Setting up your environment

Important Notes:

In order to participate successfully in the seminar you have to follow the steps of this manual.

Furthermore it is necessary to have your mobile phone and a connection cable for your laptop with you.

**If you are an Apple user you will also need a developer account to run the app on your Iphone.**

If you use any different versions of the OS describe in this document there might be some small adjustments you will need to figure out on your own.

Inhalt

Windows 10

1. Head to https://nodejs.org/en/download/ and get the newest stable version of node.js (windows installer) and install it.
   We use LTS Version 10.14.2

2. You need to setup your environmental variable for the use of npm (node package manager) to install plugins need for the hector seminar.
   Press the windows button and search for *"Environment Variables"* on german OS *„Systemumgebungsvariablen".*
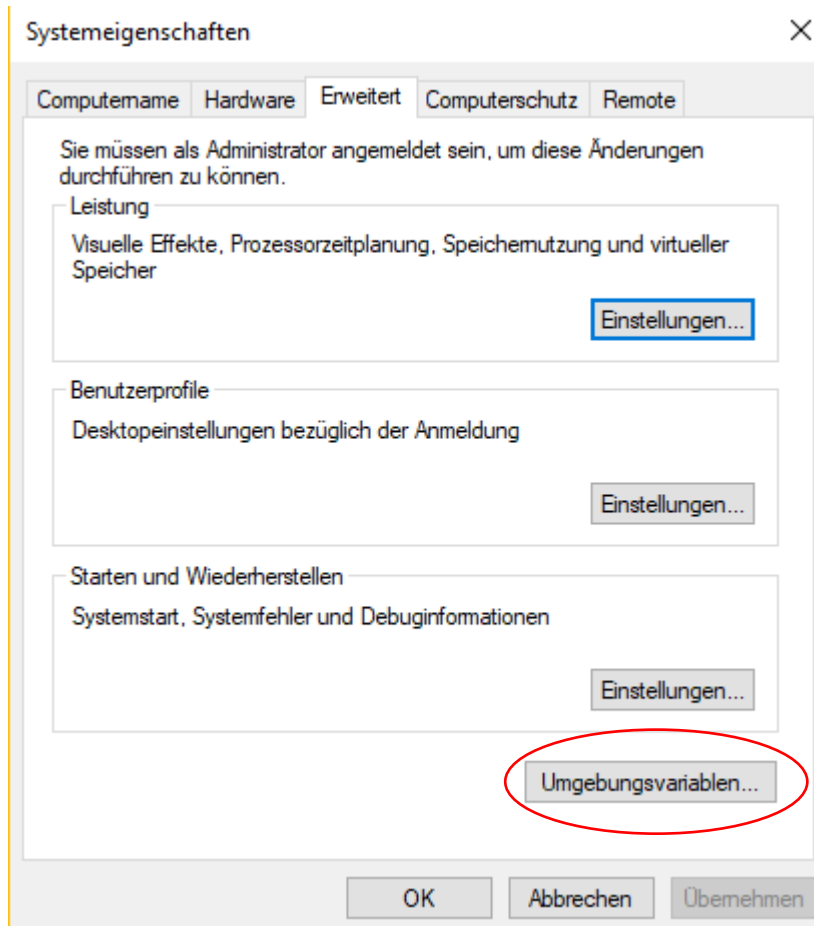
3. Double-Click on the button within the red circle and select path (green circle, shown in the picture below)

Umgebungsvariablen

Benutzervariablen für jan.christoph

Variable	Wert
ChocolateyLastPathUpdate	Mo Sep 24 11:33:20 2018
OneDrive	C:\Users\jan.christoph\OneDrive
Path	C:\Users\jan.christoph\AppData\Local\Microsoft\WindowsApps;C:...
TEMP	C:\Users\jan.christoph\AppData\Local\Temp
TMP	C:\Users\jan.christoph\AppData\Local\Temp

Neu...　Bearbeiten...　Löschen

Systemvariablen

| Variable	Wert
ChocolateyInstall	C:\ProgramData\chocolatey
ComSpec	C:\WINDOWS\system32\cmd.exe
configsetroot	C:\WINDOWS\ConfigSetRoot
DriverData	C:\Windows\System32\Drivers\DriverData
FSHARPINSTALLDIR	C:\Program Files (x86)\Microsoft SDKs\F#\4.1\Framework\v4.0\
JAVA_HOME	C:\Program Files\Java\jdk1.8.0_161
NUMBER_OF_PROCESSORS	4

Neu...　Bearbeiten...　Löschen

OK　Abbrechen

4. Click on edit Text (blue circle in the picture below) to put in the path of node.js
   In my case it is: *C:\Users\jan.christoph\AppData\Roaming\npm*

   For **Windows 7** in you might need a second path added as well (installation folder of node.js):
   C:\Program Files\nodejs
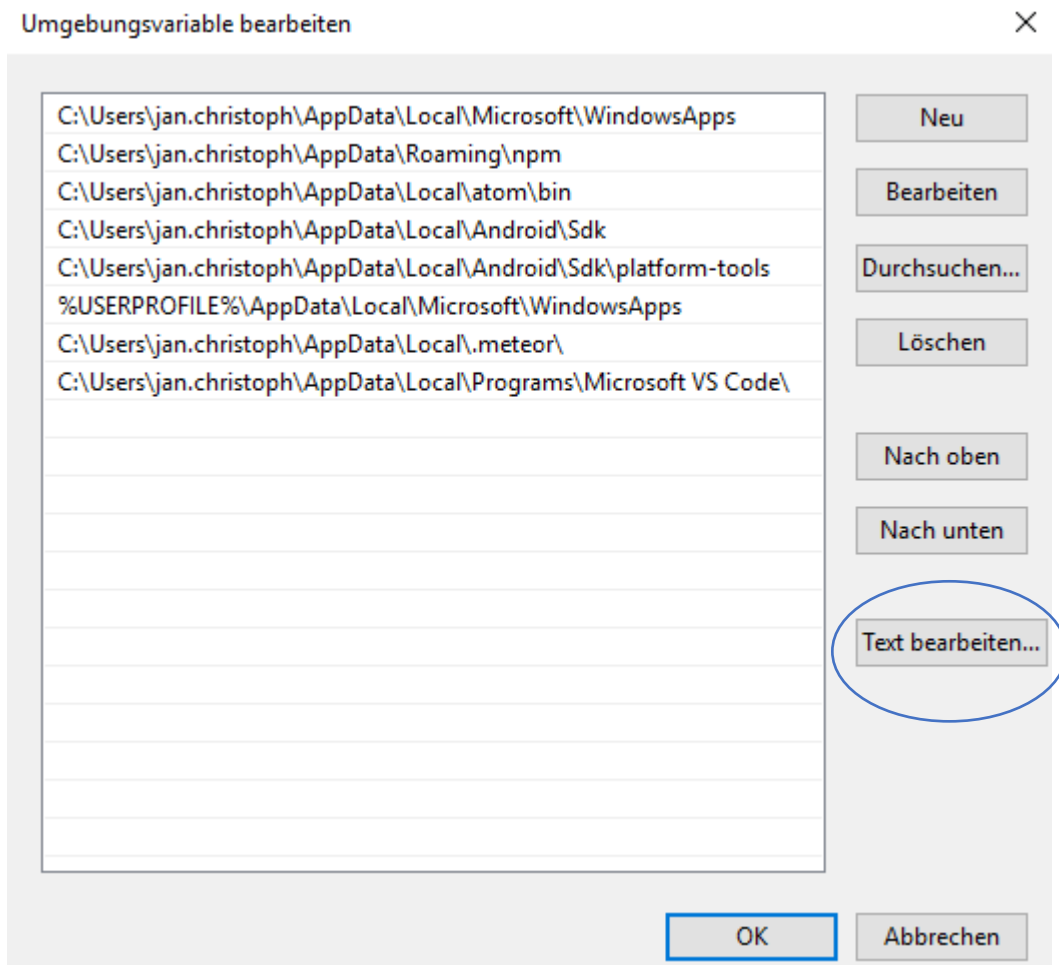
Try if node is installed correctly by open the console (press windows button and type "cmd") and use the following commands:

```
node -v
npm -v
```

You should then see something similar to this:

5. The next step is to install the java sdk which is needed to run android studio and to develop the app for android.

   Keep in mind you can't develop apps for iOS on Windows!!!

   https://www.oracle.com/technetwork/java/javase/downloads/jdk11-downloads-5066655.html follow the link, accept the license agreement (yellow circle on the picture below)

6. Furthermore, you need to install Git to be able to use our starter template by follow this guide:
    https://www.linode.com/docs/development/version-control/how-to-install-git-on-linux-mac-and-windows/

and download the version which fits your system (64 bit or 32 bit; you can find that with a rightclick on your windows symbol in the taskbar → "*System*")

7. Furthermore, you should set the JAVA_HOME environmental-variable as shown in the image below
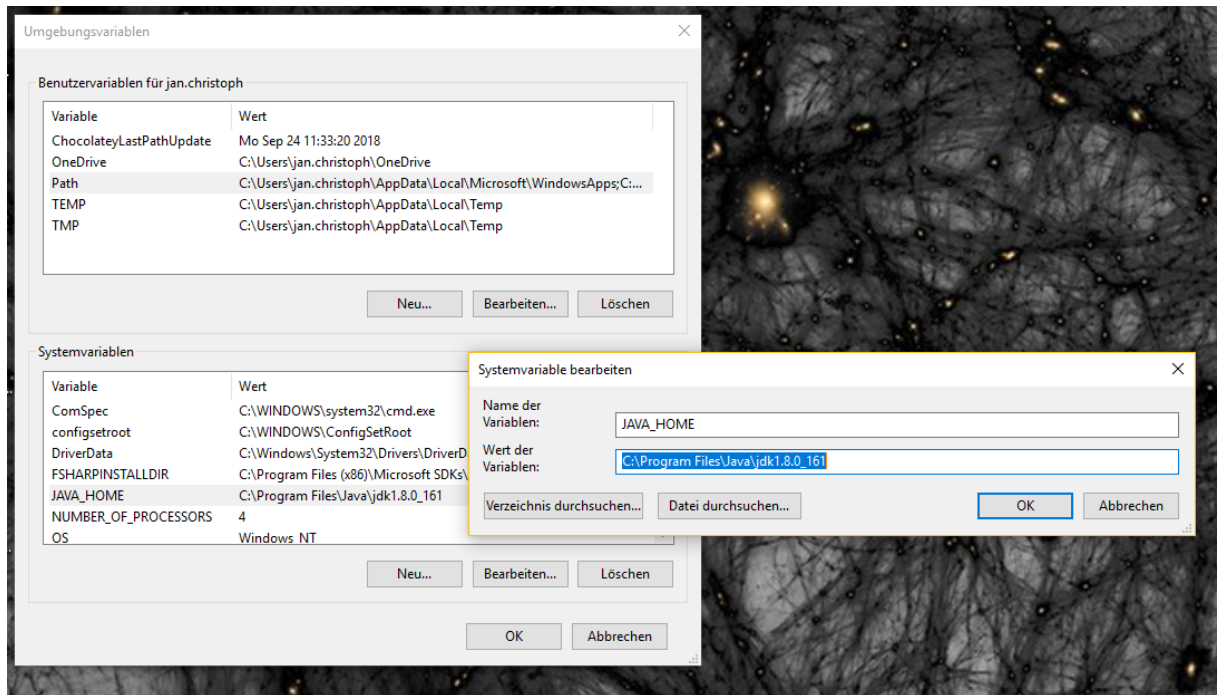
You can check if everything has worked as expected by using:

```
java -version
```

And then you should see something like:

8. Install Android Studio from https://developer.android.com/studio/ and follow the instructions.
9. After the installation head to the SDK Manager built in Android Stuido (See picture below, pink circle)
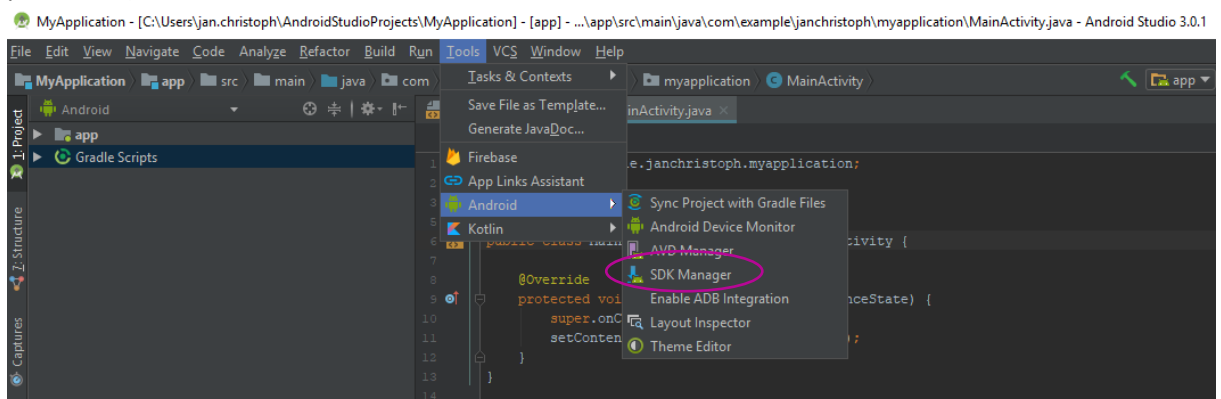
10. Here you need to install and update SDK Platforms and SDK Tools.
    Must have:

SDK Platforms	SDK Tools
Android API 28	Android SDK Build-Tools
Android P Preview	Android SDK Platform-Tools

Android API 27	Android SKD Tools
Android 8.0	
Android 7.1.1	
Android 7.0	

It should then somehow look like the following picture
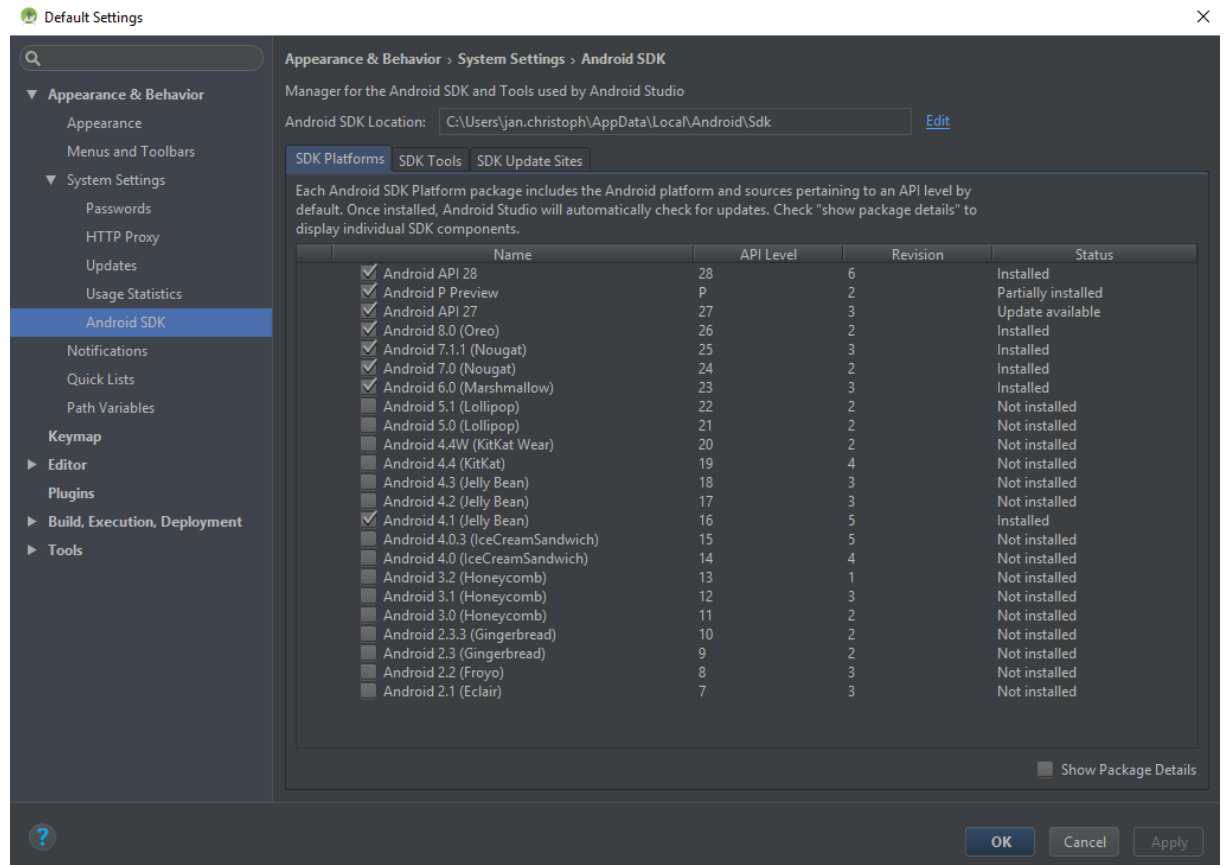
11. You also need to put the path of the android sdk into your environmental variables as done before with node.js. In my case the path is:
    C:\Users\jan.christoph\AppData\Local\Android\Sdk

12. You also will need Git to fetch the starter template. Git is used for the versioning of your code. You will find it here: https://git-scm.com/downloads
    Check if it has been installed by using:
    `git –version`
    You will then see something like:

13. Follow the steps from https://ionicframework.com/docs/intro/installation/ to install Ionic which will be the framework we use to develop our app.

Android

To use your Android phone for testing and app deployment you will have to activate the developer options. Therefore you need to go into the settings of your smartphone, find the information about it and press the build number 7 times as shown in the picture below (yellow circle):
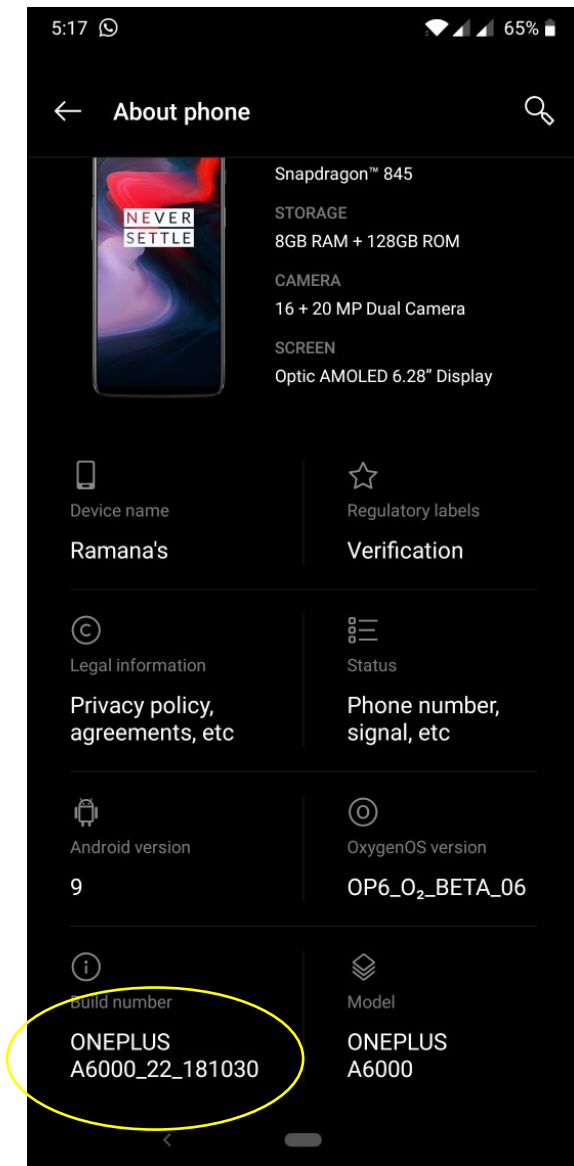
Mac (Mojave)

1. Install XCode from the App Store
2. Then install XCode's command line tools in the terminal wit following command:

```
xcode-select --install
```

    If an error occurs while installing the tools might already be installed on your device!
3. Next you will to install node. You will find it here:
    https://nodejs.org/en/download/
    We use LTS Version 10.14.2

4. Use the command `node -v` and `npm -v` to verify everything works as expected

You should see node version:

`v10.14.2`

and npm version:

`6.4.1`

5. The next step is to install Ionic and Cordova. This is achieved by using the following command in the terminal: `sudo npm install –g cordova ionic`

   To verify run `ionic -v`

   You should see something like:

   Ionic cli 4.5.0

Register the apple id as developer team in Xcode or first create one if you haven't already here:

https://developer.apple.com/register/

In Xcode then go to preferences/Accounts and fill out your login data.

iPhone

When you connect your iPhone to your Mac and everything is setup correctly it is automatically registered as a developer device.

IDE (Software used to develop apps)

Since Ionic uses TypeScript (JavaScript), HTML and CSS choosing the IDE is quite simple because most of them support web development, which in fact we do.

Here is a small list of IDE's from which you can choose whatever one you like the most.

- *Atom (recommended)*
- *Visual Studio Code*

- *WebStorm*
- *SublimeText*
- *Netbeans*
- *Brackets*

If you face any problems while setting up your environment you can write an email to jan.christoph@hs-pforzheim.de and I try to help you as good as can if I have the time to do so.

References and further literature

We will use HTML5, CSS/SCSS, TypeScript and Angular inside of Ionic so it might be useful if you learn the basics of these. Information about them can be found here:

https://www.w3schools.com/html/html5_intro.asp
https://www.w3schools.com/css/
https://sass-lang.com/
https://www.typescriptlang.org/
https://angular.io/

For more help here are some links to useful installation guides:

Ionic:
https://www.youtube.com/user/LittlejTFS
https://ionicframework.com/docs/

Android Studio:
https://www.wikihow.tech/Set-up-an-Android-Development-Environment

Xcode:
https://developer.apple.com/xcode/

Troubleshooting

If localhost:8080 error appears ➔ platforms/android/android.json

```
"config.xml": {

    "parents": {

    "/*": [

     {

       "xml": "<feature name=\"Keyboard\"><param name=\"android-package\" onload=\"true\"
value=\"io.ionic.keyboard.IonicKeyboard\" /></feature>",

       "count": 1

     }

    ]
```

remove the part which says something with locahost

typescript: ...ramming/Ionic/Quizmaster_start/node_modules/@ionic-native/geolocation/index.d.ts, line: 1 Cannot find module '@ionic-native/core'.

Run:

`npm I @ionic-native/core`

`npm install`

`npm audit fix`

IOS Error URL response fails 0 Unknown URL

Go to your config.xml under the platforms/ios/quizmaster folder and change the following line

```
<preference name="CordovaWebViewEngine" value="CDVWKWebViewEngine" />
```

To:

```
<preference name="CordovaWebViewEngine" value="CDVUIWebViewEngine" />
```

IOS Error profile provisioning on deployment device

Just go into `"File"` > `"Project Settings..."` (or in some cases `"Workspace Settings..."`) and then select `"Legacy Build System"` from the `"Build System"` dropdown.

Sometimes something in the android.json is wrong. Then you need to replace its content with the following code:

```
{
  "prepare_queue": {
    "installed": [],
    "uninstalled": []
  },
  "config_munge": {
    "files": {
      "res/xml/config.xml": {
        "parents": {
          "/*": [
            {
              "xml": "<feature name=\"Device\"><param
name=\"android-package\" value=\"org.apache.cordova.device.Device\"
/></feature>",
              "count": 1
            },
            {
              "xml": "<feature name=\"LocationManager\"><param
name=\"android-package\"
value=\"com.unarin.cordova.beacon.LocationManager\" /></feature>",
              "count": 1
            },
            {
              "xml": "<feature name=\"Geolocation\"><param
name=\"android-package\"
value=\"org.apache.cordova.geolocation.Geolocation\" /></feature>",
              "count": 1
```

```
            },
            {
              "xml": "<feature name=\"SplashScreen\"><param
name=\"android-package\"
value=\"org.apache.cordova.splashscreen.SplashScreen\" /><param
name=\"onload\" value=\"true\" /></feature>",
              "count": 1
            },
            {
              "xml": "<feature name=\"Whitelist\"><param
name=\"android-package\"
value=\"org.apache.cordova.whitelist.WhitelistPlugin\" /><param
name=\"onload\" value=\"true\" /></feature>",
              "count": 1
            }
          ]
        }
      },
      "AndroidManifest.xml": {
        "parents": {
          "/manifest": [
            {
              "xml": "<uses-permission
android:name=\"android.permission.READ_EXTERNAL_STORAGE\" />",
              "count": 1
            }
          ],
          "/*": [
            {
              "xml": "<uses-permission
android:name=\"android.permission.ACCESS_COARSE_LOCATION\" />",
              "count": 1
            },
            {
              "xml": "<uses-permission
android:name=\"android.permission.ACCESS_FINE_LOCATION\" />",
              "count": 1
            },
            {
              "xml": "<uses-feature
android:name=\"android.hardware.location.gps\" />",
              "count": 1
            }
          ]
        }
      },
      "config.xml": {
        "parents": {
          "/*": [
            {
              "xml": "<feature name=\"Keyboard\"><param
name=\"android-package\" onload=\"true\"
value=\"io.ionic.keyboard.IonicKeyboard\" /></feature>",
              "count": 1
            }
          ]
        }
```

```json
        }
      }
    },
    "installed_plugins": {
      "cordova-plugin-device": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "com.unarin.cordova.beacon": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "cordova-android-support-gradle-release": {
        "ANDROID_SUPPORT_VERSION": "27.+",
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "cordova-plugin-geolocation": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "cordova-plugin-ionic-keyboard": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "cordova-plugin-ionic-webview": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "cordova-plugin-splashscreen": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      },
      "cordova-plugin-whitelist": {
        "PACKAGE_NAME": "de.hspforzheim.quizmaster"
      }
    },
    "dependent_plugins": {},
    "modules": [
      {
        "id": "cordova-plugin-device.device",
        "file": "plugins/cordova-plugin-device/www/device.js",
        "pluginId": "cordova-plugin-device",
        "clobbers": [
          "device"
        ]
      },
      {
        "id": "com.unarin.cordova.beacon.underscorejs",
        "file": "plugins/com.unarin.cordova.beacon/www/lib/underscore-min-1.6.js",
        "pluginId": "com.unarin.cordova.beacon",
        "runs": true
      },
      {
        "id": "com.unarin.cordova.beacon.Q",
        "file": "plugins/com.unarin.cordova.beacon/www/lib/q.min.js",
        "pluginId": "com.unarin.cordova.beacon",
        "runs": true
      },
      {
        "id": "com.unarin.cordova.beacon.LocationManager",
        "file": "plugins/com.unarin.cordova.beacon/www/LocationManager.js",
```

```
      "pluginId": "com.unarin.cordova.beacon",
      "merges": [
        "cordova.plugins"
      ]
    },
    {
      "id": "com.unarin.cordova.beacon.Delegate",
      "file": "plugins/com.unarin.cordova.beacon/www/Delegate.js",
      "pluginId": "com.unarin.cordova.beacon",
      "runs": true
    },
    {
      "id": "com.unarin.cordova.beacon.Region",
      "file":
"plugins/com.unarin.cordova.beacon/www/model/Region.js",
      "pluginId": "com.unarin.cordova.beacon",
      "runs": true
    },
    {
      "id": "com.unarin.cordova.beacon.Regions",
      "file": "plugins/com.unarin.cordova.beacon/www/Regions.js",
      "pluginId": "com.unarin.cordova.beacon",
      "runs": true
    },
    {
      "id": "com.unarin.cordova.beacon.CircularRegion",
      "file":
"plugins/com.unarin.cordova.beacon/www/model/CircularRegion.js",
      "pluginId": "com.unarin.cordova.beacon",
      "runs": true
    },
    {
      "id": "com.unarin.cordova.beacon.BeaconRegion",
      "file":
"plugins/com.unarin.cordova.beacon/www/model/BeaconRegion.js",
      "pluginId": "com.unarin.cordova.beacon",
      "runs": true
    },
    {
      "id": "cordova-plugin-geolocation.geolocation",
      "file": "plugins/cordova-plugin-
geolocation/www/android/geolocation.js",
      "pluginId": "cordova-plugin-geolocation",
      "clobbers": [
        "navigator.geolocation"
      ]
    },
    {
      "id": "cordova-plugin-geolocation.PositionError",
      "file": "plugins/cordova-plugin-
geolocation/www/PositionError.js",
      "pluginId": "cordova-plugin-geolocation",
      "runs": true
    },
    {
      "id": "cordova-plugin-ionic-keyboard.keyboard",
```

```json
      "file": "plugins/cordova-plugin-ionic-
keyboard/www/android/keyboard.js",
      "pluginId": "cordova-plugin-ionic-keyboard",
      "clobbers": [
        "window.Keyboard"
      ]
    },
    {
      "id": "cordova-plugin-ionic-webview.IonicWebView",
      "file": "plugins/cordova-plugin-ionic-
webview/src/www/util.js",
      "pluginId": "cordova-plugin-ionic-webview",
      "clobbers": [
        "Ionic.WebView"
      ]
    },
    {
      "id": "cordova-plugin-splashscreen.SplashScreen",
      "file": "plugins/cordova-plugin-
splashscreen/www/splashscreen.js",
      "pluginId": "cordova-plugin-splashscreen",
      "clobbers": [
        "navigator.splashscreen"
      ]
    }
  ],
  "plugin_metadata": {
    "cordova-plugin-device": "2.0.2",
    "com.unarin.cordova.beacon": "3.7.0",
    "cordova-android-support-gradle-release": "1.4.6",
    "cordova-plugin-geolocation": "4.0.1",
    "cordova-plugin-ionic-keyboard": "2.1.2",
    "cordova-plugin-ionic-webview": "2.0.0",
    "cordova-plugin-splashscreen": "5.0.2",
    "cordova-plugin-whitelist": "1.3.3"
  }
}
```