The Design Studio: Magicshop App

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Web Front End Technologies SE_20
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Background:

The Design Studio is a small team of PM/Designer and Developers with an aim to provide eCommerce support for traditional businesses in Berlin. Our target market includes restaurants, food shops, small retail stores, and businesses that are in need of websites and mobile apps for online transactions and digitalization.

The mobile application was developed with React Native/Redux, hosted with Firebase and Firestore as the database. It will use the stripe API to process payments, but this feature is not yet implemented. It is designed to run through Expo with an IOS Phone simulator.

The Process

During the planning phase, I was unsure which framework to use for the mobile app. I tried to check online sources and the learning sources available in Code. There were too many options but I narrowed them down based on two things: 1. My current technical skill and 2. The compatibility with multiple devices. This was the reason I chose React Native. Because I had the opportunity to work with Javascript on a previous backend project, I felt it would be more convenient to try using it on a frontend/mobile app project. I had to learn React first and tried to build simple web applications using Firebase as well. The applications are found here:

https://challenge-cbffe.firebaseapp.com/ https://whatsapp-10f9d.web.app/rooms/ex9BsSYDao9JIGSlPMgn

I have learned that React is primarily used in building single page applications and reusable components. In a web application, it interacts with the DOM and instructs what to render on the client side. Redux on the other hand is a library used to manage state, update actions and store. Class Based components used to be the convention, but some companies moved to function based components now with the integration of hooks. When I felt that I already have a solid understanding of React, I decided to start learning React Native.

The transition was very difficult at first. I had a problem installing the Android Studio on my device, hence this app was only simulated with an IOS mobile device. The next challenge was integrating the react native, some components version and the expo simulator. I

encountered some issues on incompatible dependencies and had to do research on what works best.

Another adjustment that I had to make is the css part. Before all the static files are stored in a separate folder. In the mobile app however, they are normally inside the components. Creating the navigation was also not as simple as a web application nav bar. The mobile app is also very particular with enclosing components inside a scrollview for multiple contents. I also had to understand the underlying process of how a React Native app works. My understanding is that the Javascript code is compiled with a Java or Objective C code through ReactNative Bridge that can work on an Android SDK and IOS SDK respectively.

Additional Learnings

I also had the chance to explore another Library which is MOBX State Tree by doing a simple TV application in TVOS. The difference between Redux and MOBX State tree is that the latter is simpler, equally performant but easier to learn. When I was first learning Redux, I was confused with the data flow and unsure which files to look at: store, action or reducer. However with mobx state tree all the state related code can be found in one file. All I need is to define an observable state and simply access that state in components. The only downside that I can see is that there are very limited resources available for Mobx state tree, which I also needed when I had questions about bugs and certain implementations.

Areas for Improvement

When I first developed this application, I used a free tier service in Firebase. However the free tier is very limited and has expired. At the moment, I would need to find a another database for storing the items on a longer term. Another thing is I have only limited functionality such as logging in, adding/editing items in the store and checking out options. I would still need to incorporate a payment api for ordering items and a tracking page to view the transactions.

Conclusion

In totality I will give myself a Level 0 for this module because I feel that I have a basic knowledge in mobile app development by using a Framework like React Native. However, I will still need to have a deeper understanding on how some built in features work eg using the phones camera, sensors etc.