



Engineering Design
GNG1103[A]

Deliverable K: User Guide

Team A15

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Abstract

A user guide is an effective way to share information regarding a project and how it was made. Other people, clients and teammates may want to either continue working on the project, try to create a copy or make improvements. A user guide is thus important as it shares the steps needed to re-create the project, and what improvements can be made.

1.0 Introduction

The following report documents the website created by team A15. The website team A15 created was made using a squarespace with the addition of javascript and html to code advanced features. Some of the advanced features include the ETA function, weather warning feature, and the QR code generator. This website was also made using a squarespace premium account, so if additional features were to be implemented this subscription would need to be renewed.

2.0 Analysis of Final Prototype

The team's final prototype was visually appealing and functional. The website could potentially be used by the JAMZ team if they wish to use it as a user interface.

2.1 The project

The project was to create a user interface for a drone delivery company. Briefly, the website needed a couple key components, such as map tracking, a user login database and to be easy to use. With these few concepts, a problem statement was created, and the whole entirety of the project was based on that. It stated:

“Design a simple-to-use futuristic UI application for a state-of-the-art autonomous drone delivery service. This will contain an interactive map to track the drone delivery and digital menus for available restaurants.” From this problem statement, a project was created.

Bill of Materials				
Item No.	Qty.	Product	Cost	Description
1	1	Adobe XD	\$0	Adobe XD is a user experience design tool for mobile apps that is used to visualize the aesthetic design of a UI.
2	1	Squarespace	\$26/month	Hybrid website builder, allows for custom coding integrations and provides templates for websites.
3	1	Google Maps API	\$0	The google maps API was used to implement the map feature.
4	1	QR Code Generator	\$0	QR code generator used on websites.

Table 1: Material needed for the project

This is the list of material that we needed in our project. Adobe XD to sketch your ideas and Squarespace to build your project. Both these can be replaced by other graphic design software or website builders. However, just make sure that the website builder allows for coding integrations and allows multiple people to work simultaneously (therefore do not use Wix).

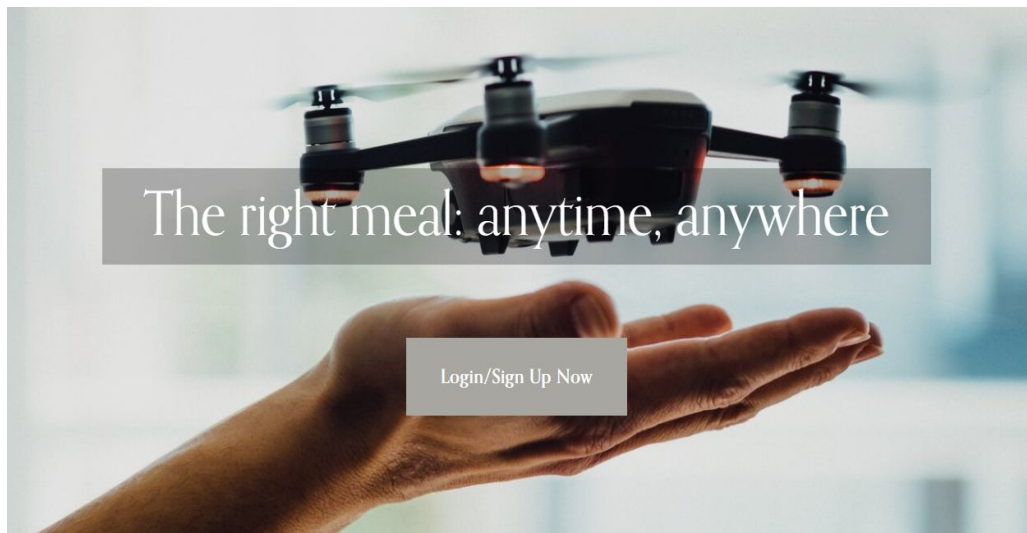


Figure 1: Website Homepage

Additionally, our website homepage was designed to meet all of these needs.

2.2 The Process

To begin, we looked at the problem statement and what the major components that needed to be integrated. From the problem statement, we found four major points:

- Futuristic UI
- Simple-to-use
- Interactive Map to track (ETA)
- Digital menus for the restaurants

The first step to creating a website, find something that will fulfill our needs. Put differently, we needed something that could create a good looking website, and could integrate javascript, HTML and CSS within a tight timeframe. To do this, we utilized squarespace (preference of using squarespace over wix because squarespace allows simultaneously coding between members). Squarespace provided the template for the website, and allowed our own pieces of code to be integrated. From here, the process began.

There are steps however before creating a website. First, a mockup of the website was created. Essentially, sketch (either by hand or using a software such as Adobe XD) how you want your website to look and create a few ideas for every one of your criteria.

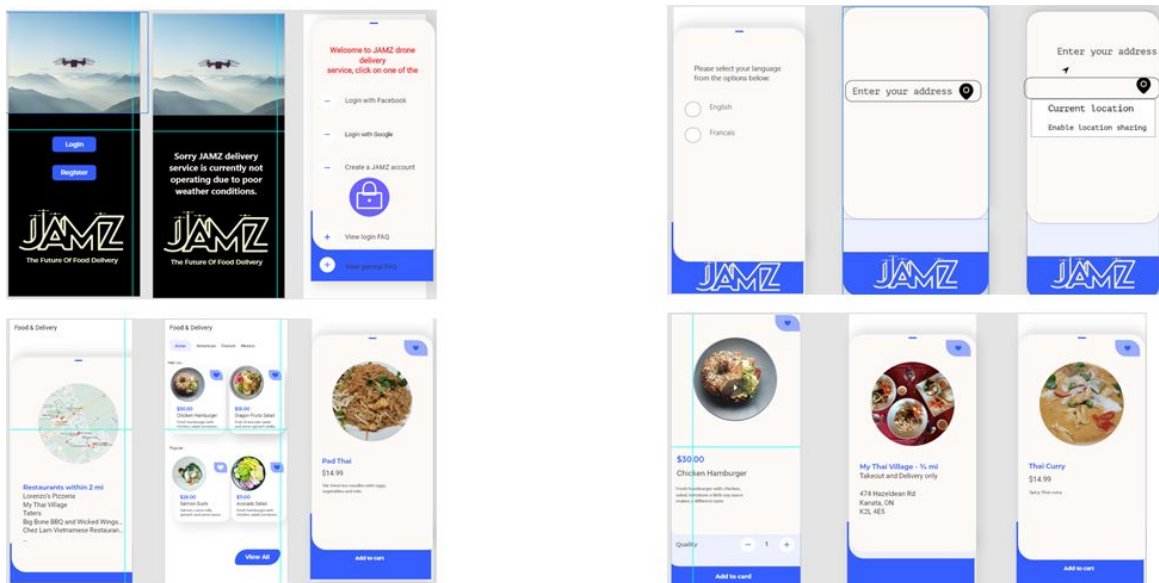


Figure 2: Generating the “look” of your website using Adobe XD

Once these ideas are created, refine them, and combine the best aspects of every one of your sketches - make sure to share your ideas to find the best aspects of your projects. Then, once that is done, select a template provided by squarespace that best fits your design ideas. From here, create the layout of your website. It is important the layout is set so integrating the functionality is not more complicated than it is necessary. Then, once the layout is set, the integration of the functionality is to begin.

Afterwards, making the website functional began. In our project, we first started creating sample restaurants as they were the easier aspects of the project to accomplish. A key aspect of the website was also that it needed to be easy to use. So, make sure to share your project with others and study their ease of use on your website, then make the necessary modifications.

Then start working on the more technical aspects. Create a plan beforehand of how you will tackle the harder parts. For instance, for the ETA, we decided how it would look (so one button to share location and one button to see the ETA). Then, we looked at the mathematical formulas of how we were going to calculate the time between two spots. Once all this was understood, we started the coding process that just put the plan (that we first created on paper) to reality. And the ETA was created. The same process was done for the map and other aspects we wanted to integrate (such as the about us, disabling weather and so on so forth).

```
function test() {
  var lat2 = 42.741;
  var lon2 = -71.3161;
  var lat1 = 42.806911;
  var lon1 = -71.290611;

  var R = 6371; // km
  //has a problem with the .toRad() method below.
  var dLat = (lat2-lat1).toRad();
  var dLon = (lon2-lon1).toRad();
  var a = Math.sin(dLat/2) * Math.sin(dLat/2) +
          Math.cos(lat1.toRad()) * Math.cos(lat2.toRad()) *
          Math.sin(dLon/2) * Math.sin(dLon/2);
  var c = 2 * Math.atan2(Math.sqrt(a), Math.sqrt(1-a));
  var d = R * c;

  alert(d);
}
```

Figure 3: Writing the math out in code

With this in mind, remember that creating your website or any project is an iterative process, so always look for feedback and update how stuff works along the way.

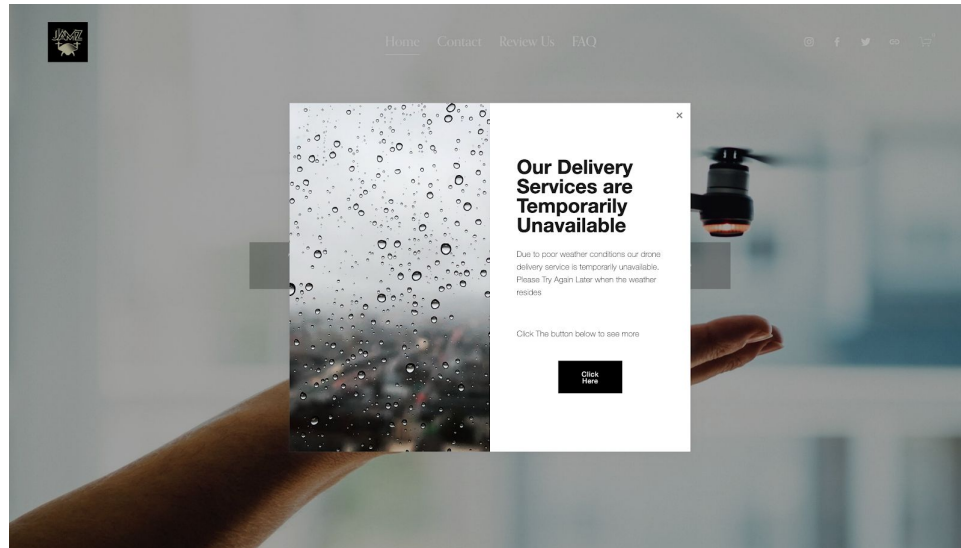


Figure 4: Possible Idea, weather disabling website

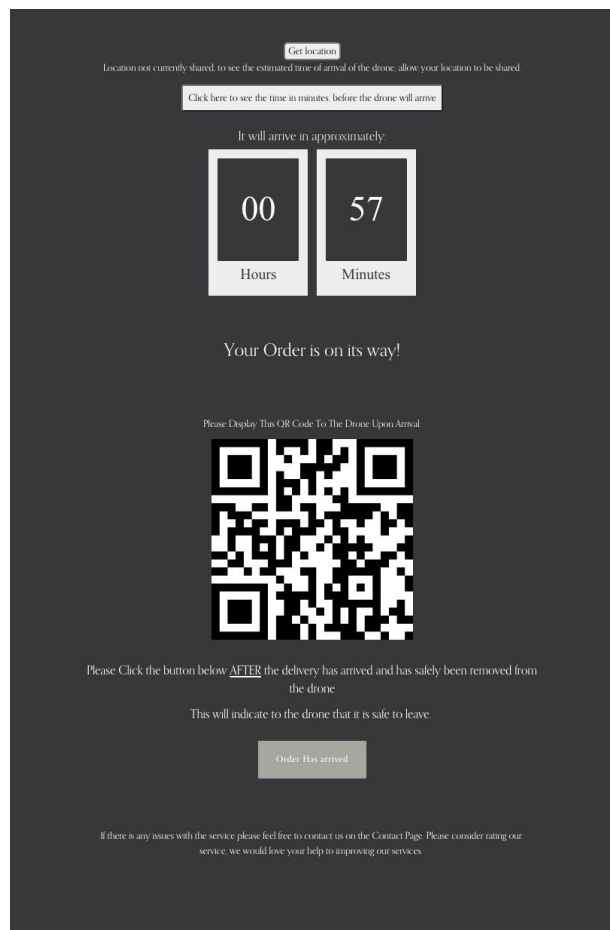


Figure 5: Possible idea, ETA and QR Code

2.3 Testing Results

As a result of our continuous testing throughout the project prototyping phases we were able to create a functional final prototype.

3.0 Improvements

Some of the improvements we have made since our original plan were improving the user's experience and some of the visual aesthetics. During our testing we created surveys to get feedback from users who tested our website, from the feedback it was clear that some of the navigation through our site was challenging for some of the users. From this we improved the layout by making all the buttons and links all properly labelled and indicative of their purpose as to ease the users experience. Briefly, always ensure that the user can understand how the website works, and has an ease while doing that.

After satisfying the criteria we decide to work on original features that would allow us to stand out and impress the clients. Our first was a weather warning notification to inform the users that the site is temporarily unavailable due to poor weather conditions. This notification can be toggled on or off by the administration's request. Another additional feature is a requirement to agree to terms and conditions. These are customizable terms, since the delivery is completely autonomous we felt it was important that the users read terms if any issues were to occur. Another added feature is a confirmation email, the email will contain a description of what the user has ordered, with an amount paid, and their billing address, as well a link that will redirect the user to the confirmation page. This page will give an estimated time of arrival on the drone and a QR code for the drone to scan on arrival. Lastly, we also thought it was important to have an about us page so that the users meet the amazing team who is responsible for the service and learn more about what inspired the team to come up with an innovative solution to deliver food during the covid 19 pandemic

Customer Information

Shipping Address Customer Name Street Address City, State, ZIP/Postal Code Country	Shipping Method Shipping Method
Billing Address Customer Name Street Address City, State, ZIP/Postal Code Country	Payment Method Payment Method

Click here to get your QR Code that you must show to drone upon arrival:

<https://jamz-drone-delivery.squarespace.com/terms-and-conditions>




  

Figure 6: Possible idea, Confirmation email

3.1 Finalizing and Finetuning

After considering the feedback we received and implementing them, it is important to consider the integration of different subsystems, which is largely the correct linkages between different pages, and the functionality of each individual page, especially pages with important subsystems.

4.0 Project Outcomes

This section of the report highlights the main project outcomes from the team.

4.1 Lessons Learned

One of the first lessons learned by our team is not to bite off more than we can chew, we began the projects with high expectations that were somewhat unrealistic for our prior experience and our given time frame. We started hoping to make a mobile application with cordova, however our first issue with cordova was actually getting all installed properly. There were many different pieces that needed to be integrated into our computers software. This itself took many hours for us and after much trying only one group member was able to get the coding environment working. From here we decided that if even just getting the environment setup was a challenge actually coding the website would be next to impossible.

```

Command Prompt
emulate -> cordova run --emulator

Options
-v, --version ..... prints out this utility's version
-d, --verbose ..... debug mode produces verbose log output for all activity,
--no-update-notifier ..... disables check for CLI updates
--nohooks ..... suppress executing hooks
                    (taking RegExp hook patterns as parameters)

Examples
cordova create myApp org.apache.cordova.myApp myApp
cordova plugin add cordova-plugin-camera
cordova platform add android
cordova plugin add cordova-plugin-camera --nosave
cordova platform add android --nosave
cordova requirements android
cordova build android --verbose
cordova run android
cordova build android --release -- --keystore="..\android.keystore" --storePassword=android --alias=mykey
cordova config ls

C:\Users\jacob>run
'run' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\jacob>cordova run
Current working directory is not a Cordova-based project.

C:\Users\jacob>

```

Figure 3: Original idea (without a website builder), a lot less user friendly

We decided to switch and use a website builder instead after much thought and discussion. Within our given timeframe, our ability to code and the ease of use of a website builder, we decided to swap to a website builder. Changing did not prevent us from meeting our criteria, so it was a good idea). Another lesson we also learned is that when letting a customer interact with your product you need to make it as easy as possible. Since our team members were the one who actually designed the website from the ground up we already knew all the pathways and things to do to get the website to work. However when we gave the prototypes to our friends we found they had difficulties navigating through the website. Even though in the lectures Dr. Knox went over the beginner's mindset; this was our first true experience with it. To improve we tried our best to make the steps as clear as possible so anyone can do it.

5.0 Conclusion

This deliverable has essentially given a user/student/client all of the steps and tools necessary to create our JAMZ A2L squarespace website. Each of the steps we took are carefully outlined and explained all of the steps in enough detail that anyone from any skill level can follow this guide.