Cross Platform App Development Lab Experiment No. 2

Aim: Setting up the development environment of React Native and .NET MAUI on Windows and building first simple application.

Objectives:

1. The objective of this lab is to install the development environment for React Native on a Windows system and build a simple application using frameworks.

Theory:

1. React Native:

React Native is a JavaScript framework for building mobile applications that can run natively on iOS and Android devices.

It allows developers to use React along with native platform capabilities to create high-performance, cross-platform apps.

2. Node.js and npm:

Node.js is a runtime environment that allows executing JavaScript code server-side.

npm (Node Package Manager) is the default package manager for Node.js, facilitating the installation and management of JavaScript packages.

3. Chocolatey:

Chocolatey is a package manager for Windows that automates the process of software installation, configuration, and updates.

It provides a command-line interface for managing software packages in a manner similar to Linux package managers.

4. Android Studio:

Android Studio is an integrated development environment (IDE) designed for Android app development.

It provides a comprehensive set of tools for designing, building, testing, and debugging Android applications, streamlining the development process.

Requirements:

1. Computer with internet access.
2. Windows Operating System
3. Visual Studio IDE
4. Node.js and npm for React Native
5. NET 6 SDK for .NET MAUI
6. Android Studio for Android development
7. Xcode for iOS development (on macOS)
8. Git for version control

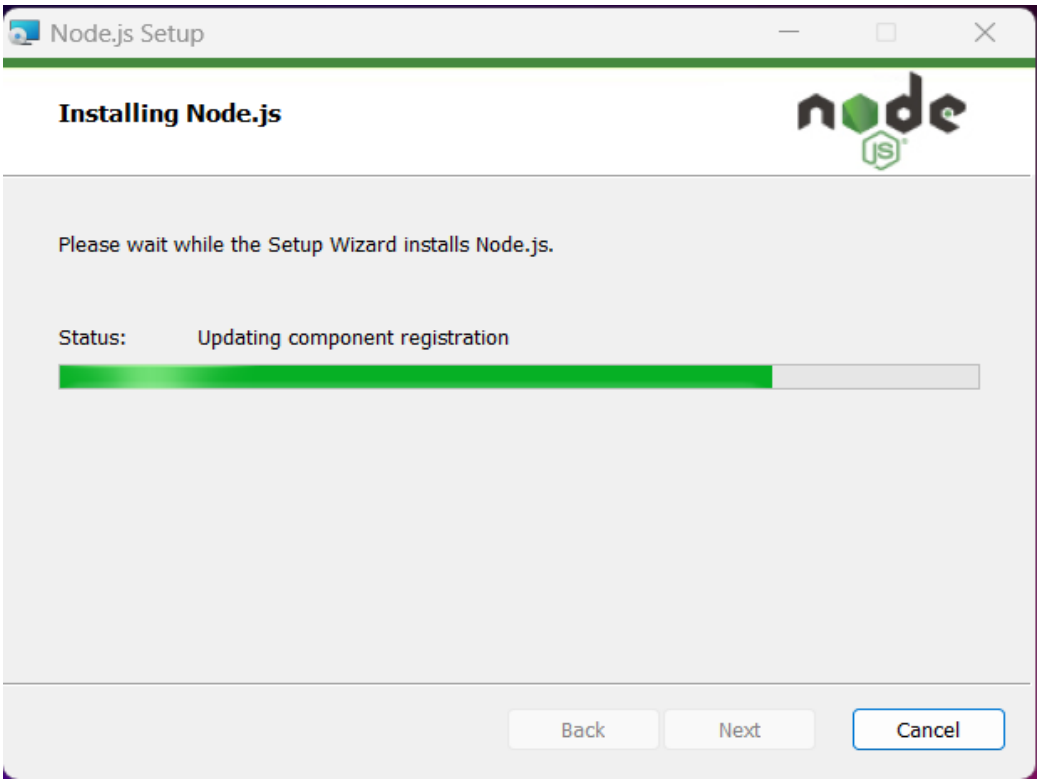
Tools:

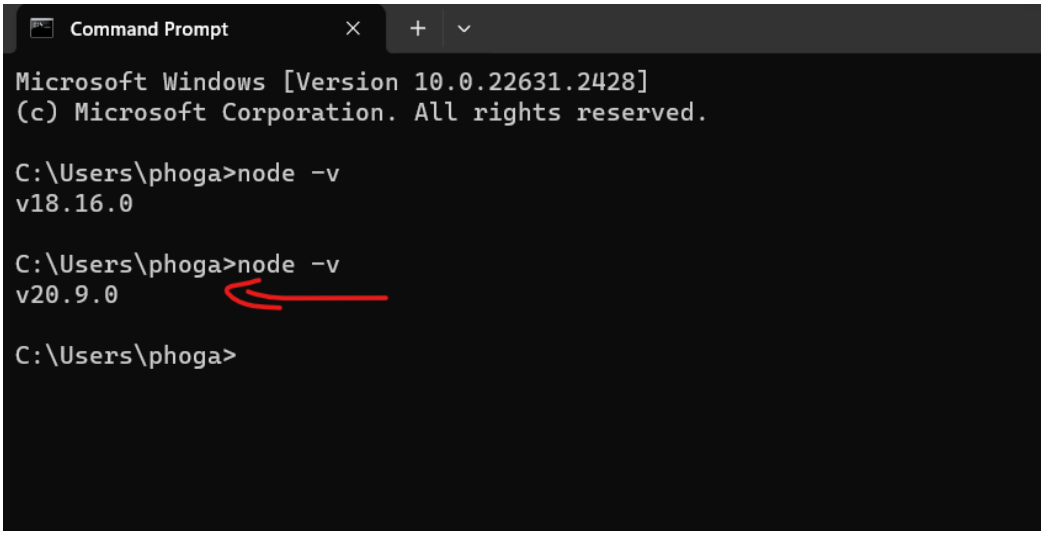
1. Visual Studio IDE
2. Node.js
3. NPM
4. Android Studio

Steps/Code:

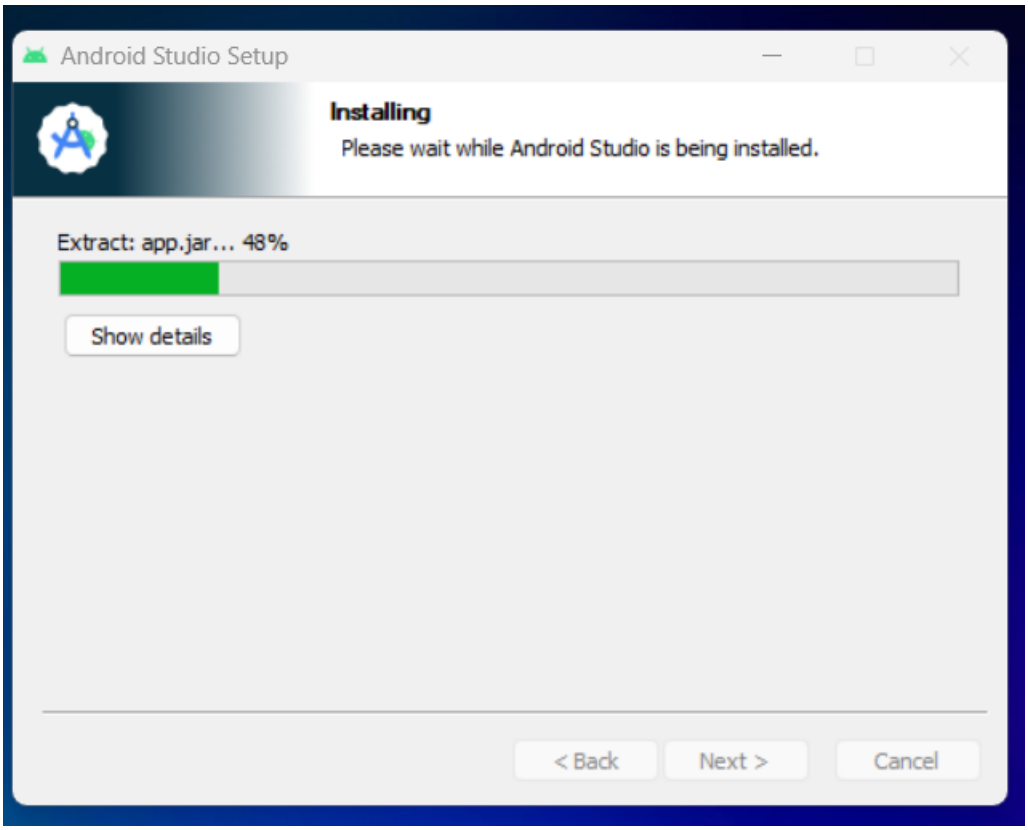
1. Install Required Software:

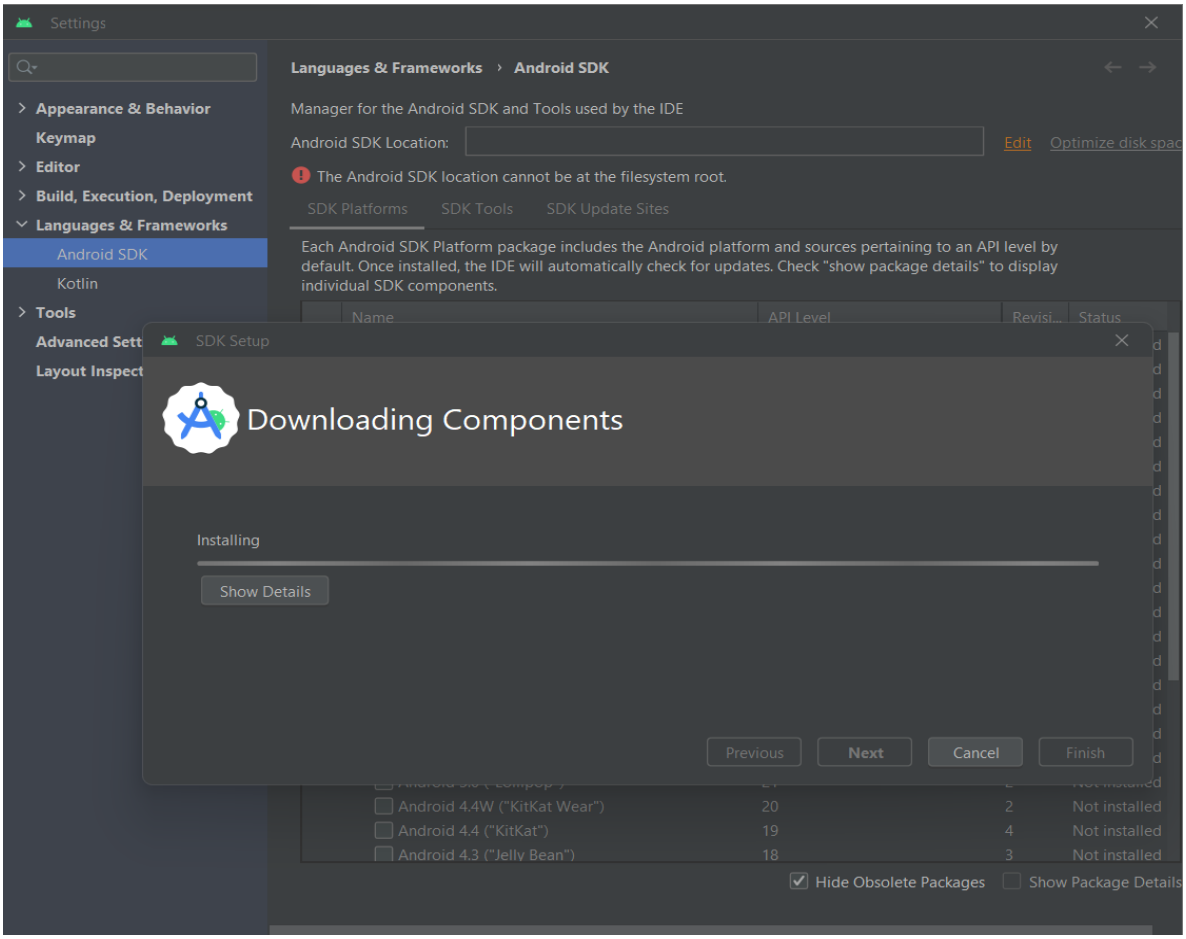
- Install Node.js and npm.

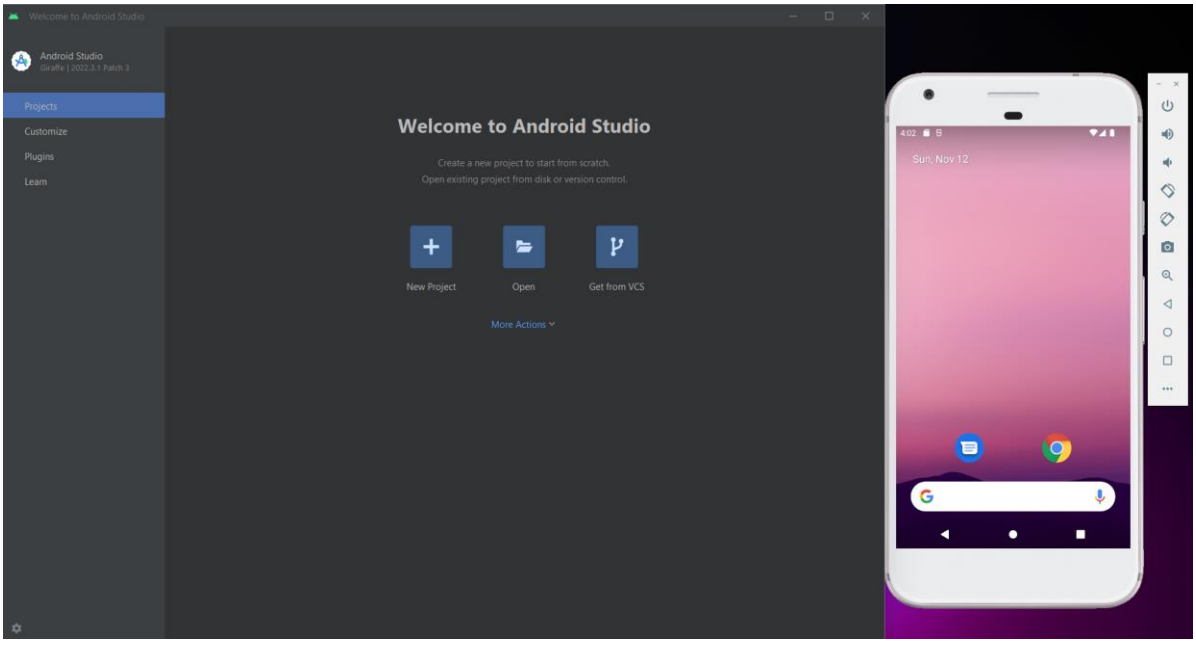




- Set up Android Studio for Android development.



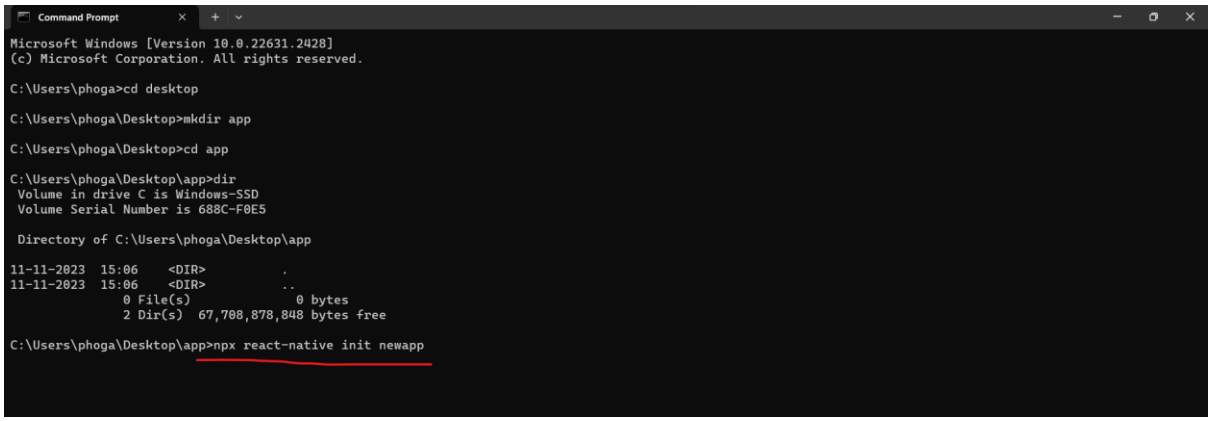

Settings
Languages & Frameworks › Android SDK
Appearance & Behavior
Keymap
Editor
Build, Execution, Deployment
Languages & Frameworks
Android SDK
Kotlin
Tools
Manager for the Android SDK and Tools used by the IDE
Android SDK Location:
Edit
The Android SDK location cannot be at the filesystem root.
SDK Platforms
SDK Tools
SDK Update Sites
Each Android SDK Platform package includes the Android platform and sources pertaining to an API level by default. Once installed, the IDE will automatically check for updates. Check "show package details" to display individual SDK components.
SDK Setup
Downloading Components
Installing
Show Details
Previous
Next
Cancel
Finish
Android 4.4W ("KitKat Wear") 20 2 Not installed
Android 4.4 ("KitKat") 19 4 Not installed
Android 4.3 ("Jelly Bean") 18 3 Not installed
Hide Obsolete Packages
Show Package Details


Welcome to Android Studio
Projects
Customize
Plugins
Learn
Welcome to Android Studio
Create a new project to start from scratch.
Open existing project from disk or version control.
New Project
Open
Get from VCS
More Actions
Sun, Nov 12

2. Create a React Native Project:

Open a terminal and using the following commands:

- npx react-native init newapp

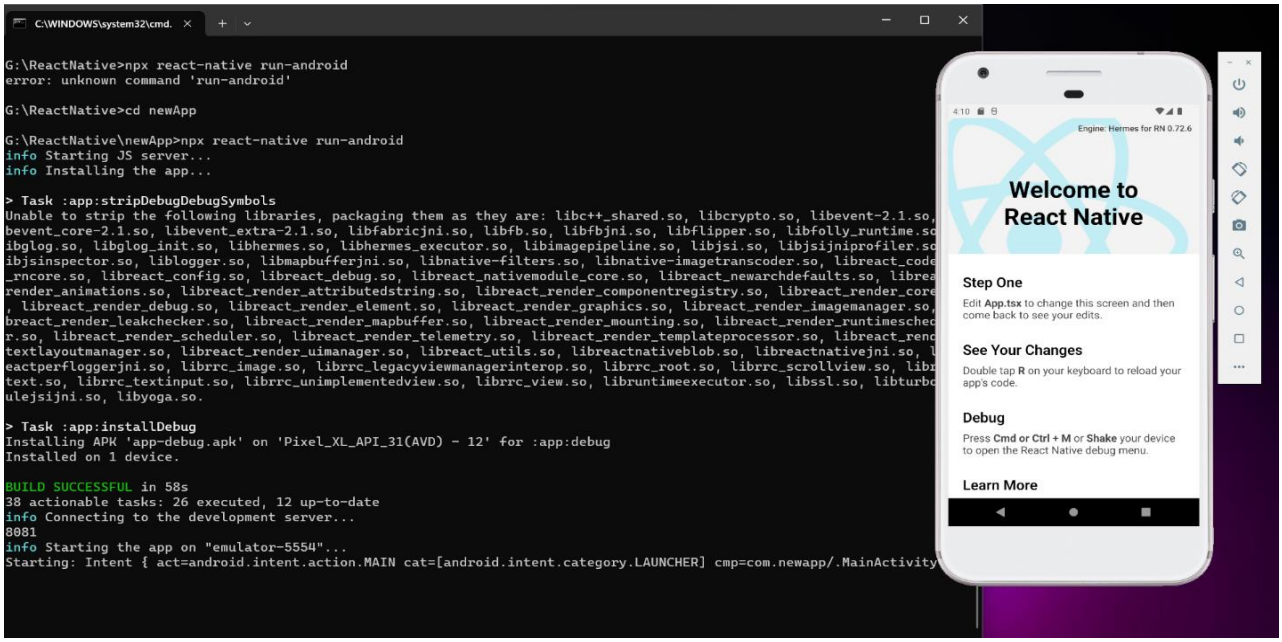


- cd newapp

3. Run React Native App:

Start the React Native app using:

- npx react-native run-android



Conclusion:

React Native provides a powerful solution for developers to build versatile and efficient mobile applications using familiar technologies.

References:

1. React Native: https://reactnative.dev/docs/environment-setup
2. Android Studio: https://developer.android.com/studio
3. Node : https://nodejs.org/en/download
4. Package Manager: https://chocolatey.org/contact/trial