Deliverable H

Project Deliverable H: Prototype III and Customer Feedback

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November 12, 2020

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Introduction

This document clearly outlines the third prototype of an app to be developed for JAMZ drone delivery service. Our overall goal is to develop a user-friendly app that will allow customers in rural areas to easily order food through an online interface. It should allow the customer to customize their profile, view a variety of restaurants, select the food options they want, and track their order in real-time with ease. We will first discuss the feedback we received from the client on our first prototype, and the feedback received from customers on our second prototype. Next, prototype III will be outlined and the reason why we made specific design choices will be discussed. We will then go over our testing plan and test results. Our final section will discuss our next steps for our final solution.

Client Feedback

On Tuesday, November 10th, our team met with JAMZ for a pitch presentation on our first prototype. We showed them images of the app at that stage in development, and they gave us feedback on how to improve it. They reminded us to include a failsafe option for the customer, in case something is wrong with either their order or the drone. Using this function, the customer can ask either the restaurant or JAMZ client services for help. JAMZ also asked us to make the barcode that the drone must scan off the customers phone in order to land available through print and email, so the customer has more options to access it. They also requested that we add a scrolling feature to our restaurant, menu list, and order pages, in order to make them less cluttered. This will allow us to space items in a list out more so the customer can scroll to browse them. Finally, JAMZ also mentioned that they really liked the idea of an “about us” page to share details about their company. All of this feedback was very helpful, and was incorporated in prototype II.

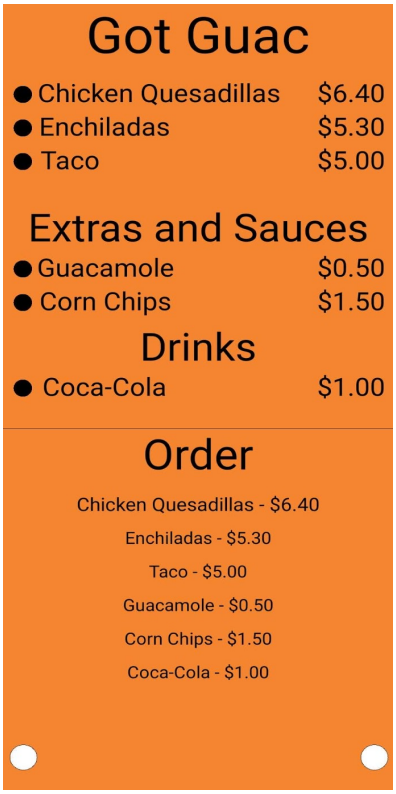
Prototype III

Table 1.0 below shows an image and a description for our prototype, there’s also a link to a video of the working app found in the appendix.

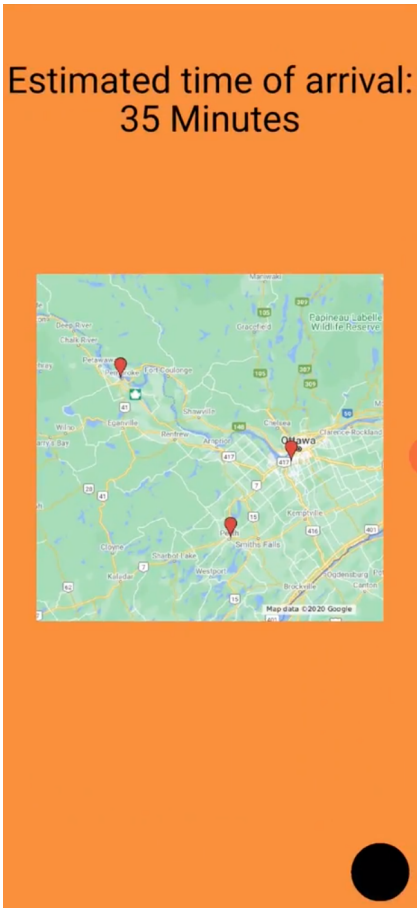
Table 1.0: Pictures and Description of Prototype III

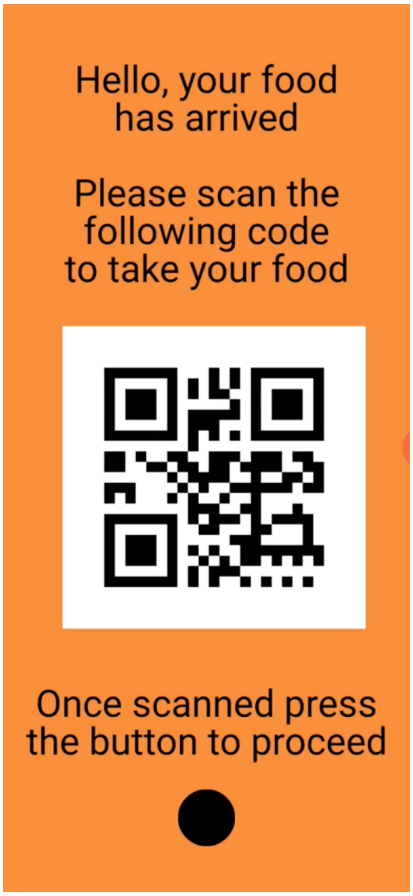
Pictures of Prototype III	***Description***

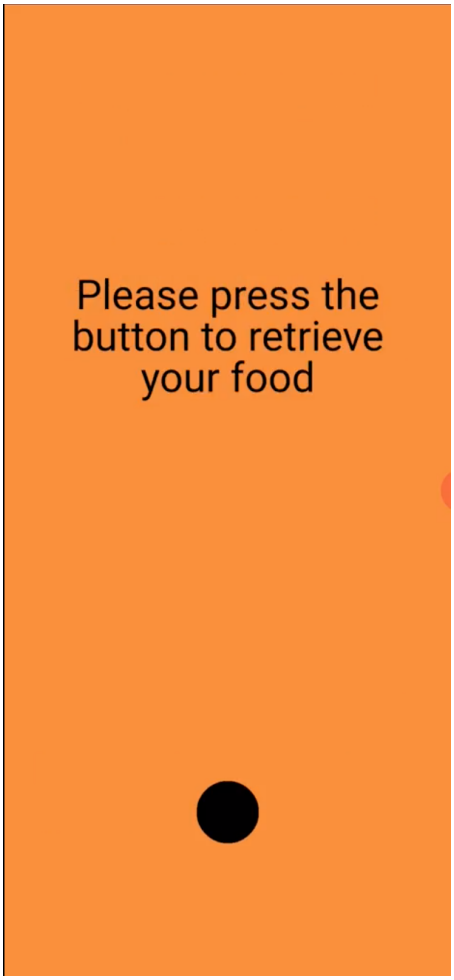
	This is the loading page for the app, and it is the first page the user will see. It is the colour orange, which was changed from purple as orange is more warm and welcoming. This page also has the logo our team created, which shows a drone flying around the name of the company, JAMZ. This logo was designed to remind the customer that when they use the app, they are using cutting edge technology, as no other food delivery service offers delivery via drone.
	This is the login page for the app. It requests the username and password of the user. When designing this page, the team wanted to keep it as simple as possible. The font size is relatively big, and the font style is clear, so that people will easily be able to read the text and know where to enter their information. Once they have entered their information, they can click the black button to login to the app. The colour black was chosen as it stands out against the orange, but does not blend in with the white of the boxes used to enter information. Also, the colours black and white do not clash with orange, which is why they were not changed when the background was changed from purple to orange.

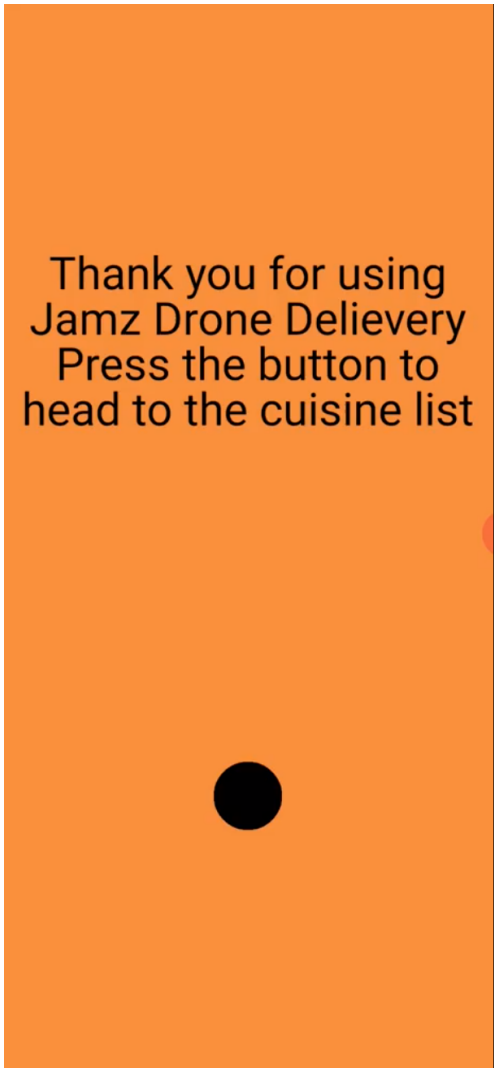
	This is the cuisine and restaurant page for the app. Here, the user can find a cuisine that they enjoy, and then find restaurants beneath that cuisine that are recommended. We went with this layout because it is easy for the user to follow. If they are craving Mexican food, they just need to find the Mexican food section and select the restaurant that appeals to them. In this section, we also went with black text over an orange background because it is easy to read. The font is consistent throughout the page, however the title "cuisines" is given in a larger font in order to differentiate it.
	This is the page for the restaurant "Taco Train". Here, we continued with the black and orange theme to keep the app consistent for the customer. The restaurant name is given at the top of the page in a large font, so the customer can clearly see where they are ordering from. Below that is a list of dishes served, which the customer can select by clicking them. Below that are "extras and sauces" and "drinks", which are two subcategories written in a medium size font. This size was selected as it stands out from the menu items so the user can easily browse the subcategories. However, the subcategory font is not too large, or else it would overwhelm the name of the restaurant and the page would become confusing. The page works so that when the user clicks on a food item it gets added to their order below. This way, the user can see the items they've selected as they continue to browse their other options. The font size for order was selected to be large so that the user's eyes

	can easily flick back and forth between the menu and their order. The user can also scroll down to see more menu options, which was a feature requested by the client during our meeting, in order to keep the menu page from looking too cluttered. If the user decides that they have changed their mind, and want to order from a different restaurant, they can select the bottom left white circle, which will bring them to the previous page. If they wish to move forward with their order, they can select the white circle on the right. The colour white was chosen as it is different from the black used in the menu list, but does not clash with black or purple. These buttons were also placed close to the bottom of the screen so that the customer can easily hit them with their thumbs while holding their phone.
	For this prototype, we implemented a "PayPal" page to represent how the payment page would be set up. At this time, we are unable to implement a fully functional payment page due to cost and time restraints. Should JAMZ want to implement a payment API in the future, this page will be available to them for easy implementation.

	After the user inputs their payment information, they will be brought to a map showing the estimated time on their delivery. For this page of the app, we maintained the orange background and black text to keep consistent with previous pages. We also included a visual of the map, which was implemented using a Google Maps API. When the map is clicked, it will bring the user to the google maps website to view their order being delivered. The Google Maps API was chosen because it is free, and it was much simpler to implement than our original choice, the MapBox API.

	The JAMZ team wanted to implement a barcode or a QR code to be displayed on the customer's phone when waiting for a delivery. This code will allow the drone to ensure it is in the correct location and delivering to the right person. We decided to go with a QR code model as opposed to a barcode. This is because a QR code can carry way more information than the conventional barcode in a smaller area.

	The page will be available to the customer after the drone has landed. Once the user has taken their food and moved away from the drone, they will click the button which will notify the drone it's safe to take off. This was a must have feature for JAMZ as user safety is a number one priority.

	This is the page that will be displayed to the user when they have retrieved their order. They have the option of going back to the main order page, if they want to order more food or browse their options for next time. For this page, we kept it similar and maintained the theme from the rest of the app to keep consistent.

Test Plan and Results

The following section will discuss the six tests we have used to test our prototypes. Each test is discussed in a chart format, which reviews the test's objective, the description of the test method and the prototype being tested, the timeline of the testing, and the teammate responsible for overseeing the test and analyzing its results.

Table 2.0: Latency Test Description and Results

Test Objective (Why)	Latency test: This will be done to test how long each action on the app takes (ex: logging in, moving from the main page to the shopping cart, etc).

Description of Prototype used and of Basic Test Method (What)	Will begin on November 13th, 2020. The testing method is very simple, we will time how long each page takes to load.
Description of Results to be Recorded and how these results will be used (How)	Acceptable results vary depending on the subsystem being tested. Specifically, it should take no more than 7 seconds to process the users login credentials. Every other function on the app, like moving from the cuisine list to the menu of a restaurant, etc, should take under 2 seconds. This will be analyzed by screen recording a user going through the app and evaluating how long each loading period is. If a function exceeds the acceptable amount of time, we will return to the code and try to simplify it so that it runs faster.
Estimated Test duration and planned start date (When)	We will begin testing latencies after completing prototype 2, so November 13th and again after prototype 3 on November 27th. This test will take approximately half an hour and can be repeated if we are unsure of our results.
Team member responsible for this test and results (Who)	Athena will evaluate the screen recording and keep note of the time each subsystem takes to load. If there is any function that takes too long (for example, the app lags in a specific spot, etc) Pranav will be responsible for checking that part of the code and editing it.
Discussion of results	After evaluating the screen recording of the app, we are pleased to see that each subsystem on the app loads in an acceptable amount of time. At no point does the app lag for an alarming amount of time. This means that we do not need to go back and make changes to the code, as the app already runs at a speed that is within our standards.

Table 2.1:Survey Based on Layout, Functionality and User Experience

Test Objective (Why)	General user experience test: Potential users will be surveyed on the layout, functionality, and the user experience of the app.
Description of Prototype used and of	Tested on prototype 1, using a google survey. Potential users were shown a screen recording of a user placing an order, and were asked to rate the app on its functionality and provide suggestions to improve.

Basic Test Method (What)	The same test will be repeated on prototype 3 (November 27th).
Description of Results to be Recorded and how these results will be used (How)	Acceptable results mean that 75% of users gave the app at least a 8 (on a scale of 1 to 10) on the functionality and layout of the app. If the results are unsatisfactory, the comments left by users being surveyed should be evaluated so that changes may be made based on feedback.
Estimated Test duration and planned start date (When)	We had the survey available between November 5th until November 8th.
Team member responsible for this test and results (Who)	Jasmine created the survey, and each member of the team sent it out to collect responses. Results were automatically tabulated and shared with the group. Results of the survey are below, as well as in the appendix.
Discussion of results (using prototype II)	The results of this survey fell into a very wide range. The app received an average functionality rating of 7.56, however, most users (55%) rated it a 7 or below. We are not satisfied with these results, so we plan to make changes to the layout of the app so that it functions better. Then, we asked what improvements should be made to improve functionality, so we would have some specific criteria to improve on. The feedback stressed that the app should be clearer to use, with a simpler layout, and a more eye catching design that appeals to the user. The responses told us that the app currently looked too difficult to navigate. We agree with this feedback, and as a team have decided to make a plan to improve the functionality of the app in the coming week, before prototype 3.
Discussion of results (using prototype III)	The app received an average functionality rating of 7.13, however, most users (56%) rated it a 7 or below. This is a surprise, as our results are more negative than last time, despite improvements on our rating in terms of aesthetics. Our main suggestion for improvement was to add a universal bar to the app, which is already in the works to be added to the app. We think this is essential to help navigate the app, and are just working on coding and integrating it. After adding

	this feature, users should find the app easier to navigate. We are aiming to have this feature ready for design day.

Table 2.2: Survey Based on Aesthetics of App

Test Objective (Why)	Aesthetic: Is the app consistent in terms of colours, fonts, etc. Is it also interesting to look at, and does it draw the customer in?
Description of Prototype used and of Basic Test Method (What)	Tested on prototype 1, using a google survey. Potential users were shown a screen recording of a user placing an order, and were asked to rate the app on its aesthetics and provide suggestions to improve. The same test will be repeated on prototype 3 (November 27th).
Description of Results to be Recorded and how these results will be used (How)	Acceptable results mean that 75% of users gave the app at least a 8 (on a scale of 1 to 10) on the aesthetic of the app. If the results are unsatisfactory, the comments left by users being surveyed should be evaluated so that changes may be made based on feedback.
Estimated Test duration and planned start date (When)	We had the survey available between November 5th until November 8th.
Team member responsible for this test and results (Who)	Jasmine created the survey, and each member of the team sent it out to collect responses. Results were automatically tabulated and shared with the group. Results of the survey are below.
Discussion of results (using prototype II)	When asked to rate the aesthetic of this app, the average rating received was a 5.56. This is clearly far below our standard, especially since 78% of those surveyed rated the app a 7 or below. When asked to suggest improvements for the aesthetic, users mainly recommended more colours and pictures. Our team agrees with these suggestions, and plans to implement aesthetic changes before prototype 3.
Discussion of results (using prototype III)	The results of this survey were far better than the previous. When asked to rate the aesthetic of this app, the average rating received was a 7.8. Also, 62.5% of participants gave the app at least an 8 or above.

	This does not meet our standards yet, but is an improvement from the last survey. When asked for suggestions, participants commented that they would like more pictures and a change in font, so that titles are more differentiable from lists. Our team agrees with these comments, and we will do our best to implement these changes before design day.

Table 2.3: App Size

Test Objective (Why)	App size: test how much storage this app occupies on a phone.
Description of Prototype used and of Basic Test Method (What)	Tested on prototype 3, before design day, but monitored throughout the project. This will be done to make sure that the app does not occupy too much space on a user's phone.
Description of Results to be Recorded and how these results will be used (How)	Acceptable results are under 100 MB. Otherwise, customers may not want to download such a large app that takes space away from other functions/features they require on their phone. This will be tested by seeing how much space the app requires on an android.
Estimated Test duration and planned start date (When)	We will begin testing this on November 30th. The test is simple, we will just see how much storage is occupied by the app.
Team member responsible for this test and results (Who)	Murad will be responsible for testing this. If results are unsatisfactory, he will evaluate the code and see if there is anything unnecessary that can be removed or simplified, so the app occupies less storage.

Table 2.4: User-Friendliness Survey

Test Objective (Why)	User friendly: see if the app is perceived to be easy to use by potential users.

Description of Prototype used and of Basic Test Method (What)	Using prototype 3, (November 26th) this will be tested using a google survey. Potential users will be shown a screen recording of a user placing an order (apple phones) or be given access to the app if they have an android device, and asked open ended questions about their app experience.
Description of Results to be Recorded and how these results will be used (How)	The results of the survey will be transferred to an excel file to be evaluated. Users will be asked questions like the following: How easy was it to navigate the app? Would you use this app again to place a food order? etc. Acceptable results would mean at least 75% of the users evaluated gave positive responses. This would mean that the app is acceptable by most people's standards.
Estimated Test duration and planned start date (When)	We will begin testing this on November 26th. We will leave the survey up for about 3 days to ensure that a wide range of responses are received.
Team member responsible for this test and results (Who)	Jake will be responsible for writing the survey and collecting the results. Each member of the group will send the survey to people they know to get a wide range of answers. If answers are not satisfactory, Jake will be responsible for creating and suggesting improvements.

Table 2.5: Personalizability Aspects of App

Test Objective (Why)	Personalizable, to see if customers find that the app can be customized to their preferences.
Description of Prototype used and of Basic Test Method (What)	Using prototype 3, (November 26th) this will be tested using a google survey. Potential users will be shown a screen recording of a user creating an account (apple phones) or be given access to the app if they have an android device. They will also be shown how the app customizes itself to the user based on the information entered. Then they will be asked open ended questions about their app experience.
Description of Results to be Recorded and	The results of the survey will be transferred to an excel file to be evaluated. Users will be asked questions like the following: Did you feel that the app gathered enough information to offer a personalized

how these results will be used (How)	experience? What type of recommendations would you expect a food delivery app to offer to customers? etc. Acceptable results would mean at least 75% of the users evaluated gave positive responses. This would mean that the app is acceptable by most people's standards.
Estimated Test duration and planned start date (When)	We will begin testing this on November 29th. We will leave the survey up for about 3 days to ensure that a wide range of responses are received.
Team member responsible for this test and results (Who)	Jasmine will be responsible for writing the survey and collecting the results. Each member of the group will send the survey to people they know to get a wide range of answers. If answers are not satisfactory, Athena will be responsible for creating and suggesting improvements.

Next Steps

The next step section of this report will compare our prototype III to our goal image and discuss improvements that need to be made.

Table 3.0: Prototype III vs Goal Image: Loading Page

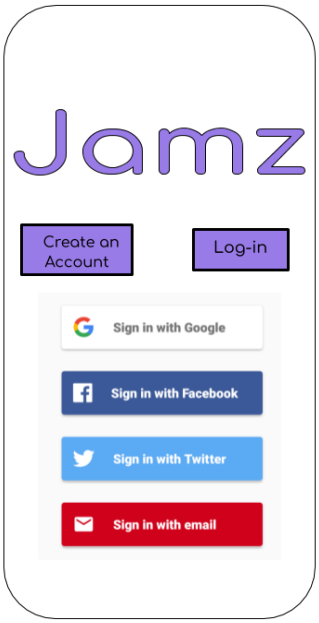
Page Description	Current Prototype III	Goal Image

Loading page		

Our goal for the loading page is to have a simplistic design with an easy to recognize JAMZ logo. We want the user to know that the app is loading and to be patient. In order, to convey that the app is working we want to include a “loading” circle that is commonly seen with other apps. We will do this by adding a series of images that flash a different spike on the loading circle (as pictures), this will occur while the rest of the app is starting up.

Table 3.1: Prototype II vs Goal Image: Log-In Page

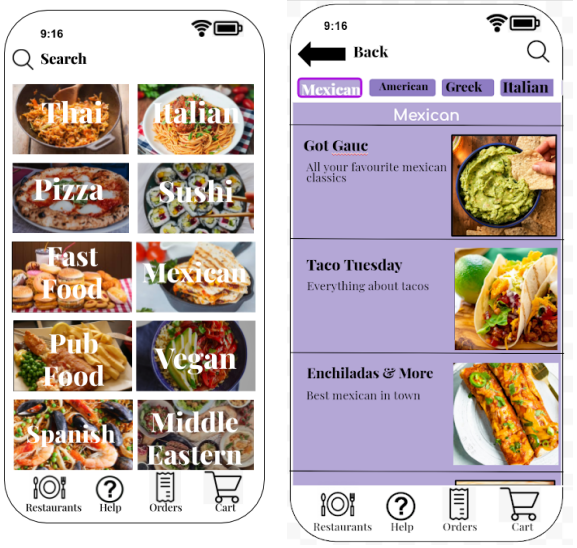
Page Description	**Current Prototype III**	**Goal Image**

Log-in Page		

Our next step for the log-in page is to incorporate a new page that will display the JAMZ logo, an option to create an account or sign in using different options. New users can click on the create an account button and fill in their data; this data will then be stored for future login attempts. When clicking the log-in option it will bring the user to the original page displayed in our current prototype where they can type in the same information used when creating their account. Other log-in options such as facebook and twitter will have a button that will redirect the user to the third-party log-in option and then back to the JAMZ app once logged in. When benchmarking it was determined that having multiple log-in options was liked by users. Multiple login options creates “efficiency and ease” and will allow for other data, such as favourite restaurants and past orders, to be linked to their account.

Table 3.2: Prototype II vs Goal Image: Restaurant Categories and Restaurant List

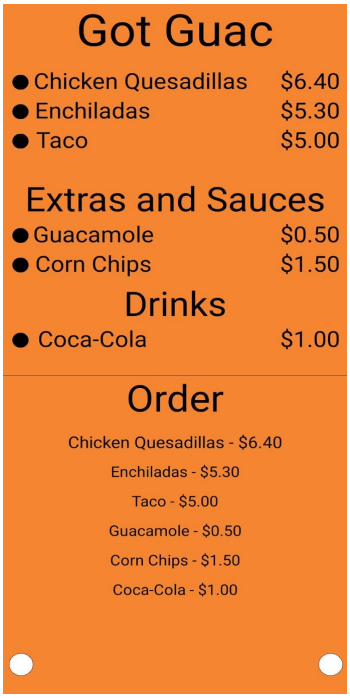
Page Description	**Current Prototype III**	**Goal Images**

Restaurant Categories and Restaurant List	Cuisines Mexican Restaurants Got Guac Taco Train Indian Restaurants Amma's Kitchen Abishek's food	

In order to make the restaurant categories and restaurant list more clear we will separate them into two separate pages. One of our clients major critiques was that our designs looked too cluttered. Having multiple pages will eliminate that allowing for a more sleek design.

Table 3.3: Prototype II vs Goal Image: menu and Order Page

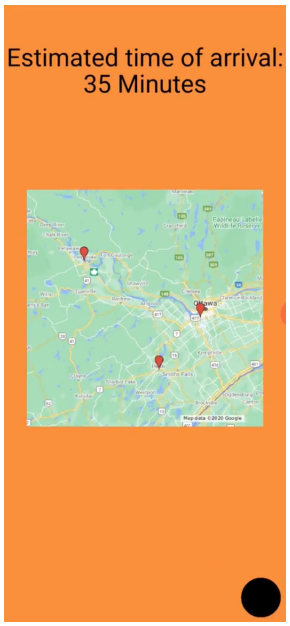
Page Description	Current Prototype III	Goal Images

Menu and Order Page		

Currently, our prototype includes our menu and order page together. As our clients liked the idea of a “scrolling page” we felt that we should stay with the model. However, in order to improve on this model we need to include the quantity of the items ordered, and give a short description of the item. Based on benchmarking, users like knowing what food they’re ordering especially when ordering from a restaurant for the first time. We also need to incorporate a way to edit the order and add special instructions to be directed to the restaurant. Based on our collected survey results it’s important for users to be able to notify the restaurant of any dietary needs or dislikes when ordering.

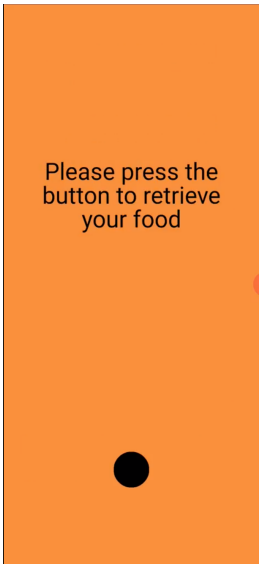
Table 3.4: Prototype III vs Goal Image: Order Loading Page and Map

Page Description	**Current Prototype III**	**Goal Image**

Order loading page and map		

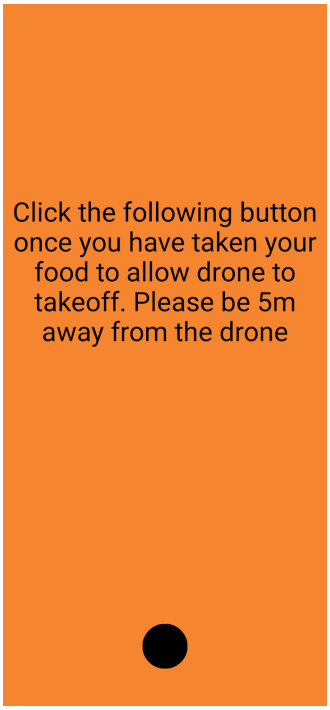
Our current model includes the order loading page and the map on the same page. This allows for the user to always be aware of the location of their delivery. We would like to expand on this design to include the name of the restaurant, summary of order, price and delivery time estimate that will constantly be updated. This is the design for the page that will be shown when the order is being delivered to the customer. Having a map that displays the real-time location of the food is a staple to other food delivery apps and it is much liked by customers.

Table 3.5: Prototype III vs Goal Image:Order Confirmation page

Page Description	Current Prototype III	Goal Image
Order loading page and map		

This is the design for the page the user will see when the drone has landed. The customer will click the button prompted, and the drone's compartment will open so they can retrieve their food. This page will allow the customer to confirm that they received their order and get further instructions if something went wrong. The clients mentioned that they wanted an easy way for the customers to report an issue with the drone delivery. Improvements for this page would be to make it more aesthetic and have a "click here" for more information button as seen in the goal image.

Table 3.6: Prototype III vs Goal Image:Order Confirmation page

Page Description	Current Prototype III	Goal Image
Order loading page and map		

Improvements for this page would make it more aesthetically pleasing and have an option for more information.

Overall Improvement to the app include adding a universal bar on the bottom, using different font sizes to display different meanings and relative importance of words, and having more colors. Adding a universal bar on the bottom will allow customers to easily navigate from page to page, this is a common practice used with most apps including successful food delivery apps. Different font sizes can be used to allow the user to distinguish between a heading, name, and description of restaurants and menu items. Having different shades of orange throughout the screen will be more aesthetically pleasing and was a comment left when conducting our last google survey.

Conclusion

After taking into account the client feedback from prototype I, we were able to improve on our design creating prototype II. This prototype then underwent testing; the results were used throughout our development of prototype II and to modify our plan for prototype III. Prototype III was then analysed and improvements to be made were discussed. Google surveys were sent out to collect feedback from users on Prototypes II and III. These surveys give us insight into the users perspective on the app's functionality and aesthetic. These results were also used in discussing our next steps and how we plan to refine what we have currently developed. In terms of aesthetics, there was a large improvement, as customers seemed to prefer the change in colour scheme from purple to orange. However, adding pictures and changing the font used in the app should help bring this rating up to our standards. When it comes to functionality and layout, the average rating slightly dropped. Participants in the survey stressed the necessity of a menu bar to navigate the app, which we are working on including. This should help improve our feedback the next time we collect survey results. The overall next steps for the app include incorporating the user feedback we received to improve the app's functionality and aesthetic and adding a universal taskbar. We expect that our app will stand out to users as empathy for the user was considered to be the highest priority. We wanted to make sure that the app would meet their needs and be easy for them to use while remaining aesthetically pleasing. We also will prioritize the feedback we have received from potential users in order to make the app as user friendly as possible. The app's ability to mold itself to the user's needs will be what sets our design apart from the competition.

Appendix

Figure 1.0: Google Survey Results for Prototype III- Part 1/3

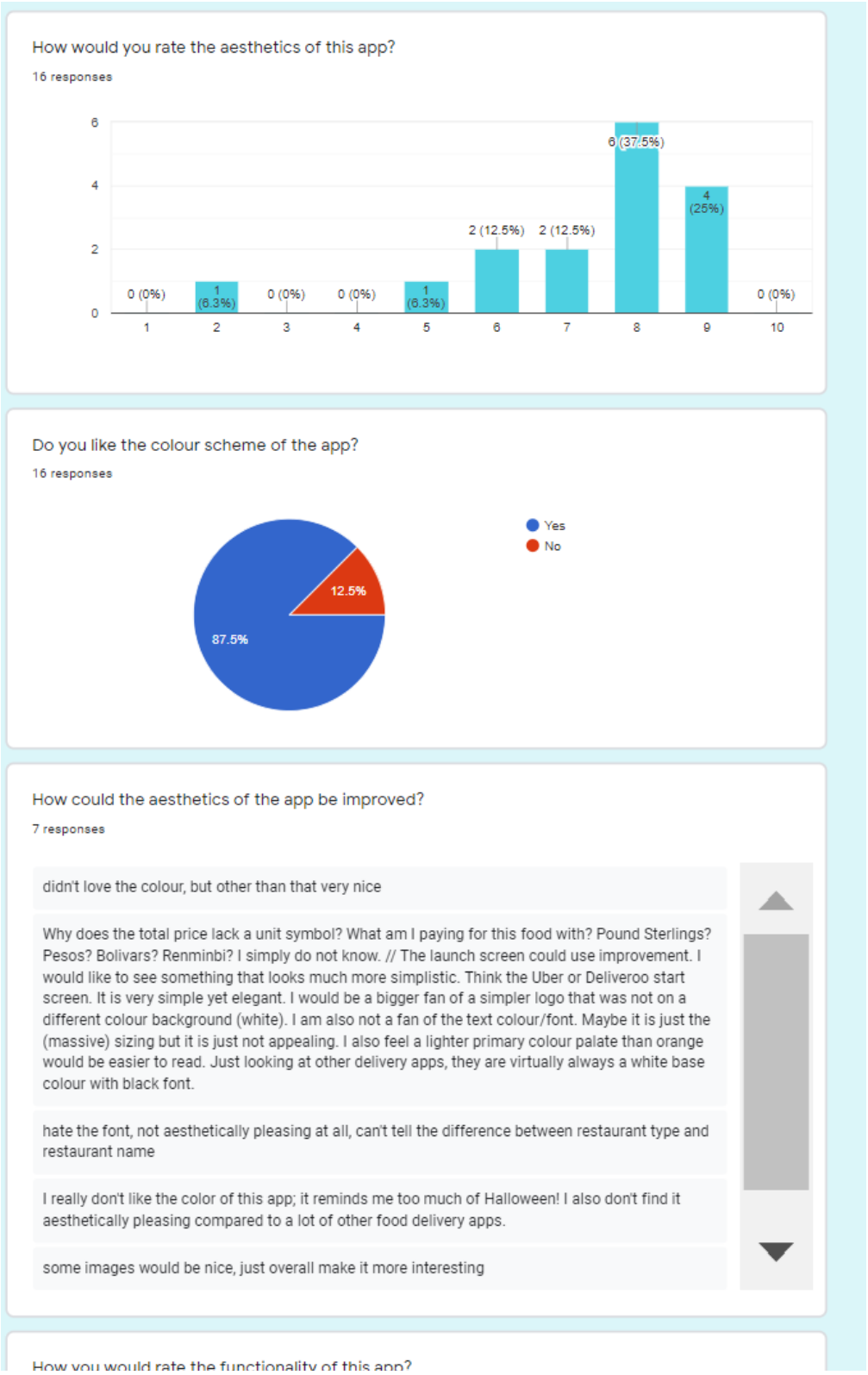


Figure 1.1: Google Survey Results for Prototype III- Part 2/3

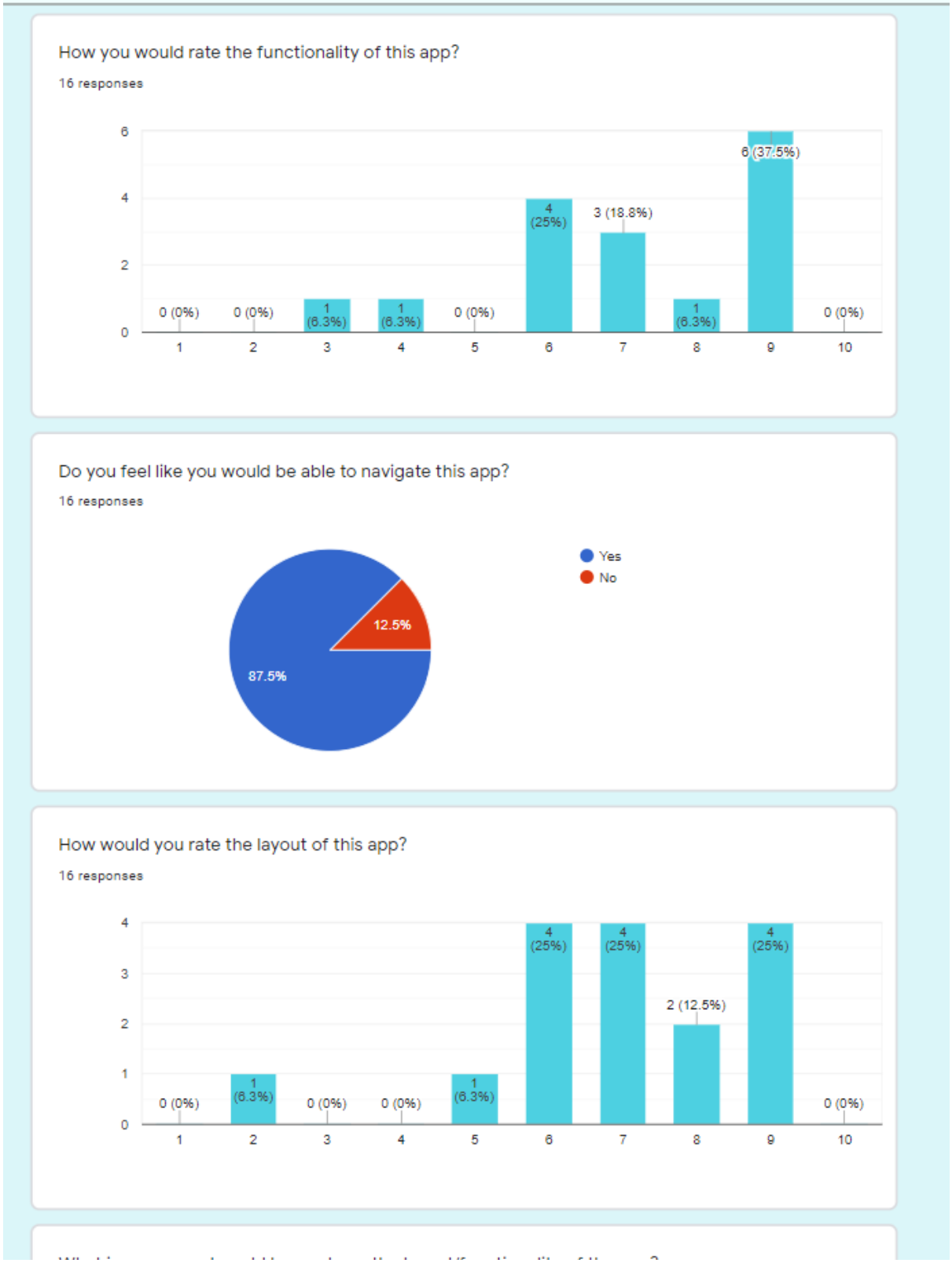
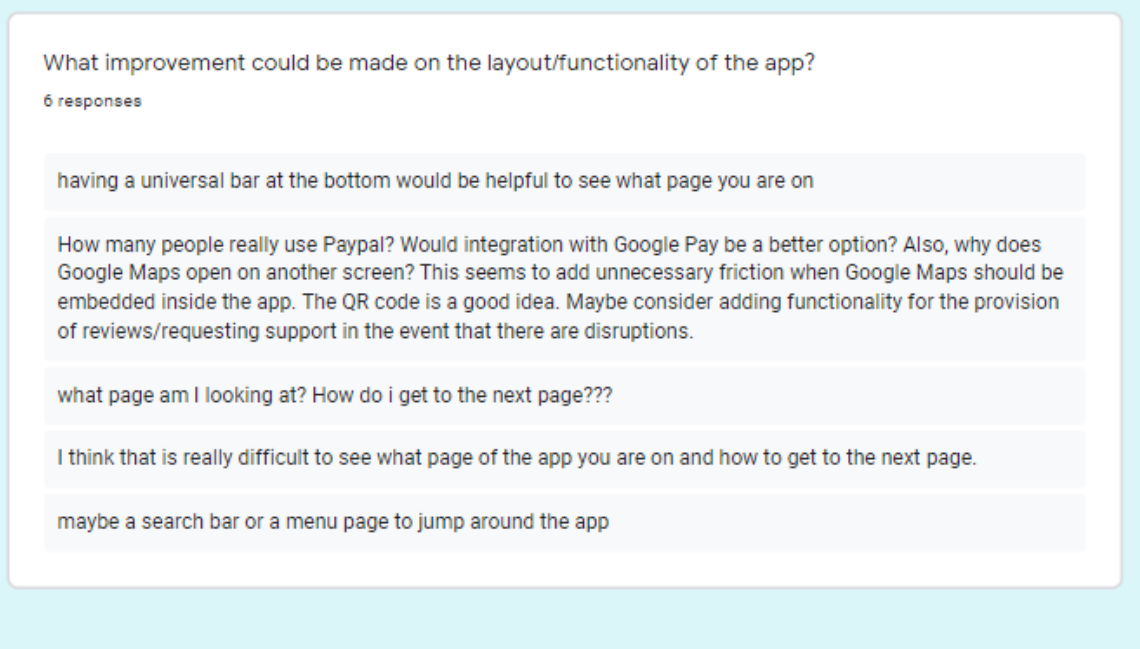


Figure 1.2: Google Survey Results for Prototype III- Part 3/3



Link to video of our working app:
https://drive.google.com/file/d/1E6OKRn_1UztKh9-nX2ALofZBDc8RTr7X/view?usp=sharing