Speech-to-Text Application

To create a mobile application that allowed the conversion from Speech to Text, the platform used was React-Native. The benefit of using React-Native is that the component can be used for iPhones and Android devices. For the creation of the tool, the module *react-native-voice* was used, which records sound from the microphone of the device and converts it in real-time. This node module used for this application is based on a Recurrent Neural Network (RNN). On pressing the start button, the application starts to listen for any voices to recognize and converts them to text whilst it is still listening. As soon as the user stops speaking and no voices are recognized, it ends the process. For each sentence that it hears, it outputs a list of 5 different sentences that may be close to what it heard. In the application, only the closest one has been set to be displayed, but the others can be displayed on the screen too. Since the majority of the code that makes this work is present in the file *App.js*, users can view these additional possible sentences by opening that file and rendering the variable *state.previous*. If users want to add another sentence to their previous voice transcription, they can press the start button again and then whatever is heard will be added to the existing transcription. Users can cancel a conversion whilst it is being made and can delete the previous transcription too, using the buttons next to the start button.

Instructions on how to run the application successfully are as below:

1. Install Node JS on your machine using this link
2. Setup React Native and Android Studio using the *React Native CLI Quickstart* method given here
3. You can either use an emulator that you installed with Android Studio or your own android device by connecting it to your system via cable (instructions here).
4. Open a command window in the main folder for the application
5. Enter the command *npm install* to install all dependencies
6. Enter the command *react-native run-android*