

## **Fall 2024 Mobile Application Development (CPRG-303-F)**

Lab Assignment 1: Spinning Up React Native App

Name: Yaling Wei

No: 000930508

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# React Native Setup Guide for "Incredible Todo List App"

## 1. System Requirements

Document specifications of the system being used for React Native development:

**CPU:** Intel i5 or equivalent (4 cores recommended)

**RAM:** 8GB minimum (16GB recommended)

**Windows:** Windows 10 or later

**Disk Space:** At least 10GB free

## 2. Installation Instructions

Follow these steps to install the necessary tools and dependencies:

### 2.1 Install Node.js

Visit the official Node.js website: <https://nodejs.org/>

Download the LTS (Long Term Support) version for Windows

Run the installer and follow the prompts

Verify installation by opening Command Prompt and typing:

```
node --version
```

```
npm --version
```

### 2.2 Install Java Development Kit (JDK)

Download OpenJDK 11 or later from: <https://adoptium.net/>

Run the installer and follow the prompts

Set the JAVA\_HOME environment variable:

Open System Properties > Advanced > Environment Variables

Under System Variables, click New

Variable name: JAVA\_HOME

Variable value: Path to your JDK installation (e.g., C:\Program Files\Java\jdk-17)

Add Java to your PATH:

Edit the Path variable under System Variables

Add %JAVA\_HOME%\bin

Verify installation by opening a new Command Prompt and typing:

`java --version`

## **2.3 Install Android Studio**

Download Android Studio from: <https://developer.android.com/studio>

Run the installer and follow the prompts

During installation, ensure you select:

Android SDK

Android SDK Platform

Android Virtual Device

After installation, open Android Studio and go to Tools > SDK Manager

In the SDK Platforms tab, select:

Android 13 (Tiramisu)

Android 12 (S)

In the SDK Tools tab, select:

Android SDK Build-Tools

Android SDK Command-line Tools

Android Emulator

Android SDK Platform-Tools

Click Apply to install the selected components

## **2.4 Set up Android environment variables**

Open System Properties > Advanced > Environment Variables

Under User Variables, click New

Add the following:

Variable name: ANDROID\_HOME

Variable value: Path to your Android SDK (e.g.,  
C:\Users\YourUsername\AppData\Local\Android\Sdk)

Edit the Path variable under User Variables and add:

%ANDROID\_HOME%\platform-tools

%ANDROID\_HOME%\emulator

%ANDROID\_HOME%\tools

%ANDROID\_HOME%\tools\bin

## **2.5 Install React Native CLI**

Open Command Prompt and run:

```
npm install -g react-native-cli
```

## **3. Configuration Steps**

No additional configuration steps are required beyond the environment variables set during installation.

## **4. Project Creation**

To create your "Incredible Todo List App":

Open Command Prompt

Navigate to the directory where you want to create your project

Run the following command:

```
npx react-native init IncredibleTodoListApp
```

Wait for the project to be created and dependencies to be installed

## **5. Running the Project**

To run your project in an Android Device Simulator:

Open Android Studio

Go to Tools > AVD Manager

Click "Create Virtual Device" if you don't have one already

Select a device (e.g., Pixel 4) and click Next

Choose a system image (e.g., Android 13) and click Next

Name your AVD and click Finish

Start the AVD by clicking the play button

Now, to run your React Native app:

Open Command Prompt

Navigate to your project directory:

```
cd IncredibleTodoListApp
```

Run the following command:

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

Your app should now be running in the Android emulator!

## **6. Troubleshooting**

Common issues and solutions:

"adb is not recognized as an internal or external command"

Ensure ANDROID\_HOME is set correctly and adb is in your PATH

"Unable to load script. Make sure you're either running Metro..."

Run `npx react-native start` in a separate terminal before `npx react-native run-android`

Gradle build fails

Ensure you have the latest JDK installed and JAVA\_HOME is set correctly

Try running ./gradlew clean in the android folder of your project

Metro bundler fails to start

Clear Metro cache: npx react-native start --reset-cache

Red screen with "Unable to connect to development server"

Ensure your computer and Android emulator are on the same network

Try running adb reverse tcp:8081 tcp:8081

## **7. Resources**

Official React Native Documentation: <https://reactnative.dev/docs/getting-started>

React Native CLI GitHub: <https://github.com/react-native-community/cli>

React Native Troubleshooting: <https://reactnative.dev/docs/troubleshooting>

Stack Overflow React Native Tag:

<https://stackoverflow.com/questions/tagged/react-native>

React Native Community: <https://reactnative.dev/community/overview>

Remember to consult these resources when you encounter issues or need to learn more about React Native development.