

ZipApp - Orange Team

Cycle 1 Report

Authors

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COMP 4710 Senior Design

Auburn University Samuel Ginn College of Engineering

February 21, 2024

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2 - System Metaphor and Cycle Intent - Camden

System Metaphor:

The system metaphor for this app is similar to a digital “gameday caddy”. Just as a caddy in golf helps players by navigating them around the course while carrying their clubs, this app is a personal navigator through campus on football game days. With a friendly and intuitive interface, users can request rides from golf carts in the area to reach their desired destinations on campus with ease. This creates a quick, efficient, and hassle-free environment for fans from all over.

Cycle Intent:

The intent for this cycle is for all of our team members to gain a thorough understanding of the code base, and to establish working development environments to facilitate productivity throughout the semester. We will be exploring the possibility of having some developers target the Android operating system to verify whether or not the application is able to be run on the OS. Additionally, our team further intends to explore our options in bringing updates to the codebase, to ensure that the application can safely interface with current software versions. Finally, we plan to use any remaining time in this cycle to enumerate the tasks required to implement the features that our sponsor is interested in having added to their application.

3 - User Story Descriptions - Trevor

Infrastructure

1.0 Flutter Migration
Summary: As a user, I need to be able to use the app to work as intended with no security flaws.
Description: The current Flutter version used in the application from previous teams is Flutter 1.22.5. This is a major concern since Flutter has since released 2 major version updates which include null-safety checking, sunseting of old iOS versions (iOS 9 and iOS 10), and performance/security improvements. All of these are necessary to ensure the application works as intended and improves the security vulnerability risks.
Planned Hours: 8
Planned Hours this Cycle: 0
Actual Hours: 12

Actual Hours this Cycle: 0
Coder Names: Trevor Aupperle
Tester Names: Entire Team
Review Names: Entire Team
Status: COMPLETE

1.2 Operating Systems Check
Summary: As a user, I need to be able to use the app on the most recent versions of iOS and Android operating systems.
Description: After migrating to Flutter 3.0, we need to ensure we can run the app on simulators for different operating systems.
Planned Hours: 1
Planned Hours this Cycle: 1
Actual Hours: 8
Actual Hours this Cycle: 8
Coder Names: Ben Fisk, Camden Davis, Mohab Yusef
Tester Names: Entire Team
Review Names: Entire Team
Status: IN PROGRESS

1.3 flutter_facebook_login Package Migration
Summary: As a user, I need to be able to login to the app using my Facebook profile.
Description: The Flutter package, flutter_facebook_login, is no longer compatible with Flutter 3.0 and <u>has not been updated in over 4 years</u> . We need to find a new package that is capable of handling facebook sign-ins (we should probably use firebase_ui_oauth_facebook since it is specifically used in conjunction with Firebase and is built by Google).

Planned Hours: 6
Planned Hours this Cycle: 6
Actual Hours: 0
Actual Hours this Cycle: 0
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

1.4 geoflutterfire Package Migration to geoflutterfire2
Summary: As a user, I need specific geolocation features to work so that I can decide where to go and figure out where I am being picked up.
Description: The current geoflutterfire package is incompatible with newer versions of Firebase packages. We need to migrate to the more updated geoflutterfire2 package to handle the dependency issues. To do this, we will need to remove the package flutter_google_places and will need to find a replacement or build our own solution.
Planned Hours: 6
Planned Hours this Cycle: 6
Actual Hours: 0
Actual Hours this Cycle: 0
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

1.5 Find an Alternative to unicorndial Package
Summary: As a user, I need an intuitive and friendly user interface to interact with.

Description: There is a Flutter package, unicorndial, that is currently being used as a user interface component. However, it has not been updated in 5 years and no longer works with the new Flutter version. We need to find an alternative or build our own component.
Planned Hours: 4
Planned Hours this Cycle: 4
Actual Hours: 0
Actual Hours this Cycle: 0
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

1.6 stripe_payment Package Migration to flutter_stripe
Summary: As a user, I need a reliable purchasing system to make purchases on the app for the rides I request.
Description: Currently, the app uses the package stripe_payment to handle payments with the payment provider Stripe. Stripe has migrated to a newly updated package flutter_stripe. Changes need to be made in the app to handle the new package.
Planned Hours: 8
Planned Hours this Cycle: 8
Actual Hours: 6
Actual Hours this Cycle: 6
Coder Names: Ben Fisk
Tester Names: Entire Team
Review Names: Entire Team
Status: IN PROGRESS

1.7 Location Package Update
Summary: As a user, I need the app to request to use my location.
Description: Currently, the app uses the package Geolocator to handle getting the user's location. The old package is poorly implemented and out of date. Either the current package needs to be updated, or changes need to be made in the app to accommodate a new package.
Planned Hours: 8
Planned Hours this Cycle: 8
Actual Hours: 12
Actual Hours this Cycle: 12
Coder Names: Ben Fisk
Tester Names: Entire Team
Review Names: Entire Team
Status: IN PROGRESS

UI/UX

2.0 Figma Mockups
Summary: As a user, I need an intuitive and friendly interface to interact with.
Description: Currently, the user interface for the app is simply bad. We need to draw up high-fidelity prototypes in Figma to create a better UI/UX system for users.
Planned Hours: 12-14
Planned Hours this Cycle: 12-14
Actual Hours: 12
Actual Hours this Cycle: 12
Coder Names: Trevor Aupperle
Tester Names: Entire Team
Review Names: Entire Team

Status: IN PROGRESS

2.1 Implement UI Changes

Summary: As a user, I need an intuitive and friendly interface to interact with.
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Description: After mocking up prototypes in Figma and getting them approved by the sponsor, we need to implement the features in the code.
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Planned Hours: 12

Planned Hours this Cycle: 4

Actual Hours: 4

Actual Hours this Cycle: 4

Coder Names: Ben Fisk

Tester Names: Entire Team

Review Names: Entire Team

Status: IN PROGRESS

Functionality

3.0 Driver Directions Research

Summary: As a user (driver), I need to be able to see the best route to take customers to their desired destination.
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Description: We need to limit driver routes to streets that can accommodate golf carts legally (35 MPH or less) and also be able to show routes that will likely be “blocked” on game days for vehicles. We will have credentials to get through “blocked” roads. Need to take into account cost algorithms when researching.

Complete research of how we can accomplish this.
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UPDATE: We are going to attempt to use the Google Roads API to get speed limits for the roads being taken by the drivers. However, there is no API or easy way to create routes to a destination using speed limits as a parameter. We have contacted Google Support to see if a developer is willing to speak with us on the matter.
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Planned Hours: 12

Planned Hours this Cycle: 12
Actual Hours: 4
Actual Hours this Cycle: 4
Coder Names: Trevor Aupperle
Tester Names: Entire Team
Review Names: Entire Team
Status: IN PROGRESS

3.1 Driver Directions Implementation
Summary: As a user (driver), I need to be able to see the best route to take customers to their desired destination.
Description: We need to limit driver routes to streets that can accommodate golf carts legally (35 MPH or less) and also be able to show routes that will likely be “blocked” on game days for vehicles. We will have credentials to get through “blocked” roads. Need to take into account cost algorithms when researching.
Implementation of research conclusions from user story 3.0
Planned Hours: 12 - 16
Planned Hours this Cycle: 0
Actual Hours:
Actual Hours this Cycle:
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

3.2 Rider ‘On the Way’ Notification
Summary: As a user, I would like a notification about when my driver is going to arrive.

Description: Add a notification for the rider when the driver is on the way to pick them up with an estimated arrival time. Riders should see where the driver is while they are en route.
Planned Hours: 8
Planned Hours this Cycle: 0
Actual Hours:
Actual Hours this Cycle:
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

3.3 Rider Status
Summary: As a user (rider), I would like to be able to see where I am at in my ride on a map as the drive is occurring.
Description: Once a ride has begun, the rider should see the golf cart location on a map as it moves along the drive.
Planned Hours: 6
Planned Hours this Cycle: 0
Actual Hours:
Actual Hours this Cycle:
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

3.4 Rider Recap Screen

Summary: As a user (rider), I would like to see a recap of the ride I just took.
Description: Once a ride is over, a screen should be shown to the rider that summarizes their trip and costs. It should also prompt the user for a rating.
Planned Hours: 8
Planned Hours this Cycle: 0
Actual Hours:
Actual Hours this Cycle:
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

3.5 Drivers Near Me
Summary: As a user (rider), I would like to see where the nearest drivers are around my current location.
Description: Riders should be able to see current locations of carts around them on a map.
Planned Hours: 6
Planned Hours this Cycle: 0
Actual Hours:
Actual Hours this Cycle:
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

3.6 Feedback/Rating System

Summary: As a user, I need to be able to give feedback and rate both driver and riders after interactions with them.
Description: Implement a 5-Star rating system.
Planned Hours: 10
Planned Hours this Cycle: 10
Actual Hours: 10
Actual Hours this Cycle: 10
Coder Names: Camden Davis, Mohab Yousef
Tester Names: Entire Team
Review Names: Entire Team
Status: IN PROGRESS

3.7 Enhance Feedback and Tips Screen
Summary: As a user, I need a streamlined and engaging interface for feedback and tips.
Description: The current design doesn't have a feedback screen, which we've found to be less effective. The goal is to design, add a feedback screen and merge it with the tips screen so the rider can be able to rate and tip at the same time.
Planned Hours: 6
Planned Hours this Cycle: 6
Actual Hours:6
Actual Hours this Cycle: 6
Coder Names: Camden Davis, Mohab Yousef.
Tester Names: Entire Team
Review Names: Entire Team
Status: IN PROGRESS

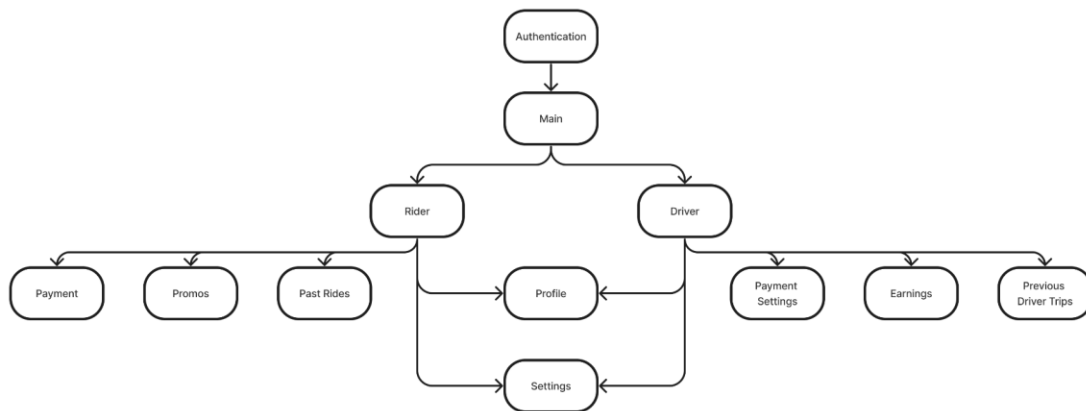
3.8 Display Past Trips
Summary: As a user, I would like to be able to see all of my previous trips as both a rider and a driver.
Description: Create a drivers past trips log and a riders past trips log.
Planned Hours: 12
Planned Hours this Cycle: 0
Actual Hours:
Actual Hours this Cycle:
Coder Names:
Tester Names:
Review Names:
Status: NOT STARTED

4 - Design Documentation - Mohab

Architecture

The Zip application is designed to act as a service to bring college football fans to and from stadiums on game days via golf carts. This idea stems from the desire of fans to have a method of transportation into crowded areas where cars are not permitted to drive. The application hinges on user-profile based interaction. Each user will have their own profile for either reserving rides or offering driving services. A user that logs into their rider profile will have access to reserving and paying for a ride, their ride history, and promotions going on at the current time. A user that logs into their driver profile will have access to their payment settings, their earnings, and previous trips they have driven. Both riders and drivers will have access to their general profile and settings.

See below a diagram depicting the flow of a user's action inside the Zip app.

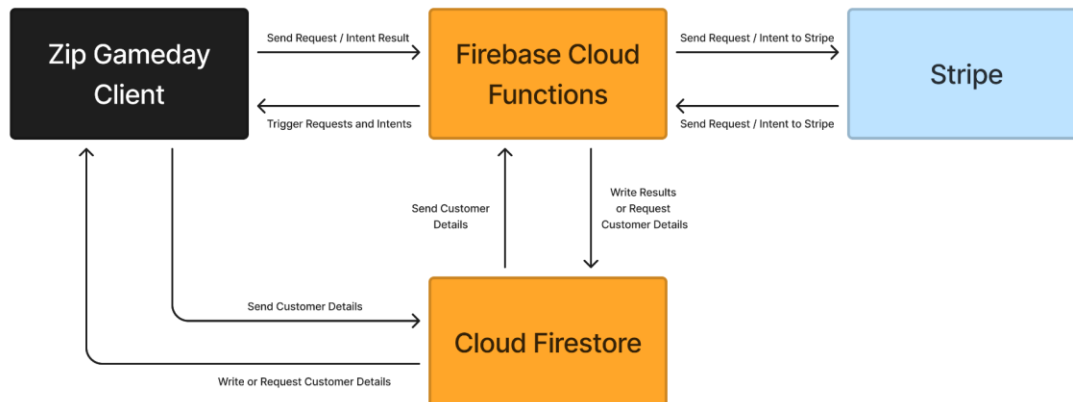


Structure

The application is built using the Flutter framework. Flutter was built by Google to leverage the Dart programming language to build applications. The combination of Dart and Flutter is designed to allow applications to be installed and run on both the IOS and Android operating systems.

Interfaces

The application will make use of Google Firebase and Cloud Firestore for database, authentication, and cloud services. It will also be using Stripe to handle transactions between riders and drivers. These services necessitate an internet connection for the app's functionality. See below a diagram depicting the interactions between the Zip application, the Firebase cloud services, and the Stripe transaction service.



Justification of Decisions

The decision was made to use Flutter, because applications made with Flutter can be run on IOS and Android. The decision was made to use Google Firebase and Cloud Firestore because the database and authentication services they provide would be difficult to recreate from scratch given the scope of this project. The decision was made to use Stripe for similar reasons, in addition to the concern of security as it pertains to conducting monetary transactions.

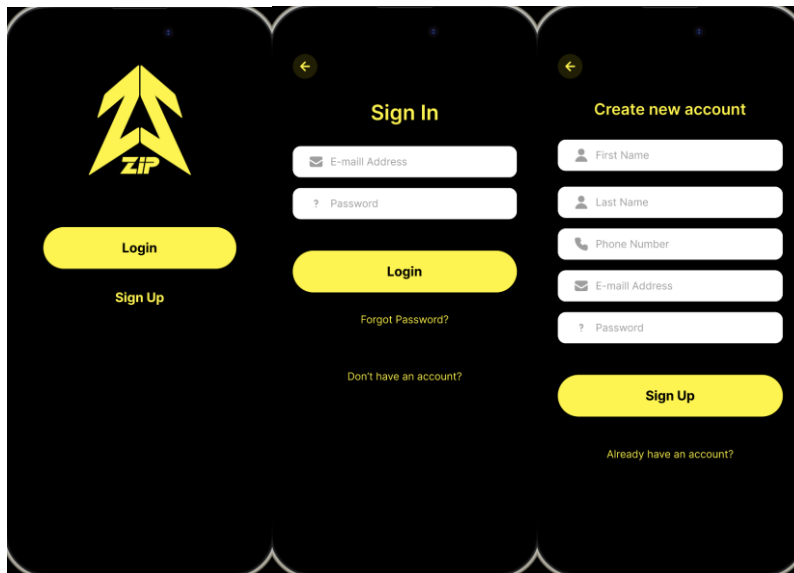
Assumptions and Other Dependencies

This application depends heavily on an internet connection for all aspects of its operation. From the user's login to the reservation of rides to the exchange of payment, the app will not function without being connected to the internet.

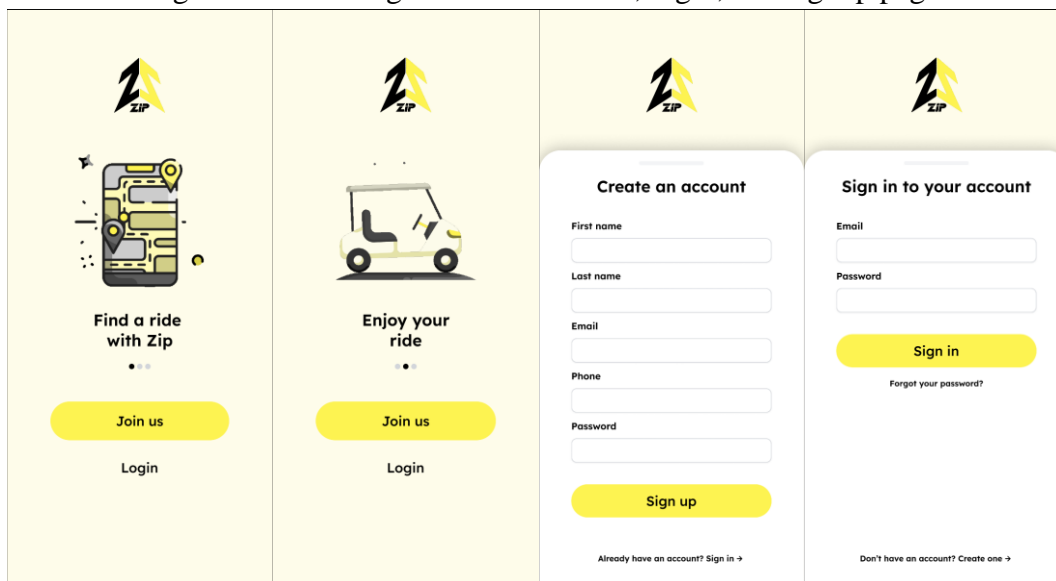
User Interfaces

The current user interface is outdated and inconsistent. Therefore, we decided to update the user interfaces using Figma to create high-fidelity prototypes that create a more modern and intuitive interface.

The following is the current design for the welcome, login and signup pages:



The following is the new design for the welcome, login, and signup pages.



5 - Lessons Learned - Camden

Over the course of the architectural spike and the first cycle, we have learned several lessons. One thing we have learned is how important it is to establish working, efficient communication amongst our team members, between our team and the ZipApp blue team, and with the sponsor. Some of the weeks we have had better communication, and those weeks have been more productive as a whole. Therefore we will be focusing a lot on communication moving forward. One of the main challenges we have faced so far is getting the application in its current state (from the previous team's code base) to simulate correctly. We quickly figured out the

infrastructure for the application was outdated and poorly maintained. Our decision was to upgrade/fix the infrastructure of the application before attempting to make any more features. In making this decision we learned a lot about the migration process to newer versions of packages and SDKs. We also learned through this process that it is better to upgrade to major versions sooner rather than later. Because the other teams before us put these upgrades off, we were forced to fix major areas of the application, which delays us in attending to our sponsors goals for this semester. We have learned from this that moving forward, our decisions need to be better documented, and we need to look ahead when making these decisions so that future teams have more support. Finally, throughout the code base we found many instances of code that was poorly written; commented out lines of unused code; print statements that print critical information about the state of the app to the console; API keys directly in the code rather than in a .env file; and code that was completely unused. This is unacceptable in software development and it taught us that we need to implement a plan to have code reviews before pushing code to the code base. Therefore, we have decided that code cannot be pushed to the code base without at least one person (preferably two people) reviewing the code. This will ensure the code base is maintained properly, has minimal security risks, and is easily readable for future development.

6 - Test Results - Ben

General Plan

We have decided to handle tests in terms of user stories. We will be handling the testing of each user story as its implementation is completed, and we will make sure to test each user story as a team to ensure thorough coverage.

Test Cases

1.0 Flutter Migration
Description: Ensured the application runs smoothly on the latest versions of Android and iOS. All tests passed, verifying the app's compatibility with Flutter 3.0 and the successful migration of outdated packages.
Tester Names: Entire Team
Status: TEST PASSED

1.1 Geo-Location for Android
Description: The application's geo-location feature is functioning as expected on Android devices. We

were able to successfully request and use location data to facilitate ride requests and navigation for users. This confirms that the app's integration with the Android operating system's location services is properly configured and operational.

Tester Names: **Entire Team**

Status: TEST PASSED

1.2 Geo-Location for IOS

Description: We encountered a significant issue when attempting to run the geo-location feature on iOS devices. Despite the application working flawlessly in other aspects, the geo-location functionality fails to initialize, preventing the app from accessing and utilizing location data. This error severely impacts the app's core functionality on iOS devices, as it hinders the ability to accurately track and navigate users to their desired destinations on game days.

Tester Names: **Entire Team**

Status: TEST FAILED

1.3 Flutter_Stripe Package Migration for Android

Description: Migrating the payment system to the most up-to-date package required significant updates to the package management system and overall project. Some problems were encountered in making these updates, but the application is now working on Android.

Tester Names: **Entire Team**

Status: TEST PASSED

1.4 Flutter_Stripe Package Migration for IOS

Description: Migrating the payment system to the most up-to-date package required significant updates to the package management system and overall project. Some problems were encountered in making these updates, and the IOS configuration is still in development.

Tester Names: **Entire Team**

Status: TEST FAILED

7 - Management Plan - Trevor

General

For the management of our project, we will be using Git for version control. We will also be in close contact with the Zipapp blue team, to ensure that no work is duplicated and no conflicts arise.

Task Assignments

We will be using Jira to communicate and manage tasks for the team. We will also be communicating via email and Groupme for meetings and other non-technical purposes. We plan on approaching the tasks for this project as a team to begin with, and then assigning tasks to individuals as we see fit based on the ease with which the task can be completed. This will allow everyone on the team to gain an understanding of each task and then make an informed decision on which and how many people should work on that task.

Development Schedule

Our team will be meeting weekly to discuss our progress, and we will have weekly or biweekly meetings with our sponsor, depending on the sponsor's wishes. These frequent team meetings will allow our team to stay on the same page, and also to move on to new tasks as old ones are completed. The meetings with our sponsor will allow us to keep them up to date, and ensure that our development of the application aligns with their vision.

8 - Memoranda - Mohab

Meeting - January 25th

Date: 01/25/2024

Time: 5:30 PM - 6:30 PM

Attendees: Trevor Aupperle, Ben Fisk, Camden Davis, Mohab Yousef, Russell Anderson, Paxton Delamar

1. Introductions - we all introduced ourselves including our background and experience.
2. Business Idea - Russell explained where the business idea originated (i.e. working with the football team to drive recruiters around game days on a golf cart)
3. 4 Main Tasks - Russell described the 4 main tasks that he and Paxton would like to see accomplished this semester.
 - a. Driver Directions
 - b. Rider Side Visuals
 - c. Feedback/Ratings

- d. Display Past Trips
- 4. Infrastructure Concerns - Trevor brought up concerns about the current state of the project's infrastructure being outdated and incompatible with current operating systems (iOS and Android). Both teams (orange and blue) had been unable to get the app simulated in its current state. Therefore, we needed to spend time updating the infrastructure packages. Russell understood and agreed that was important to fix before moving forward.
- 5. Questions - We shortly discussed some general questions before ending the meeting.

Meeting - January 26th

Date: 01/26/2024

Time: 3:30 PM - 5:00 PM

Attendees: Trevor Aupperle, Ben Fisk, Camden Davis, Mohab Yousef, Nico Marthe, Zach Grindle, Jordyn Lewis

- 1. Discussion - Both the Orange and Blue team for ZipApp met to discuss user stories and how we were going to communicate with each other during the semester. We set processes in plan to avoid confusion about how to merge code when working on the same codebase (i.e we will be doing code reviews in GitHub).

Meeting - February 16th

Date: 02/16/2024

Time: 3:30 PM - 4:00 PM

Attendees: Trevor Aupperle, Ben Fisk, Camden Davis, Mohab Yousef, Russell Anderson, Paxton Delamar

- 1. Updates - We discussed our team's progress on the project since the last meeting.
- 2. Figma Mockups - Trevor displayed his mockups for the sign-in screen and account creation pane to Russell.
- 3. Maps API Constraints - Trevor discussed actions to take to solve the problem of routing drivers through roads that have speed limits within the required range.

Meeting - February 20th

Date: 02/20/2024

Time: 3:30 PM - 4:30 PM

Attendees: Ben Fisk, Camden Davis, Mohab Yousef, Nico Marthe, Zach Grindle

1. Stripe Migration - Ben discussed with Nico the status of the migration to the new Stripe payment package.
2. Repository State - Everyone discussed the state of the repository and which branches need to be reviewed.

9 - Source Code - Ben

Link to source code: <https://github.com/benjaminfisk/ZipApp>

10 - Presentation Slides - Mohab

Link to Cycle 1 presentation slides: [Cycle 1 Presentation](#)

11 - Previous Cycle Docs and Grade Sheets - Camden


Previous Cycle Documents



Link to Architectural Spike written report: [Architectural Spike Written Report](#)






Link to Architectural Spike Presentation Slides: [Architectural Spike Presentation](#)

12 - Sponsor's Approval and Meetings - Ben

Sponsor Approval Screenshot:


 Ben Fisk




 Reply  Reply all  Forward  

To: Russell Anderson <russell.anderson@zipgameday.com> Wed 2/21/2024 2:12 PM

Cc: Paxton Delamar <paxton.delamar@zipgameday.com>

 Cycle 1 Written Report.docx
1 MB






Hello Russell,






Hope your day is going well! We have finished putting together our report for cycle 1 (please see attached), and we would greatly appreciate it if you could send us your approval of it by the end of today. If you have any questions, please let me know!


Thanks,

Ben Fisk

 Russell Anderson <russell.anderson@zipgameday.com>



To:  Ben Fisk Wed 2/21/2024 3:10 PM

Cc: Paxton Delamar <paxton.delamar@zipgameday.com>

CAUTION: Email Originated Outside of Auburn.

Hey Ben,

All looks good, thanks for passing along. Approved!

