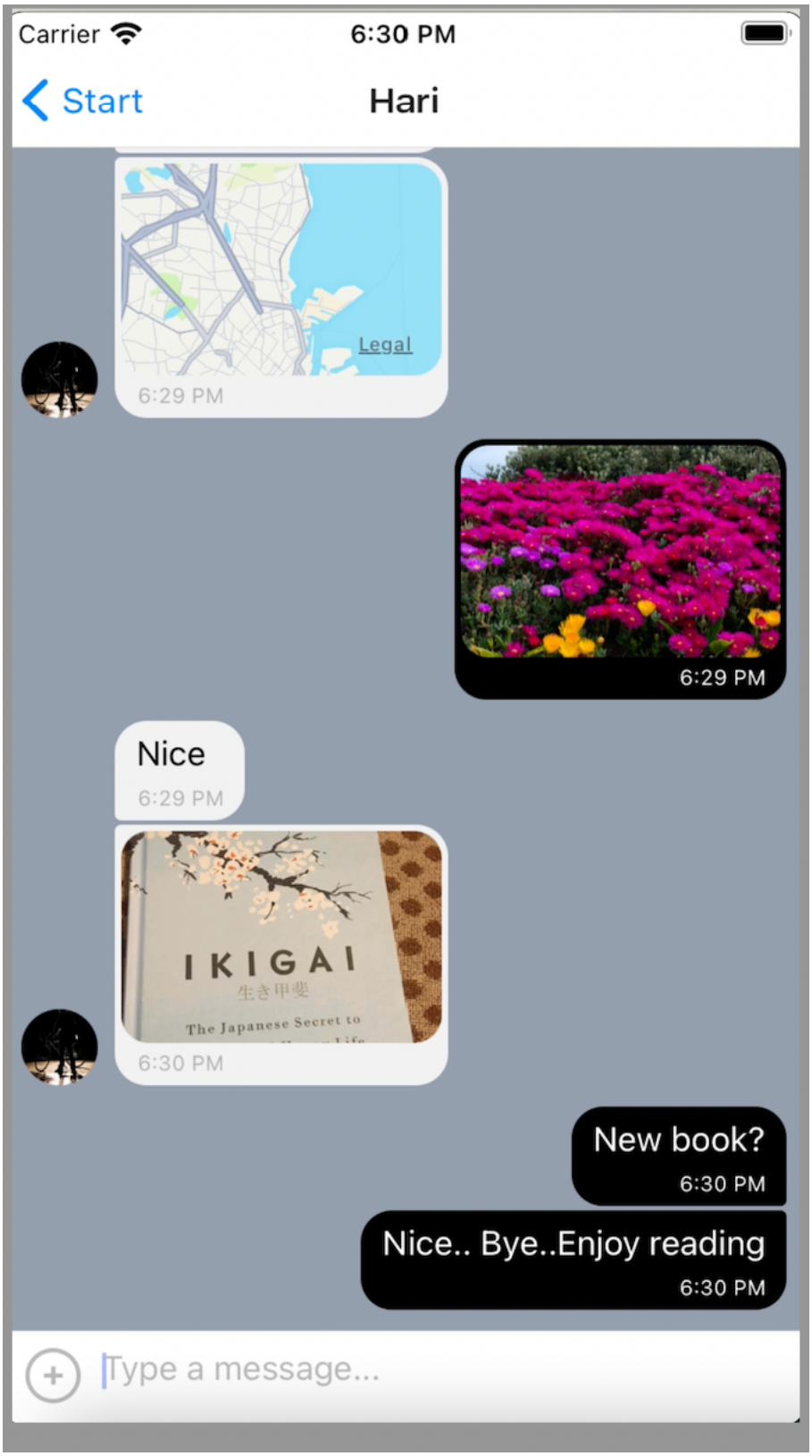
Case Study for React Native Mobile Chat app project



Overview

Chat is a React native app, developed with Expo, Gifted-chat library and Google Firebase for the database, authentication & cloud storage services , that allows user to participate in a mobile chat with option to share their images and locations.

Purpose & Context

I built this project in the context of a CareerFoundry course to master full-stack web development. The purpose of the project was to introduce React Native Technology which allows developing mobile apps with Javascript and React.

Objective

The aim of the project was to have an ambitious React Native project that I can add to my professional portfolio to demonstrate my knowledge of Javascript mobile development. The problem I wanted to solve was to build a chat app for mobile devices that provides users with a chat interface and options to share images and their location using Expo.

Tech Stack/Tools

React Native/Expo/Gifted Chat/Google Firebase / Android and iOS Simulators

Duration

It took two weeks to finish the whole project.

Credits

Big thanks to my tutor Jonathan Nshuti and my mentor Treasure Kabarabee for their guidance and support throughout the project. A special thanks to Theano Eirirni Kakaziani for her constructive feedback on this case study.

Approach

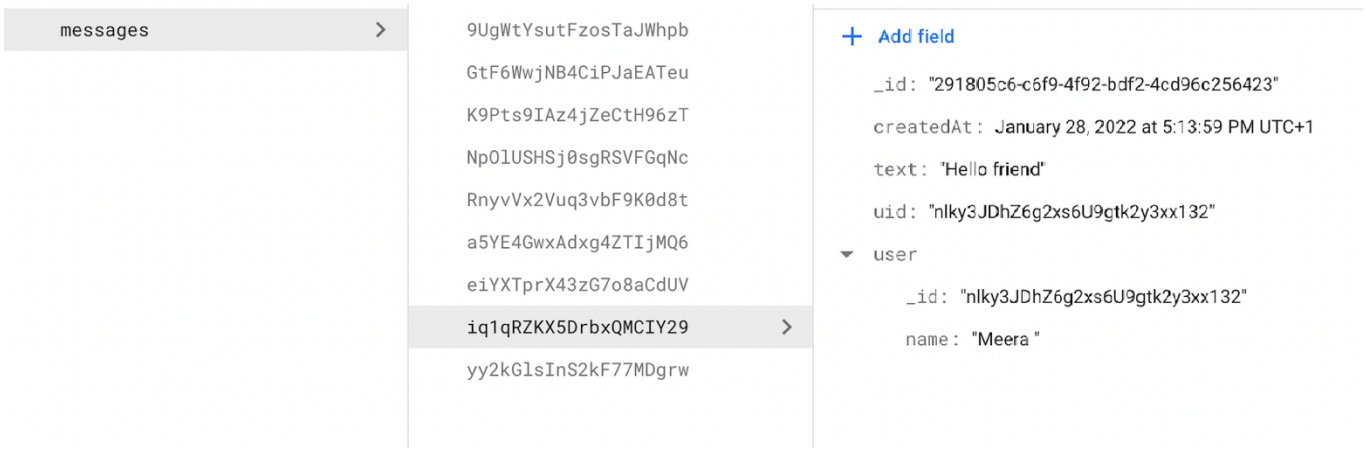
I used a tool called Expo to develop and test Chat React Native app. Expo provides a Software Development Kit, which is a set of application development tools that synchronises the project with the device and the emulator. After installing all necessary tools and emulators, I created the main app pages and navigation.

```
<NavigationContainer>
  <Stack.Navigator initialRouteName="Start">
    <Stack.Screen name="Start" component={Start} />
    <Stack.Screen name="Chat" component={Chat} />
  </Stack.Navigator>
</NavigationContainer>
;
```

I used Gifted-chat package to incorporate basic chat capabilities for the app. It is a React Native library created specifically for developing chat apps and very similar to other popular chat applications and contains customisable elements like chat bubbles, media upload, input field, avatars etc and the documentation of Gifted chat library is really good.

```
<GiftedChat
    renderBubble={this.renderBubble.bind(this)}
    renderInputToolbar={this.renderInputToolbar.bind(this)}
    renderActions={this.renderCustomActions}
    renderCustomView={this.renderCustomView}
    messages={this.state.messages}
    onSend={messages => this.onSend(messages)}
```

Google Firebase, a data storage platform for native apps was utilised to manage real-time data transfer between user and database and the authentication of users. In Chat app I implemented anonymous user authentication. Use of Firebase eliminated need to write backend code for database queries. Along with Firebase datastore, React native's asyncStorage API is implemented in the chat app to store data on user's mobile devices. This allows user to retrieve messages from Firebase when online and from local storage when offline.



I utilised Expo functionalities to allow users to upload images from their phone, take picture and are location. Google cloud storage is used to store user's images so they can be viewed by other chat participants.

```
//allow user to pick image from phone library
pickImage = async () => {
    ///permission to access media library
    const { status } = await ImagePicker.requestMediaLibraryPermissionsAsync();
    try {
        if (status === "granted") {
            let result = await ImagePicker.launchImageLibraryAsync({
                mediaTypes: ImagePicker.MediaTypeOptions.Images,
            }).catch((error) => {
                console.error(error);
            });
            if (!result.cancelled) {
                const imageUrl = await this.uploadImage(result.uri);
                this.props.onSend({ image: imageUrl });
            }
        }
    } catch (error) {
        console.error(error);
    }
};
```

Conclusion

The React Native application was an appropriate introduction for developing mobile application and I learned quite a lot while working on this project.