Report on “JS Cinemas” Food Concessions Application Protype User Testing

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Introduction

JS Cinemas is a local movie theater serving communities such as Potsdam in the North Country. Their website jscinemas.com, displays each of their four locations and corresponding information such as address, movies shown, and showtimes. However, between the varying color schemes, fonts, and display of information used to illustrate this information, it lacks organization. Further, it is difficult to navigate leading to user dissatisfaction.

To improve overall user satisfaction and usability, I focused on developing a concession portion which allows users to order movie snacks ahead via mobile ordering. Although not implemented in JS Cinemas current website, it allows for modernization to match competitors such as AMC Theaters offering similar features.

Before implementing a prototype, a user persona was created to understand who we expect to use our application, for what purposes, and how often. The persona used was a woman in her early 20's who does not go to the movies often and when she does, it's with friends. For the purposes of the prototype, this persona was well incorporated.

With the persona in mind, the prototype was made. To analyze how well the mobile ordering of concessions performs, a set of users were brought in for testing under the protocol listed in Appendix 1. In each session, the user was given a scenario and sequence of tasks to complete.

This report seeks to explain the methodology in implementing and testing, data collected, and results. Through this, key problems are identified from the user testing and improvements are made to achieve overall user satisfaction and usability.

Methodology

The test was conducted in Snell Hall on April 26, 2022, and April 28, 2022. A total of six participants were tested using the application. The sample consisted of students enrolled at Clarkson University enrolled in Clarkson's COMM229: User Experience Design. All individuals tested are young adults ranging from the ages of 18 to mid 20's who contain a high level of technological experience. Although not representative of the general population, the test focuses on the demographics which closely align with the user persona.

In each session, the interviewer read the protocol (Appendix 1) to keep the session consistent and eliminate bias. The protocol started with an introduction and explained the purpose. The purpose was to learn how effectively the application achieves user satisfaction and usability. To put the user at ease, an emphasis was placed on that the application was being tested and not the user themselves. An opportunity was given to ask questions. Then, with permission, the session was recorded via zoom, capturing the audio, video, and the screen.

After the introduction, the user was asked to answer a series of questions focused on understanding their frequencies, tendencies, and experience with online mobile ordering applications. The questionnaire was conducted using google forms using three forms of questions: short answer, multiple choice, and scale questions. The scale questions were ranged from 1-5 where 1 is strongly disagree and 5 is strongly agree.

Once the questionnaire was submitted, the initial view of the application prototype took place. The prototype used in the session was created using Sketch and consists of 10 unique screens with multiple variations to show step progression. The opening page for the prototype is "Select a Pickup Location" and is used for selecting the location for food pickup. In the initial view, this page was shown. The user was then asked to voice their first impressions.

Next, the user was given a scenario followed by a series of tasks. In this scenario they were asked to imagine that they are viewing a movie at Roxy Movie Theater, and they would like to order ahead for concessions instead of waiting in line.

The first task given was to select Roxy Theater as their pickup location. Next, they were prompted to order a small popcorn with light butter and cheddar flavor. Third, they had to

order the first menu item they ordered from February 2, 2022 which was fruit snacks. After adding both items, they were told to go to their cart. Before finishing, they were asked to change the quantity of fruit snacks from 1 to 2.

After completing the tasks, the participant filled out an exit questionnaire on google forms regarding their overall experiences. Much like the pre-questionnaire, it included a series of scale questions and short answers. The scale questions were targeted to understand the user's confidence level and level of satisfaction in ease of completion, time required to complete the tasks, layout and design, and color scheme. Additionally, a scale question was given to ask the user their likelihood of using the application next time they are at the movies. Much like the pre-questionnaire, the scale questions were given on a scale from 1-5. The short answers asked what they liked, disliked, and who they think the target audience is. The short answers were especially important to determine what the application did well on and the areas that need improvement.

The session took each user on average 6 minutes to complete. Once the session was complete, the recording was saved and analyzed. In the analysis, the time that it took the user to complete each task was written down and stored in Google Sheets listed on the protocol (Appendix 1). These tables were also used to record any problems the user faced, whether verbally mentioned or observed. After all 6 sessions were complete and each table was filled out, similar patterns amongst users were determined as well as the total average time to complete each task. From this, recommendations were formulated based on user reports.

Results and Analysis

The pre-questionnaire provides insight into each of the six participants' habits in online mobile ordering and movie going habits. All six participants strongly agreed with the statement “I am confident with online shopping relating to tasks such as browsing, shopping, and ordering”. However, the frequencies of mobile ordering and going to the movie theater varied. The breakdown of the frequencies is depicted in Figure 1 and Figure 2. From this it can be generalized that the sample collected does not frequently go to movie theaters nor use mobile food applications. However, many were familiar with existing food applications such as Uber Eats, Dunkin, GrubHub, Taco Bell, and Five Guys. Additionally, when online ordering 4 respondents use a desktop/laptop and 2 use a mobile phone.

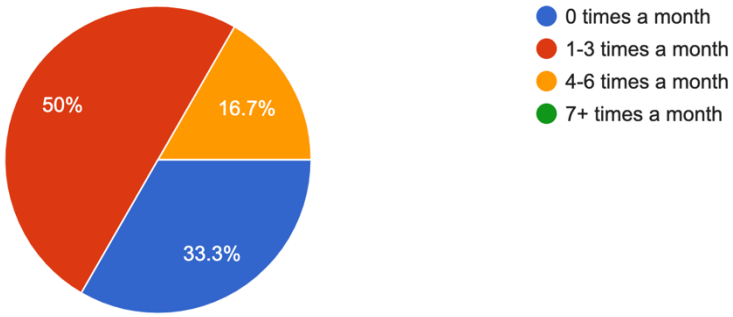

Figure 1: Mobile Ordering Frequencies per Month

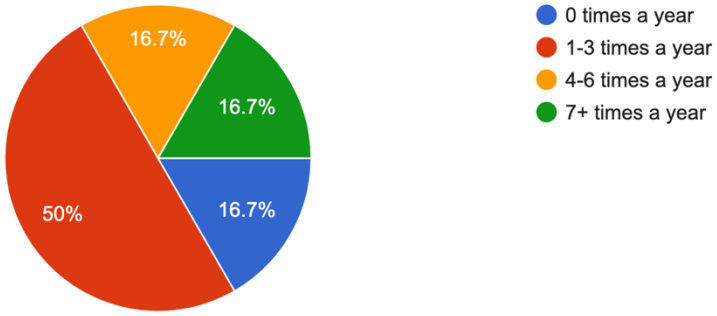

Figure 2: Movie Frequencies per Year

In the initial view of the application, when asked what their first impressions are, many users reports shared commonalities. On the positive side, many said there was a good mix of information which was easy to read and organized well. However, one participant

mentioned that the popup style for the opening page felt out of place. Additionally, one felt the background page was lacking color and added “maybe the background could use a hue of some sort”.

For analysis of the tasks, each task was broken down into a series of screens. The time it took to get to each screen is depicted in Figure 3. As expected, some screens more easily accommodated for certain tasks. In task 1, the user had to select “Roxy Theater” as their location and click the “order here” button to proceed to the main menu. Although there were no substantial outliers in main menu, the individual results varied from 1.51 seconds to 5 seconds. This variance had to do with navigation. The “order here” button was relatively far away from the “Roxy Theater” selection. Some users opted to read the additional locations after selecting Roxy Theater, while others clicked the button straight away. The placement of the button slowed down the user.

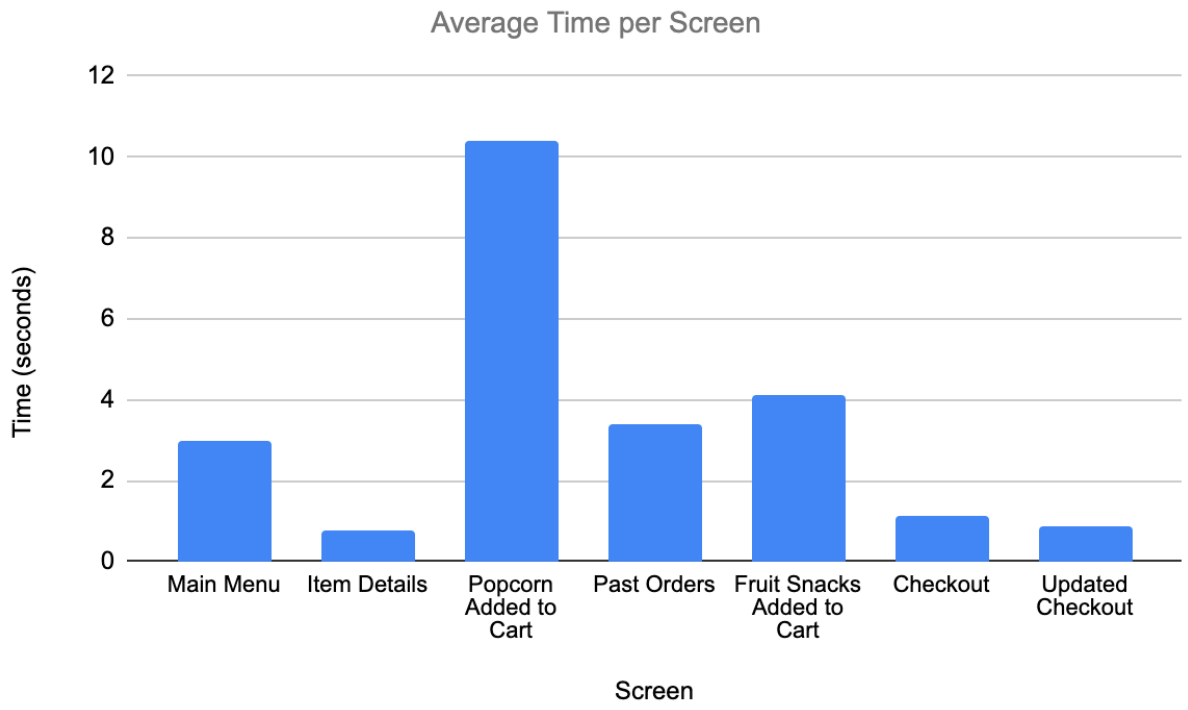

Figure 3: Average Time to Navigate to Each Major Screen

However, once brought to the Main Menu, to complete Task 2 the average user spent less than 1 second to get to the item details page. This was expected as the picture for popcorn was listed first and labeled. No user took the alternative longer route to go to the food menu to click on the popcorn.

The popcorn added to cart average time was longer as it contains multiple screen progression but is listed as a summary as the pathways varied per user. There was one significant outlier with an average over 13.65 seconds; it took this user 15.8 seconds. This user asked for confirmation of the tasks multiple times through statements such as, “small popcorn, right?” and waited for a response before proceeding. Additionally, with the style chosen for the customization of menu items the application has two pathways. The user may opt to de-collapse the customization menu identifiers after selecting an option or just simply move on to the next without doing so. If opting to de-collapse, more steps were added increasing the time taken to complete the progression by over 10%.

From the popcorn added to cart page, it took the average user 3.39 seconds to get to past order. To complete the sequence, the user had to select “Continue Shopping”, which was located below “Proceed to Checkout” to be brought to the main menu and select past orders. Two users displayed hesitation in the task. Participant 1 toggled back and forth the mouse to identify which of the button to press. Participant 2 asked for confirmation once again and clicked the “x” button located on the added to cart page, which was not yet active in the protype.

The next screen, the fruit snacks added to cart page took an average of 4 seconds to reach from past orders. One participant, participant 2 took longer than average, totaling 7 seconds. To add the fruit snacks to the cart only the “+” button next to the item was used as the clickable region for the action in the protype. However, they tried clicking the item listing. Once they realized the action was not performed, they quickly revised where they clicked on the screen.

The next two pages took significantly less time than others. All users were able to reach the checkout in around 1 second. Familiarity resulted in the quick actions because they had already seen the added to cart page which contains this action. Directly proceeding, they were able to update the checkout in 1 second by clicking the “+” button to increase the quantity of the fruit snacks.

The observable data was then compared to the post-questionnaire to capture the user’s overall satisfaction.

In the post questionnaire the first question aligned with that of the pre-questionnaire and asked the users confidence level in navigating through the protype. In the pre-questionnaire, all strongly agreed that they “are confident with navigating through mobile applications”. However, participants 5’s level of confidence decreased to “agree” while the others remained the same. This change is not statistically significant to indicate that a users’ confidence level decreases using the prototype.

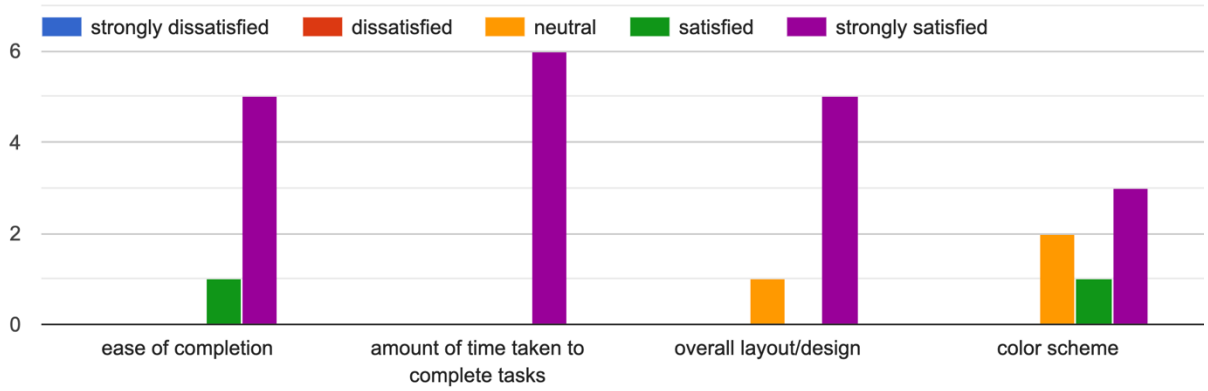

Figure 4: *User responses for Satisfaction to Statements*

User reports on the level of satisfaction to each of the four post questionnaire statements are shown in Figure 4. Many users strongly agreed with each of the statements regarding ease of completion, timing, layout and design, and color scheme. The lessening level of satisfaction mainly stemmed from the layout/design, as well as the color scheme. The less than favorable satisfaction for the color scheme is further elaborated in each user's response to "what do you dislike about the application". In this question the feedback for all 6 users was either nothing or about the color scheme. Further, 67% of all users mentioned the color scheme adding comments such as "a little bit dull", "didn't draw me in", "wasn't very interesting", "little less white", and "needs more variety". Full responses regarding the dislikes are shown in Figure 5.

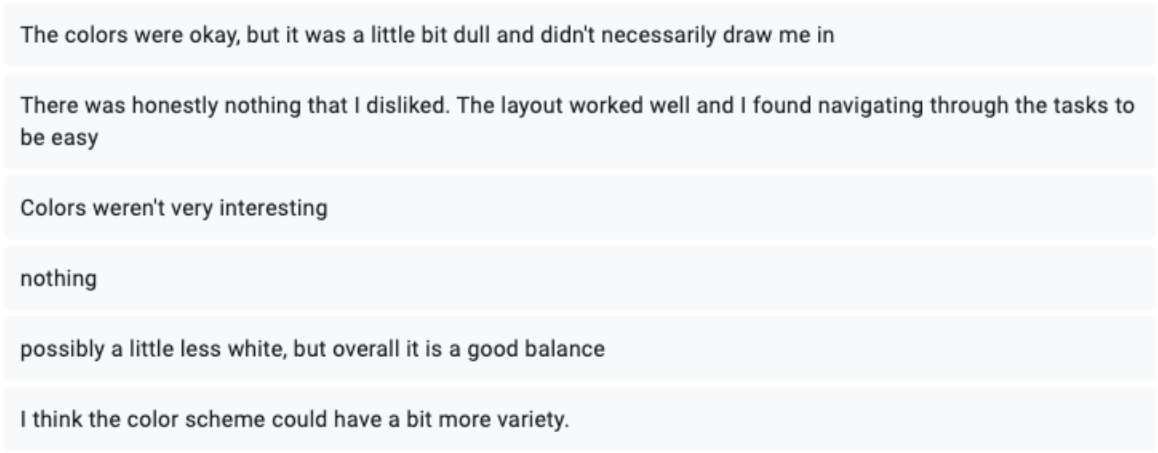

Figure 5: Application Dislike Reponses

Despite the dislikes, 66.7% of the users strongly agreed, and the rest agreed that they would use this application to order ahead next time they are at the movies. To further understand why they would use it, the question about what they liked on the post questionnaire was closely analyzed. 50% mentioned it was easy to use. More specifically, the processes flowed nicely and functioned as they would expect an app of this nature would perform. The organization between the text, icons, and buttons were well incorporated. Full responses regarding the likes are shown in Figure 6 below.

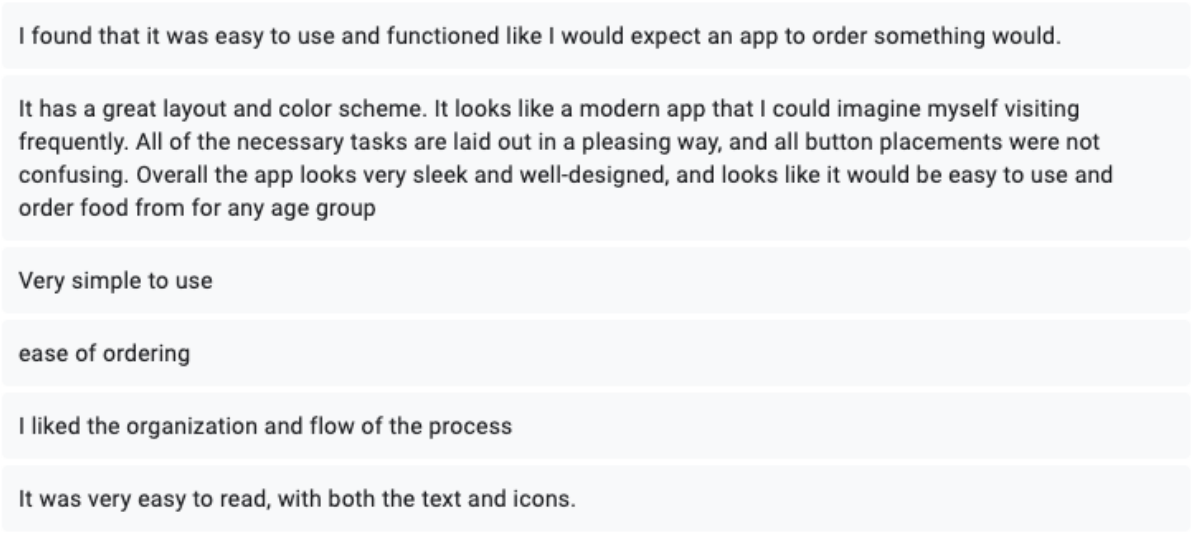

Figure 6: Application Like Responses

With all young adult participants reporting they would use this app again, who they thought would be the target audience differed than expected. Three participants believe this app is aimed towards middle aged people and one said moviegoers. The remaining two mentioned young adults. This was interesting as the persona the protype was centered around was mainly that of a young adult.

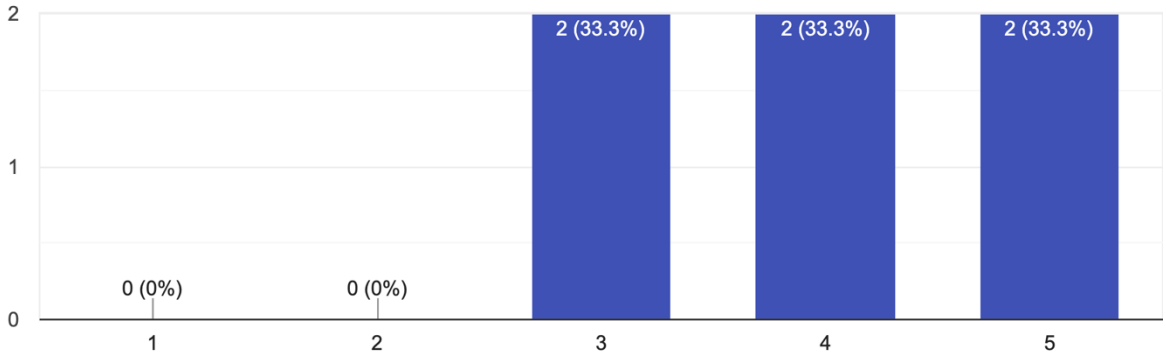

Figure 7: How JS Cinemas Application Redesign Compares to User's Favorite Application

Lastly, users were asked to compare the JS Cinemas redesign to their favorite app, which they mentioned in the pre-questionnaire. Some of the application mentioned in the pre-questionnaire were a mix of different genre applications such as Dunkin, Snapchat, Amazon, YouTube, and TikTok which was said twice. The results for comparison to their favorite apps which 1 being very unfavorable and 5 being very favorable is listed in Figure 7. It can be generalized that there were no unfavorable ratings, just feelings ranging from neutral to very favorable. By making conclusions and recommendations for improvements, I aim to raise all satisfaction levels, improve dislikes, and comparison ratings identified and reported throughout the sessions.

Conclusion

First impressions are crucial. When creating the initial page, the Aesthetic Usability Effect came to mind to create an aesthetically pleasing initial page to lead to increase positive judgement. Overall, the first impressions in user testing for all 6 participants was positive. However, there were some flaws identified from the start. The common flaw, the color scheme was identified from one participant from the initial page.

Instead of using plain white, it would be useful to use an off-white hue as the background for all pages. To go along with the color scheme, I would opt for a subtle blue. Additionally, I would decrease the concentration of blue variations elsewhere. To add more variety, a third color family such as green can be tested in specific areas such as the “view all” button in the main menu. Additionally, the amount of times blue that is used in the “pickup location” bar displayed on most pages can be limited as this color is used repeatedly in “Past Orders” in the date listings and in “Item Details” on the top. In terms of the feeling for the initial page being a pop-up that can be eliminated by making it full screen and keeping that page for only editing the pickup location.

Fitts Law can be studied and used to make improvements. Although not explicitly said or suggested, it was observed that the amount of time on the initial page was because the user had to jump from the top of the screen to select the location to the bottom to continue. This time can decrease by simply just selecting the location or placing an arrow button to correspond to each location limiting the time to acquire a target.

Further, improvements should be made to the protocol itself. To get a better representation of the time it takes the user to navigate each page, the list of tasks should be given to the user one by one on a flash card in addition to being read. This will eliminate the need to ask for confirmation in the task and comments such as “you wanted me to order a popcorn, right”.

In all, the user tests provided useful data in improving the application. The usability of the application was no issue. However, the feelings of satisfaction were diminished especially with the color scheme choice. Once improved, JS Cinemas application will have the power to serve many in mobile ordering at movies while providing a great product. Further, the results of dissatisfaction observed can be reversed by the tactics mentioned to lead to increase feelings of satisfaction and positive recall through the Peak End Rule.

Appendix 1: JS Cinemas App Redesign Protocol

Introduction

Hi, I'm Rosie and I am going to be walking you through the session today.

To start, I would like to emphasize that the mobile application is being tested today and not you. Further, the purpose of this test is to learn how effectively it achieves user satisfaction and usability.

Throughout the session, I will be asking you a series of questions. As we progress through the session, I ask you to think out loud about your process and thoughts. Please voice your opinions, no matter positive or negative. You will not hurt my feelings.

If you have any questions, ask them. Since the purpose of this session is to test usability without much aid, these questions may be unanswered until the end.

Before we jump in, is it okay if I record this session? Your recording will only be seen by me for the purpose of improving the application.

☐ Start Recording

Ok, the recording is in progress.

Before we begin, do you have any questions?

Pre-Questionnaire (Google Form)

First, I would like you to fill out this Google Form with questions before completing the tasks. These questions ask about your frequency, tendencies, and experience with online mobile ordering applications.

Pre-Questionnaire Google Form Questions:

- I am confident with online shopping-related tasks such as browsing, shopping, and ordering

  Strongly Disagree o o o o o o Strongly Agree

- How many times a month do you order food using mobile applications?

  o 0 times a month
  o 1-3 times a month
  o 4-6 times a month
  o 7+ times a month

- How many times a year do you go to the movie theater?

  o 0 times a year
  o 1-3 times a year
  o 4-6 times a year
  o 7+ times a year

- What is your favorite mobile application?

- Are you familiar with any food ordering applications? If so, which ones?

- When mobile ordering, what device do you typically use?

  o mobile phone
  o tablet
  o laptop
  o desktop computer

☐ Submit Pre-Questionnaire

Thank you for your responses. Next, we will begin with viewing the application.

☐ Turn on the computer to reveal Prototype

To start, please look at the opening page.

What are your first impressions?

Scenario

Now comes the fun part! I am going to give you a scenario and a list of tasks to complete. Since the prototype is more targeted, it is important to follow the steps in order of occurrence.

Once again, I ask you to voice your thoughts out loud, whether positive or negative.

For this scenario, I would like you to imagine that you are viewing a movie at Roxy Movie Theater. Instead of waiting in line for concessions, you would like to place a mobile order.

First, select Roxy Theater as your pick-up location.

Next, you want to order a small popcorn with light butter and cheddar flavor.

After ordering the popcorn, you want to view your past orders and add the first item you purchased on February 2, 2022.

Now you are ready for checkout. Head to your shopping cart.

But wait! You want to 2 fruit snacks instead of 1. Change the quantity.

Session Data (Google Sheet):

Participant ID _____

Screen	Difficulty	Time	Notes (reasons for issues)
Main Menu			
Item Details			
Popcorn Added to Cart			
Past Orders			
Fruit Snacks Added to Cart			
Checkout			
Updated Checkout			

Post-Questionnaire (Google Form)

Thank you for completing the tasks. To wrap things up I have a short survey for you to complete regarding your overall experience today.

Post-Questionnaire Google Form Questions:

- I felt confident navigating through the application

  Strongly Disagree o o o o o o Strongly Agree

- Please select the corresponding level of satisfaction to each of the statement below

	Strongly Dissatisfied	Dissatisfied	Neutral	Satisfied	Strongly Satisfied
ease of completion	o	o	o	o	o
amount of time taken to complete the task	o	o	o	o	o
overall layout/design	o	o	o	o	o
color scheme	o	o	o	o	o

- I would use this application next time I am at the movies

  Strongly Disagree o o o o o o Strongly Agree

- How does this application compare to your favorite application?

  Very Unfavorable o o o o o o Very Favorable

- What did you like about this application?
- What did you not like about this application?
- Who do you the target audience is?

☐ Submit Post-Questionnaire