found it hard to translate the page back to English but was able to figure it out. 2. Is there anything that you find inconvenient? - "I say that overall, the biggest inconvenience is that not everything is complete and that a lot of things you'd expect to happen don't happen." I then ask him for an example. He said, "I don't like how the styling is so inconsistent across the pages. I expect as a user to come to a similar-looking page. 3. What would you like to see in a POS system web app? - He responded "Honestly, I want to see more. I know you are working on more features, but right now, it is a very half-baked product, and it's hard for me to provide proper feedback. My overall extra tidbit would be to maybe add more features for a customer. Maybe like rewards or something like that. - He found it hard to judge what we made, so he was going lighter than I expected. However, I do feel like once we have a product that features more, it'll be easier	Having consistent styling across the webpage. This was the biggest drawback Xavier gave to me. Additionally, he did not like how a user could be made from the home page. He said that it was probably a security flaw and should be hidden behind the manager page.

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	to judge and provide feedback.	
Abraham Sanchez	1) What are your thoughts on the overall design of the system? The overall design feels mostly intuitive but there's a lot of work to be done on various pages to properly judge. I told Abraham that we are a few weeks into development and he was mostly impressed by the Google authentication and translation features, questioning how these were implemented. Abraham said that the main screen should probably be the customer order screen and have the various other options appear after login. 2) Do you feel the navigation between pages is quick, smooth, and snappy? I discussed with Abraham how we implemented the web application as a single page application allowing for updates to happen without a refresh. As such, he confirmed the responsiveness when navigating between pages. 3) Do you think the general audience will like the color schemes and UX? Abraham says the general audience should match with the customer base of the restaurant and the color choices should be chosen based on the restaurant's theme. Because the restaurant is on the A&M campus, it makes sense that almost every component has a maroon backdrop. 4) If you were to make a prediction, do you think the accessibility score for the website would be on a scale of 0-100? Abraham says the translation feature improves the overall accessibility score of the website. He mentions that we could implement more accessibility options within settings so users could customize to their liking. "Maybe a larger text option, change color themes, and so on"	**Important Insights** The overall design seems good for only being a few weeks into development but he told me to let him know once we have finished the customer order screen and menu screen to redjudge. The manager screen seems mostly solid but the tables and graphs could be improved, currently, there are only three rows within the table and an outline of the graph without data. **Previously Unconsidered Perspectives** Abraham likes the accessibility options but notes it could be annoying to the general user if there are a bunch of accessibility options on main pages that obstruct the main functionality.