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**Lab Assignment 1: Spinning Up React Native App**

1. **System Requirements**

Before proceeding with the installation of React, it's essential to confirm that your system meets the necessary prerequisites. The information is provided below.

1. Operating System: For optimal compatibility and performance, it is recommended to use Windows 10 or 11, macOS 10.10, or Ubuntu 16.
2. Hardware: To ensure the smooth operation of React and its related tools, a minimum of 8GB of RAM (preferably 16) and 10GB of storage space is required.
3. CPU: Intel(R) Core(TM) i7-4870HQ CPU @ 2.50GHz
4. **Installation Instructions**

**Step by Step to Setting UP a React Native Application**

1. Begin by visiting the React Native website at <https://reactnative.dev>
2. Navigate to the “**Guides**” section under “**Development**” in the menu.
3. Access the “**Environment setup**” from the left panel and choose “**Setting up the development environment**.” Note: This page provides comprehensive instructions for installing the React Native app and creating a new project.
4. Click “**React Native CLI Quickstart**” and choose the relevant development and target operating system based on your requirements.

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**Dependencies**

1. Node.js
2. React Native Command Line Interface (CLI)
3. Android Studio (with JDK)

**Installing Node.Js**

1. Visit <http://nodejs.org/en>.
2. Choose the **LTS version**, download it and start the installation process.

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1. In the Node.js Custom Setup, select the default features for installation.

Do not install Chocolatey.

A screenshot of a software setup

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1. Click on the **Install** button.
2. Press the **Finish** button to complete the installation.

**Installing Android Studio**

1. Go to <https://developer.android.com> and download Android Studio.
2. Launch the executable file to initiate the installation process.
3. Choose the components for installation, which include Android Studio and Android Virtual Device, and click Next.
4. Keep the installation location unchanged (in Program Files).
5. Select the **Install** option.
6. Complete the process by clicking **Finish**.
7. **Configuration steps**

**Setting Up Development Environment for Android Studio**

1. Launch the Android Studio Application.
2. Choose the **Standard** setup type.
3. You may encounter a prompt to pick your preferred them, either white or black.
4. Make sure to select the following components and update/install.
   1. Android SDK
   2. Android SDK Platform
   3. Android Virtual Device
5. Verify the settings.
6. Agree to all License Agreements.

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1. Complete the process by clicking the **Finish** button.

**Android Studio SDK Manager**

1. Choose the following options within the SDK Platform
   1. Android API 34
   2. Android SDK Platform 33
   3. Intel x86 Atom 64 System Image or Google API’s Intel x86 Atom System Image
2. In SDK Tools, opt for the following:
   1. Android SDK Build-Tools
   2. Android Emulator
   3. Intel Accelerator

Make sure to enable the "Show Package Details" option. Navigate to Android SDK Build-Tools, expand it, and ensure that version 33.0.0 is selected.

**Configuring Environment Variable for Android**

1. Open Windows Control Panel
2. Navigate to User Accounts, then select User Accounts once more.
3. Click on **Change my environment variables**.
4. Click on **New**.. to establish a new User variable named Android\_Home, pointing to the directory where your Android SDK is located.

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1. **Project Creation**

**Creating a New React Native Project/Application**

1. Create a folder in the C: drive. Not in OneDrive or CloudDrive.
2. Go to the directory, then type the following with the name of the application. (Ex. Awesome Project)

npx react-native@latest init AwesomeProject

1. Ok to Proceed?(y) type **y**
2. If asked to update npm

npm I -g npm

1. Open Visual Studio Code then open the project folder.
2. The main files that can be modified are:
   1. App.json
   2. App.tsx or App.jsx
   3. Index.js
   4. Metro.config.js
   5. Package.json
   6. Tsconfig.json
3. To convert Typscript (tsx) to Javascript (jsx)
   1. Go to App.tsx and rename it to App.jsx
   2. Delete all red lines.

**Creating Emulator Setup**

1. Open Android Studio
2. From More Actions, go to **Virtual Device Manager**
3. Create Device then select **Pixel 7 (Phone Device)**
4. Hit **Next** button.
5. Choose **R**, then click the **download** button.
6. Finish
7. Click **next.**
8. Select Portrait mode.
9. Hit **Finish**
10. Click the play button to start.
11. It will open the Android Emulator screen.
12. **Running the Project**

**Running a Project in Android Studio**

1. Open Android Studio
2. Navigate to the project folder then click the **Android**.
3. When the gradle run is finished, go to Build menu then click “**Make Project**”.
4. Go to Run menu, then click **Run ‘app’**.
5. Go to Device Manager then click **Pixel 7 API 30**
6. A screenshot of a phone

   Description automatically generatedPlay the Green button 
7. Click the Power button
8. When the app is running on the device. It will get an error message.
9. To fix this, go to Visual studio code/command line then type:

npm run start

1. **Troubleshooting**
2. **Port already in use**

To terminate a process on port 8081, execute the following command to identify the ID of the process listening on that port:

sudo lsof -i :8081

Then run the below code to terminate the process.

kill -9 <PID>

If you wish to use a different port other than 8081, type:

**NPM**

npm start -- --port=8088

**Yarn**

yarn start --port 8088

1. **NPM Locking Error**

Should you come across an error like npm WARN locking Error: EACCES when utilizing the React Native CLI, consider executing the following command:

sudo chown -R $USER ~/.npm  
sudo chown -R $USER /usr/local/lib/node\_modules

1. React-native init hangs

If you face problems where the execution of npx react-native init becomes unresponsive on your system, attempt running it again in verbose mode and consult #2797 for typical reasons:

NPM

npm run android -- --verbose

Yarn

yarn android –verbose

1. **Resources**
2. React native environment setup:

<https://reactnative.dev/docs/environment-setup>

1. Nodejs downloads

<https://nodejs.org/en/>

1. Videos shared on Microsoft Teams
2. Download and install Android Studio.

<https://mysait.sharepoint.com/sites/Winter2024MobileApplicationDevelopmentCPRG-303-A/_layouts/15/stream.aspx?id=%2Fsites%2FWinter2024MobileApplicationDevelopmentCPRG%2D303%2DA%2FShared%20Documents%2FResources%2FReact%20Native%20Setup%2FA%20Download%20and%20Install%20Android%20Studio%2Emkv&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview>

1. Create project.

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1. Device emulator setup.

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1. Run project in Android Studio.

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1. Run from command line.

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