

Getting started with React-Native

What you need:

To get react native up and running you need the following software installed on your computer.

Github Account + either a GUI or CLI Interface to use it.

node.js

Android Studio + Java JDK or XCode (depending on Android or iOS development)

a code editor (i suggest Sublime Text 3)

Please fork the code from following repository:

<https://github.com/asalm/Production-Planning-Game>

Here's an extended tutorial on how to get this all done on Windows or Ubuntu

<https://habiletechnologies.com/blog/getting-started-react-native-complete-setup-guide/>

Importing and running the App

Since i only deployed this app for android, im going to guide you through the process of importing it in Android Studio and getting it to run.

Step 1: Start Android Studio

Step 2: Click on File -> Open and navigate to the Android folder inside the repository folder since this is the project structure android studio is able to read.

Step 3: Click okay to open the project

Step 4: Wait until gradle has finished building.

Step 5: Start an Android Emulator
I suggest the Nexus 9 with at least API 25

Step 6: Head into the terminal and navigate to the parent directory of the Android folder with

```
cd ../
```

Step 7: Run `npm install`

Step 8: To get the project running in the emulator put following line into the console

```
react-native run-android
```

Troubleshooting

For some reason the node.js server which translates the javascript to java code sometimes crashes while deploying. This could have 2 reasons. Reason 1 is that your javascript code is faulty. Check weather your code is properly formatted and does not have open brackets. Fix your errors and try to run the command again.

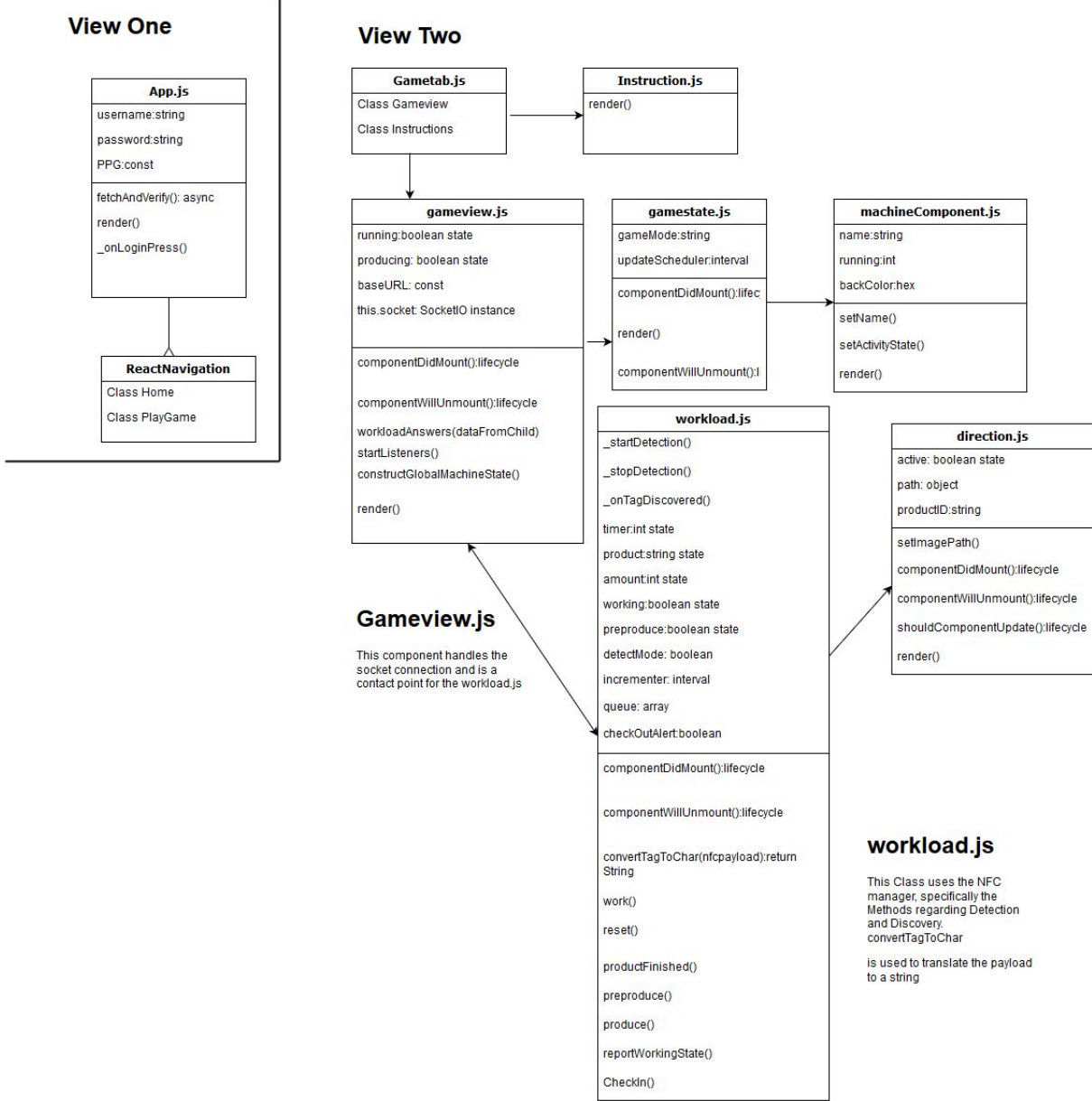
Reason 2 is that it just crashes without any cause, just try again until it works out (most it took me was 3 attempts)

Useful links:

<https://facebook.github.io/react-native/docs/tutorial.html>

<https://socket.io/docs/#>

Technological documentation



Class Diagram for the application

How does the NFC work

For NFC to be integrated inside react-native, i used a package called [react-native-nfc-manager](#). It covers the integration for JAVA and SWIFT and gives the React Application a way of accessing the NFC information coming from the device. The most important methods are startDetection and stopDetection which basically give the application a pointer for what happens when an NFC Tag is discovered. The Method onTagDiscovered then allows to handle the information coming from the NFC Tag. onTagDiscovered has an Object which contains the NFC Tag information. The information which is interesting for our application is inside the NdefMessage[].NFCPayload[] and gets translated by the function convertTagToChar which returns a string from the given nfc-object. For an iOS integration check the documentation on Github on how to get the nfc-manager set up in SWIFT. The methods used should still work out of the box.

How do the sockets work

The component gameview.js holds the instance for the socket integration. The function startListeners() instantiates the listeners for all the different calls coming from the server and handles different inputs by passing information to the Gamestate and the Workload Components. For example a production order gets sent to the application. It then handles the Product and Amount and passes this to the workload.js files produce() method.

For all replies to the server, the function callbackParent is passed to the workload.js as a property and therefore usable. If a production is finished or started, the method callbackParent gets called from within the Child-Component and passes the required values like time, machine, amount and product back to the Parent which then emits a socket-call to the server.

Styling

Styling components and elements in React-Native is handled by the style.js file which contains a data structure similar to CSS. That way you can import the style.js into whatever component you would like to use and just refer to the elements inside the style.js to apply styles for Containers, Texts, Text Boxes or even Images.