Lab 1 - Spinning Up React Native
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System Requirements
OS: Windows 10 or higher
CPU: Multi-core Processor (Quad-core or higher)
GPU: Not Required but if you are doing heavy Android Emulation, it is recommended to have a dedicated GPU
RAM: 8GB minimum

Installation Instructions
Instaling Node.js
1. Navigate to: https://nodejs.org/en
2. Download the LTS version, in this case the most recent version is 18.18.0 LTS.
3. Click on the Node.js installer and proceed with the installation

Installing React Native CLI
1. Open the Node.js CLI
2. Input the following command to install the React Native CLI:
```
npm install -g react-native-cli
```

Configuration Steps
The following are configuration steps to setup the framework
Installing Android Studio
1. Navigate to the following link to install Android Studio: https://developer.android.com/studio
2. Agree to the Terms and Conditions to download the installer
3. Run the installer
4. Download Android Studio

Installing the Android SDK
This allows you to develop a React Native app on Android with native code.
1. Launch Android Studio.
2. On the welcome screen, click "More Actions" and then select "SDK Manager."
3. In the SDK Manager, go to the "SDK Platforms" tab.
4. Select the Android versions (API levels) for which you want to create AVDs. Check the boxes next to the versions you need. In this case, choose Android 13.0 Tiramisu API Level 33
5. Click Apply to install.

Creating Android Virtual Devices (AVD)
1. After installing the AVD Manager, go to the "Welcome to Android Studio" window.
2. Click on "More Actions" at the bottom and select "AVD Manager."

3. In the AVD Manager, click the "Create Device" button.
4. Choose a hardware profile for your emulator. You can select from the provided presets or create a custom hardware profile.
5. Select a system image. This is the Android version and architecture you want to use for your emulator. You may need to download additional system images if they are not already installed.
6. Configure your AVD settings, such as RAM size, screen resolution, and other hardware options.
7. Click "Finish" to create the AVD.

Project Creation
Follow the steps below in order to create a new React Native application
1. Open the Node.js CLI and navigate to the desired file you want to build your application in.
2. Type in this command in the React Native CLI, replace the bracketed text with your desired app name:
```
npx react-native@latest init <INSERT PROJECT NAME HERE>
```
3. Enter "y" to proceed in the installation process
4. Project creation is complete, you can now start developing your application

Running the Project on Android
1. Open the Android Studio
2. Launch your desired AVD with API Level 33
3. Open the Node.js CLI
4. Navigate to your application file
5. Input "`npm start`" to open Metro
6. Open a new terminal and input "npm run android" to start the application on your AVD

Troubleshooting
Refer to this section if you run into any of these common errors while trying to setup your development environment

Debugging
In order to start debugging, press "Ctrl + M" to open the developer menu
For Additional Troublehooting, refer to the sources below.
Emulator Issues
If you are getting build errors when trying to run your application, make sure you have opened the AVD manually in order to test your application.
Metro Bundler Issues

If Metro Bundler is acting up and running into errors, you can clear the Metro cache by inputting this command in the CLI:

```
npx react-native start --reset-cache
```

Resources

Additional resources provided for learning or troubleshooting:

[React Native Documentation](#)

[React Native Troubleshooting](#)

[Stack Overflow React Native Questions](#)