Project ID Number: INDY 3- Red “The” Drinkinator

Course number: 4850-02

Assignment: Final Report

Spring 2024

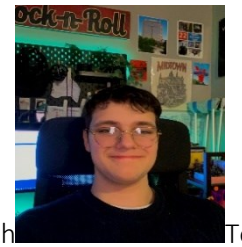
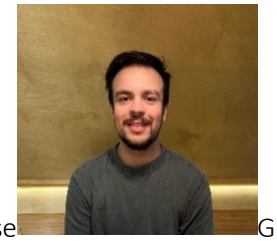
04/27/2024

URL: https://msmith876.github.io/Indy-03-red-/

Lines of Code: 23,595

Number of Components: 3

GitHub: https://github.com/Indy-03Red/CS-Senior-Project-2024

 Maximus Smith  Toby Mose  Grayson Payne

Project Team

Roles	Name	Major responsibilities	Cell Phone / Alt Email
Project owner	Faculty Member	N/A	N/A
Team leader	Maximus Smith	Documentation and project submission & code testing	770-851-6070 m2max735work@gmail.com
Team members	Toby Mose	App development and project submission/Documentation review	404-747-0951 Toby.mose@gmail.com
	Grayson Payne	App development and project submission/Documentation review	706-968-0626 paynegrayson@gmail.com
Advisor / Instructor	Sharon Perry	Facilitate project progress; advise on project planning and management.	770-329-3895

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Table of Contents

Introduction

Abstract

The "Drinkinator" app is designed to revolutionize the way users explore and discover their favorite drinks. Built with the goal of providing a personalized drink recommendation system, the app allows users to delve into a vast array of mixed drinks tailored to their unique preferences.

To achieve this vision, the project aims to develop a cross-platform mobile application using React Native, ensuring compatibility across different devices and operating systems. Leveraging TypeScript for robust and type-safe development, the app will implement a comprehensive recommendation system that considers user tastes and preferences.

Key functionalities of the app include the ability for users to record and transcribe meeting notes within the application, enhancing productivity and convenience. Firebase, Google's mobile and web application development platform, will be integrated for efficient database hosting, ensuring seamless interaction with the app.

Throughout the development process, various design constraints and functional requirements have been identified and addressed. From implementing an intuitive and visually appealing user interface to ensuring cross-platform compatibility and easy connectivity to Firebase, the project is committed to delivering a seamless and user-friendly experience.

In conclusion, the "Drinkinator" app represents a groundbreaking endeavor in the realm of drink exploration and recommendation. By combining cutting-edge technology with user-centric design principles, the app promises to revolutionize the way users discover and enjoy their favorite beverages. The "Drinkinator" project aims to develop a cross-platform mobile application using React Native and TypeScript, providing users with a personalized drink recommendation system. The application will allow users to explore various mixed drinks based on their preferences.

Project Plan

Milestone Events And Tasks

- Project Design
- Prototype
- Launching Application

Meeting Schedule Date/Time

- Meetings on Wednesday 8:30pm – 9:30pm
- Meetings on Saturday 4pm- 6pm

Collaboration and Communication Plan

These items focus on your internal team collaboration, communication, and meetings (with or without project client and instructor).

- Communication channels Microsoft teams (most project related conversations and meetings)
- Imessage GroupChat (emergency contact for confusion on work or quick questions)
- Regular meeting plan Microsoft,
    - Wednesday 8:30-9:30, Saturday 4-6pm
    - Main notary: Maximus Smith*
- What tool or platform are you using for communication and file sharing?
    - Microsoft Teams – Within the “files” tab select upload, you’re able to attach messages that will contain: date submitted, what the document is, what its for etc

- Establish the regular status/progress update policy reporting to the client Weekly- done by The team at the Saturday Meeting

Project Schedule and Task Planning

- Version Control Plan (DISCUSSION) : After creating a SR project group github these are the steps we will take to ensure proper version control:

- Implementing Gitflow: to ensure the management of feature development as well as bug fixes and release versions.
- Descriptive commit changes: Making sure to convey the purpose and changes made to the project in each commit to better trace bugs when they happen and keep a record of project "history"
- Continuous Integration & Frequent Commits & pull requests: In order to make sure we aren't submitting giant blocks of new code to the project there will be frequent commits in order to piggy back off of the use of gitflow and our descriptive commits to better track bugs or problems with the code.
- Version Numbering: in order to make sure each commit is following the correct current version of the project each commit tag will include the version number that the commit is using

Project Name:	Indy-3-Red Drinkinator																	
Report Date:	4/11/2024																	
					Milestone #1				*Milestone #2*				*Milestone #3*				C-Day	
Deliverable	**Tasks**	**Complete%**	**Current Status Memo**	**Assigned To**	**09/02**	**09/09**	**09/16**	**09/23**	**09/30**	**10/07**	**10/14**	**10/21**	**10/28**	**11/04**	**11/11**	**11/18**	**11/25**	**12/02**
Requirements	Meet with stakeholder(s) SH	50%	Delayed but complete	Bob, Sam	20	12	5											
	Define requirements																	
	Review requirements with SH	10%		Bob		10	15											
	Get sign off on requirements	0%	Will add more figures	Tom			5	10	4									
Project design	Define tech required *	0%		Bob				10	4									
	Database design	0%		Harry, Tom				5	10	10								
	X design	0%		Harry, Tom						10	10							
	Y design	0%					6	6	10	5	5							
	Develop working prototype	0%								10	10							
	Test prototype	0%		Tom							5	10	5					
Development	Review prototype design	0%										8	5	10				
	Rework requirements	0%										8	10	20	20			
	Document updated design	0%													10	10		
	Test product	0%												8	5	20		
Final report	Presentation preparation	0%														15	10	10
	Poster preparation	0%																10
	Final report submission to D2L and project owner	0%																5
			Total work hours	**396**	**20**	**22**	**31**	**31**	**28**	**35**	**30**	**26**	**20**	**38**	**35**	**45**	**10**	**25**

* formally define how you will develop this project including source code management

Legend	
Planned	
Delayed	
Number	Work: man hours

Requirements

1.0 Introduction

1.1 Overview

- The "Drinkinator" app aims to provide users with a personalized drink recommendation system. Users can explore a variety of mixed drinks, wines, and beers based on their preferences.

1.2 Project Goals

- Develop a cross-platform mobile application using React Native.
- Utilize TypeScript for robust and type-safe development.
- Implement a comprehensive recommendation system for mixed drinks, wines, and beers.
- Enable users to record and transcribe meeting notes within the app.
- Integrate Firebase for efficient database hosting.

1.3 Definitions and Acronyms

- Firebase: Google's mobile and web application development platform.
- Tag Table: A database table holding Tag IDs and descriptors to pair user tastes with beverages.
- 2NF: Second Normal Form, a level of database normalization.
- React Native: A framework for building mobile applications using React.

1.4 Assumptions

- Users have access to an internet connection for seamless interaction with Firebase.
- Future meetings are scheduled to start at 8 AM.
- There is an existing API for retrieving cocktail information.

2.0 Design Constraints

2.1 Environment

- The app will be developed using React Native and TypeScript.
- Firebase will be used for database hosting, resembling Google's version of AWS.

2.2 User Characteristics

- Users may have varying levels of familiarity with mobile applications.
- Users are interested in exploring and discovering new drinks based on their preferences.

2.3 System

- Pricing constraints may apply after reaching a certain database capacity on Firebase.

3.0 Functional Requirements

- R.1.0 Launch Page
- R 1.1*:* Users can choose their preferred drink tastes.
- R 1.2: Drink Flavor Checkboxes Screen
- Submit Button
- R 2.0: After selecting tastes and flavors, users can submit their preferences.
- *R 2.0.1* Clicking the "Submit" button initiates the recommendation process.
- Results Screen
- R 3.0: Upon submission, users are redirected to the Results Screen.
- *R 3.0.1:* The Results Screen displays a column featuring 3 drinks at a time of recommended drinks based on user preferences.

3.0 General Functional Requirements

3.1 Design Requirements

- 3.1.1: Implement an intuitive and visually appealing user interface.
- 3.1.2: Display three drink recommendations on a single page.
- 3.1.3: Integrate universally agreed-upon pictures for drinks.

3.2 Graphic Requirements

- 3.2.1: Incorporate graphics for mixed drinks, wines, and beers.
- 3.2.2: Implement adjectives and ingredients tables for filtering.

3.3 Operating System Requirements

- 3.3.1: Develop the app using React Native for cross-platform compatibility.
- 3.3.2: Ensure easy connectivity to Firebase for both iOS and Android.

4.0 Non-Functional Requirements

- 4.1 Security
- 4.1.1: Implement secure authentication for user accounts.
- 4.1.2: Ensure the confidentiality of meeting notes and user preferences.
- 4.2 Capacity
- 4.2.1: Be aware of and plan for pricing implications when the database capacity reaches a certain threshold.
- 4.3 Usability
- 4.3.1: Design an easy-to-use interface for users with varying levels of technological proficiency.
- 4.3.2: Enable users to record and transcribe meeting notes effortlessly.
- 4.4 Other
- 4.4.1: Include a feature to track and display previously purchased drinks.

5.0 External Interface Requirements

5.1 User Interface Requirements

- 5.1.1: Include filters for users to include or exclude certain ingredients.
- 5.1.2: Ensure a user-friendly interface for an enjoyable experience.

5.2 Hardware Interface Requirements

- 5.2.1: The app should be compatible with standard mobile devices (iOS and Android).

5.3 Software Interface Requirements

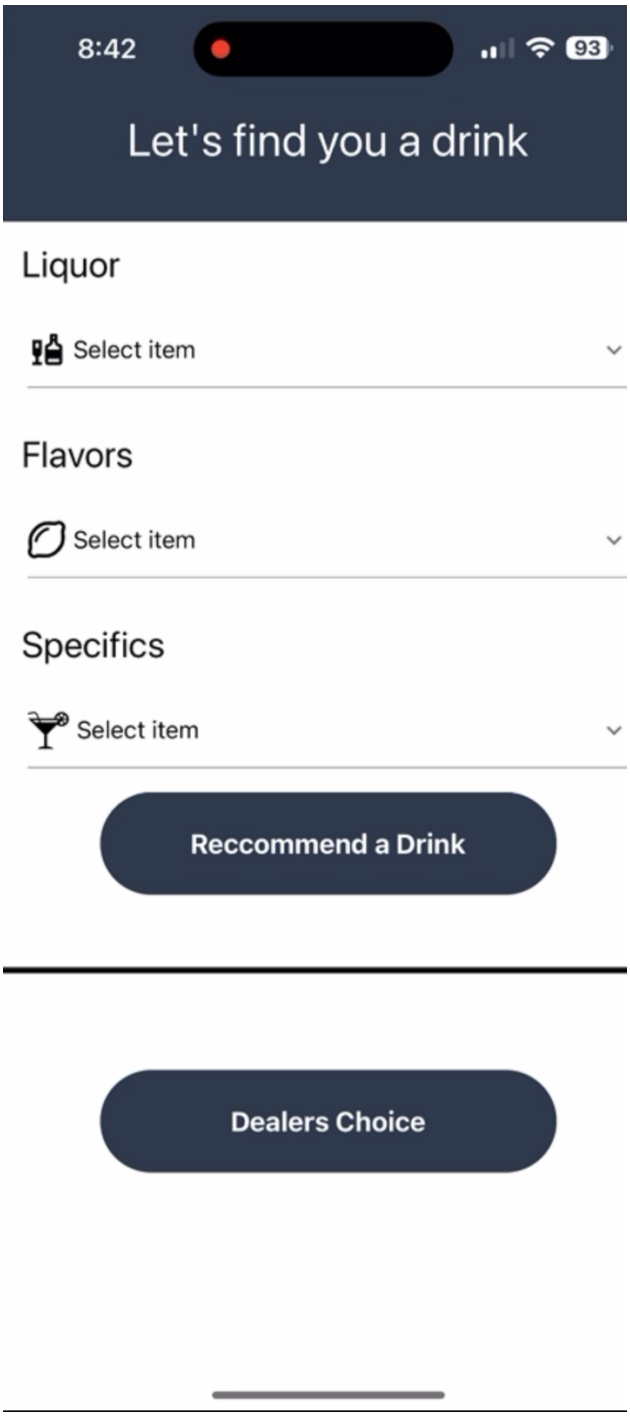
- 5.3.1: Utilize Firebase for hosting the database.
- 5.3.2: Integrate with the existing API for retrieving cocktail information.

5.4 Communication Interface Requirements

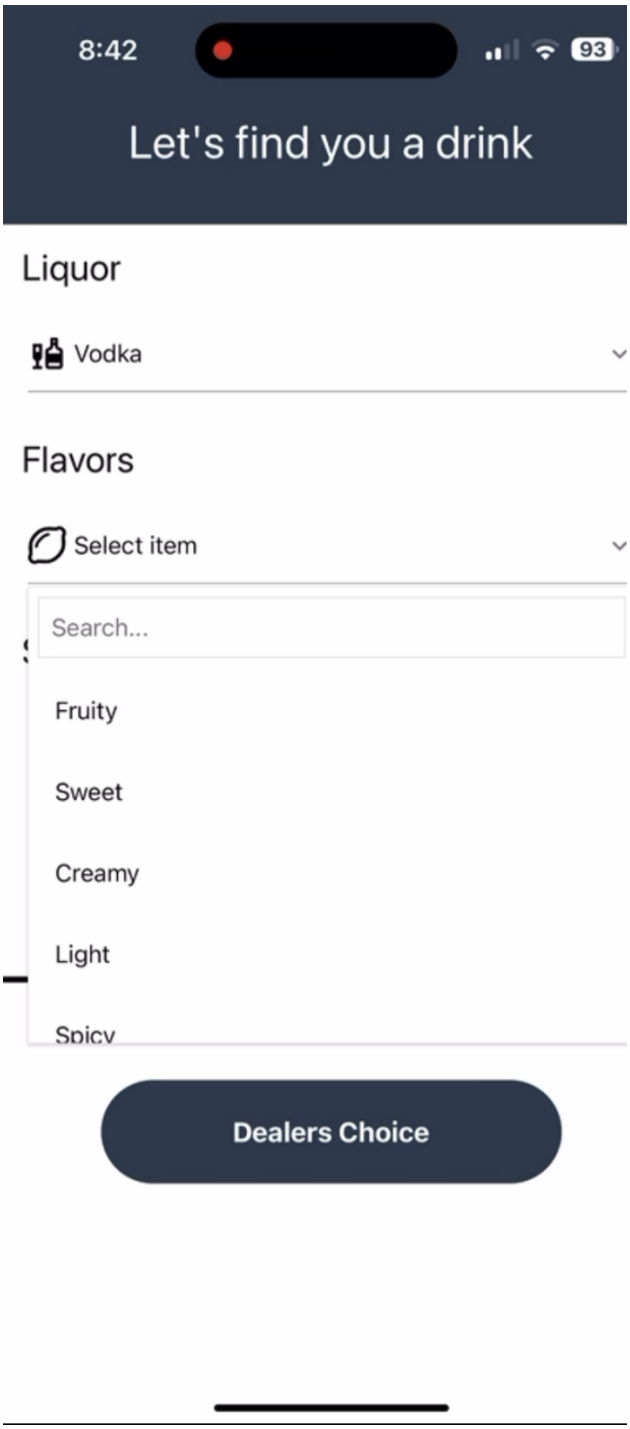
- 5.4.1: Ensure seamless communication between the app and Firebase for real-time data updates.

Design

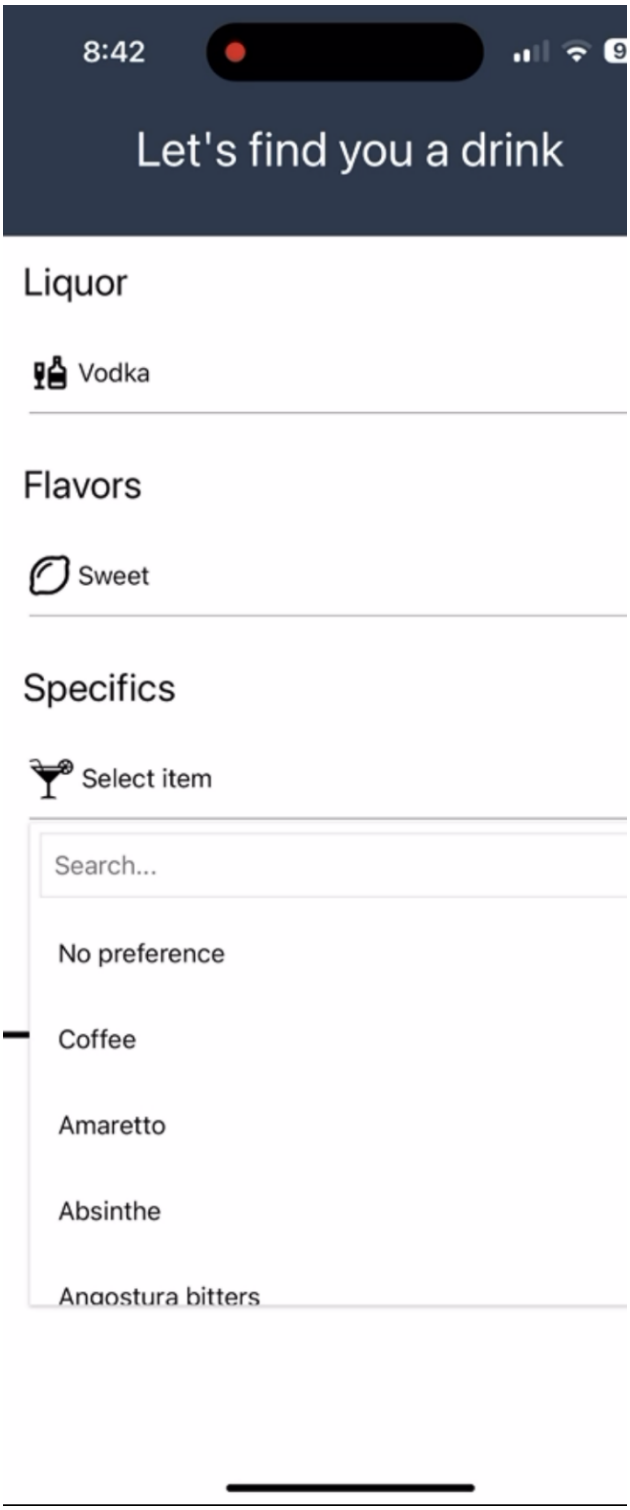
Home Screen with a “lets drink” button that takes you to the next screen where the user selects their preferences



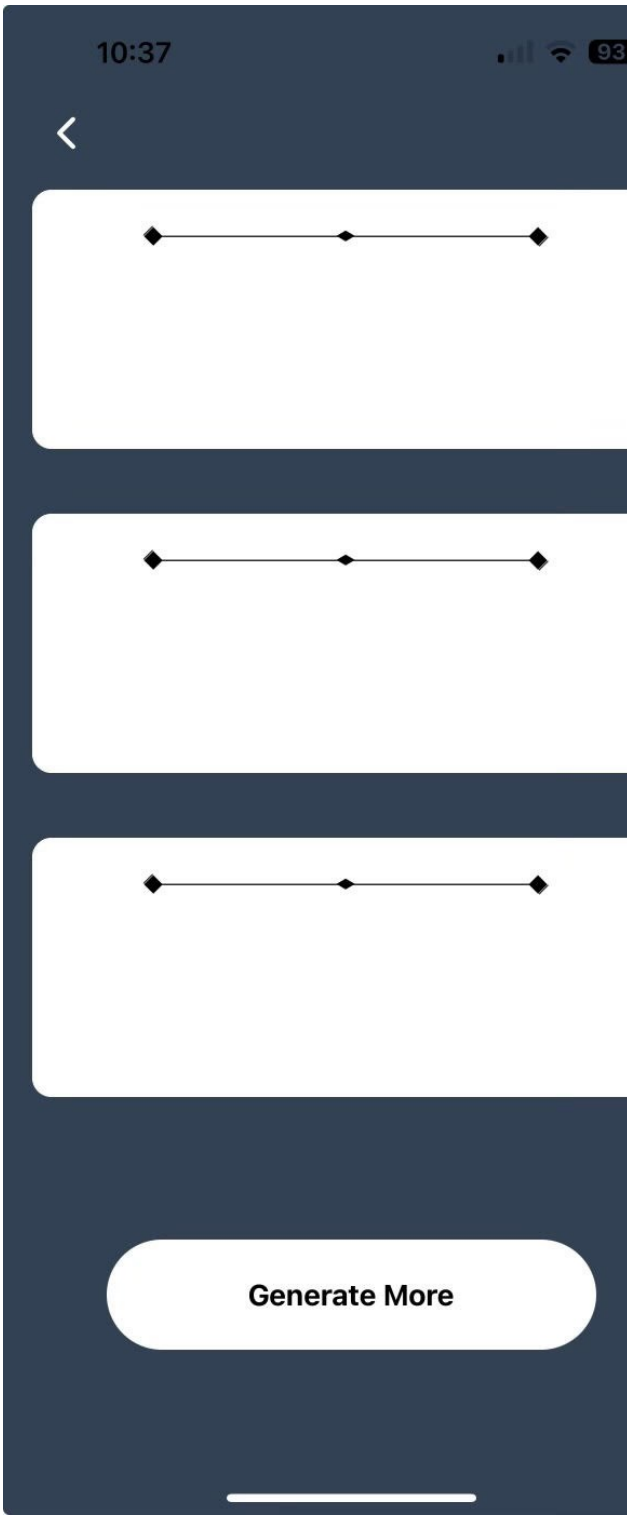
Second “Home screen” where the user interacts with the drop down menus and there is a “recommend a Drink” button as well as a “dealers choice button” that randomly displays three different drinks.



What the screen looks like with the Flavors drop down menu open.



What the screen looks like with the Specifics drop down menu open.



The screen that appears after the user selects either the “Recommend a drink” button or the “dealers choice” button. In the three boxes the drinks and their ingredients will be displayed

Narrative discussion

Grayson Payne

When starting the react native tutorial, I felt a little overwhelmed to say the least. After completing it, I honestly had no idea where to start. I was unsure how to get an app up and running, especially with the libraries I wanted to use. I started watching some YouTube videos and that's where I found a YouTuber that I had an easy time learning from. From this, I was able to start building demo apps and eventually start working on what the final product is today!

As I worked on building the front end, I was faced with many choices on how to tackle different aspects of it. The main library that we used was NativeWind. This was used all throughout the code as a supplement to StyleSheets, which is what react native uses to style. This gave us access to all CSS styling and made it a lot more efficient!

We used various other libraries to help our project succeed. It was challenging to pick which libraries should or shouldn't be used, but my main goal was to use whichever had the most documentation. An issue that we ran into was using the ReactNativeDropdown library. I believe was the main cause of our backend issues.

For the backend, Toby did most of the work, but I did work with setting up the Firebase connection, which we struggled with for a while. After getting the firebase connection figured out, Toby wrote the main query. Currently, the query works and we are still continuing to finish the project!

Toby Mose

This project was a lot of fun to work on! The first challenge was deciding on a framework for our app and then learning how to use it pretty much from scratch. We all have had a little JavaScript experience and Grayson had worked with react before, but not in the way we were using it. Grayson took care of developing the UI for our app, creating the dropdown elements that store our filter options. I decided to tackle the back end, working with Alyssa from Indy-03 Purple to create our Firestore database. We were not very experienced in database architecture, so it ended up being very simple and a little janky. Towards the end of this project, I realized that the way our tags were stored and organized was super unhelpful for fetching the drinks for the user.

The part that took the most of my time was getting the API calls from our app to Firebase to work correctly, I spent hours debugging and reading the documentation and finally managed to get it to pull drinks from the database. Once that had been figured out, I set to work refining the fetch script to ensure that all the filters are checked and that there are no null entries or errors. This also took a while to get dialed in, I used console logs to print the information at different steps of the query to keep an eye on what was happening. Eventually I got that to work and now the app can take the filter strings and get all the drinks matching those filters from the database. The final piece of the puzzle was connecting the backend to the frontend.

We had a lot more trouble connecting front to back than we expected. You would think that an object that stores a label and a value would allow you to read said value, but that is apparently not the case. It

wasn’t super difficult to get the recommend button to run my fetch method when clicked, but to get the values from the filter dropdowns and use them as parameters ended up being a nightmare. I tried for hours, doing different variations of state management, message passing, importing, and exporting. I consulted dozens of stack overflow threads and reddit posts, ChatGPT 4.0 got me the closest to the solution, I wasn’t getting any errors, and it was recognizing that the parameters existed but It just wasn’t getting the right value for them. Unfortunately, we never got it to function, so for our demo at C-Day our app didn’t work. That was a little disappointing, but we got some amazing feedback and ideas from everyone who visited our booth that has re-kindled our enthusiasm for this idea and hopefully we will keep developing it outside of school!

Maximus Smith

Deciding on the requirements for our application was initially a challenge for us. Even with three minds at work, it was difficult to narrow down the scope and functionalities of the app. Fortunately, we received valuable assistance from another group in a different section of the course. They had already thought through many aspects of the project, which helped us refine our focus. Ultimately, we decided to narrow our project scope to include only mixed drinks, as the variability of beers and wines posed challenges that we weren't equipped to handle.

When I first did the React Native tutorial, I found myself initially out of my depth because of my lack of experience. However, with the help of Toby and Grayson, I navigated through the learning process. Initially unsure of how to kickstart the app development process, particularly with the selection of libraries, we turned to online resources for guidance.

Once we had clarified the project scope, the design phase came naturally to us. We aimed for simplicity, envisioning an interface that would be intuitive for users, especially in busy environments like bars or restaurants. The application features three dropdown menus as well as a “dealers choice button”, allowing users to specify their preferences for liquor, flavors, and any additional add-ons. These dropdowns serve as filters to streamline the selection process from the database of over 400 drinks. The “dealers choice” button allows for the user to generate a random drink without any preference when it comes to taste or types of liquor.

As the project progressed, my role shifted to documenting and ensuring the group remained on task. I maintained clear records of progress, decisions, and challenges. I documented the development process, meeting minutes, project requirements, and any modifications. I also facilitated regular meetings to discuss progress, address obstacles, and realign priorities. Maintaining open communication and fostering collaboration ensured everyone remained focused on their tasks and contributed effectively to achieving project goals.

While my primary focus was on documentation and project management, I also provided support to my teammates whenever needed, offering insights and assistance to overcome any hurdles they encountered. By taking ownership of these responsibilities, I helped to streamline our workflow and fostered a cohesive and productive working environment, ultimately contributing to the success of our project.

Challenges

Throughout the project, we encountered a myriad of challenges that tested our skills, patience, and problem-solving abilities. From the initial stages of planning to the final implementation, each phase presented its own set of hurdles that required careful navigation and collaboration to overcome.

One of the most significant challenges we faced was the decision-making process regarding the project's scope and requirements. Despite having three minds at work, narrowing down the functionalities of the app proved to be a daunting task. We initially struggled to define the project's objectives and determine the features that would be feasible within our resources and timeframe. Fortunately, with the assistance of another group in a different section of the course, we gained valuable insights that helped us refine our focus. Their input allowed us to streamline our project scope, focusing solely on mixed drinks to avoid the complexities associated with beers and wines.

Another major challenge arose during the development phase, particularly in the implementation of backend functionalities. Toby's experience in tackling the backend proved invaluable, but we still encountered hurdles along the way. Issues with setting up the Firebase connection and refining the fetch script for retrieving drinks from the database posed significant obstacles. Hours were spent debugging and reading documentation to ensure the API calls functioned correctly. Despite our efforts, we faced difficulties in connecting the backend to the frontend, ultimately leading to setbacks in the app's functionality during the demo at C-Day.

On the frontend, Grayson encountered challenges in navigating the React Native framework and selecting appropriate libraries for development. The initial feelings of overwhelm gradually subsided as he delved into tutorials and online resources to familiarize himself with the platform. However, issues with library compatibility, particularly with the ReactNativeDropdown library, added complexity to the frontend development process. Despite these challenges, Grayson's perseverance and dedication to mastering the framework were evident in the final product's intuitive user interface.

Throughout the project, maintaining effective communication and collaboration among team members was paramount to overcoming challenges. Regular meetings were held to discuss progress, address obstacles, and realign priorities as needed. Despite the setbacks encountered, our ability to adapt, communicate openly, and support each other ultimately enabled us to navigate through the challenges and deliver a functional app.

Conclusion / Summary

As our time in senior project ends, reflecting on our journey reveals the collaborative effort and dedication that went into its development. Each member of our team brought unique perspectives and skills to the table, contributing to the project's success in different ways.

Grayson's journey from feeling overwhelmed at the start of the React Native tutorial to confidently developing the app's UI demonstrates his perseverance and growth throughout the project. His expertise in front-end development, particularly with libraries like NativeWind, significantly influenced the app's user interface, making it intuitive and visually appealing.

Toby's experience in tackling the backend challenges, from setting up the Firebase connection to refining the fetch script, was instrumental in ensuring the app's functionality. Despite encountering obstacles, such as difficulties with API calls and connecting the backend to the frontend, Toby's determination and problem-solving skills were crucial in overcoming these hurdles.

Maximus's role in refining the project's scope and defining its requirements highlights the importance of clear direction and focus. His efforts in streamlining the project's objectives, particularly by narrowing down the scope to include only mixed drinks, contributed to a more manageable and achievable goal.

Despite encountering challenges along the way, such as difficulties in decision-making and implementing backend functionalities, our collaboration and perseverance ultimately led to the development of a functional app. While we may not have achieved all our initial goals, the feedback and ideas received from our demo at C-Day have rekindled our enthusiasm for the project. Moving forward, we are excited to continue developing and refining the app, leveraging the lessons learned from this experience to drive future success.

SDLC Description

Our project journey began with the initiation phase, where we faced the challenge of defining the project scope and requirements. We collaborated to outline the objectives and functionalities of our application. Despite initial difficulties in narrowing down the scope, guidance from another group in the course helped us refine our focus, leading to a clearer understanding of our project goals.

During the planning phase, each team member assumed roles and responsibilities based on our skills and expertise. Toby took charge of backend development, working closely with Alyssa from Indy-03 Purple to set up the Firestore database. We utilized libraries like NativeWind for efficient CSS styling. However, challenges arose in selecting and integrating appropriate libraries, such as the ReactNativeDropdown library, which impacted backend functionalities.

As we progressed into the execution phase, we encountered technical challenges in connecting the backend to the frontend. Toby dedicated extensive time to debugging API calls and refining the fetch script for retrieving drinks from the database. Despite our efforts, issues with parameter passing persisted, leading to setbacks in functionality during our demo at C-Day.

Throughout the SDLC, effective communication and collaboration were essential for overcoming challenges and maintaining project momentum. Regular meetings facilitated discussions on progress, obstacles, and realignment of priorities. Maximus played a crucial role in documentation and project management, ensuring clear records of our development process and facilitating team coordination.

Despite encountering setbacks, our enthusiasm for the project remained high, fueled by the valuable feedback and ideas received during the demo. Moving forward, we aim to address the remaining challenges and continue developing our application outside of school, guided by the lessons learned throughout the SDLC.

Source code

CS-Senior-Project-2024-main.zip