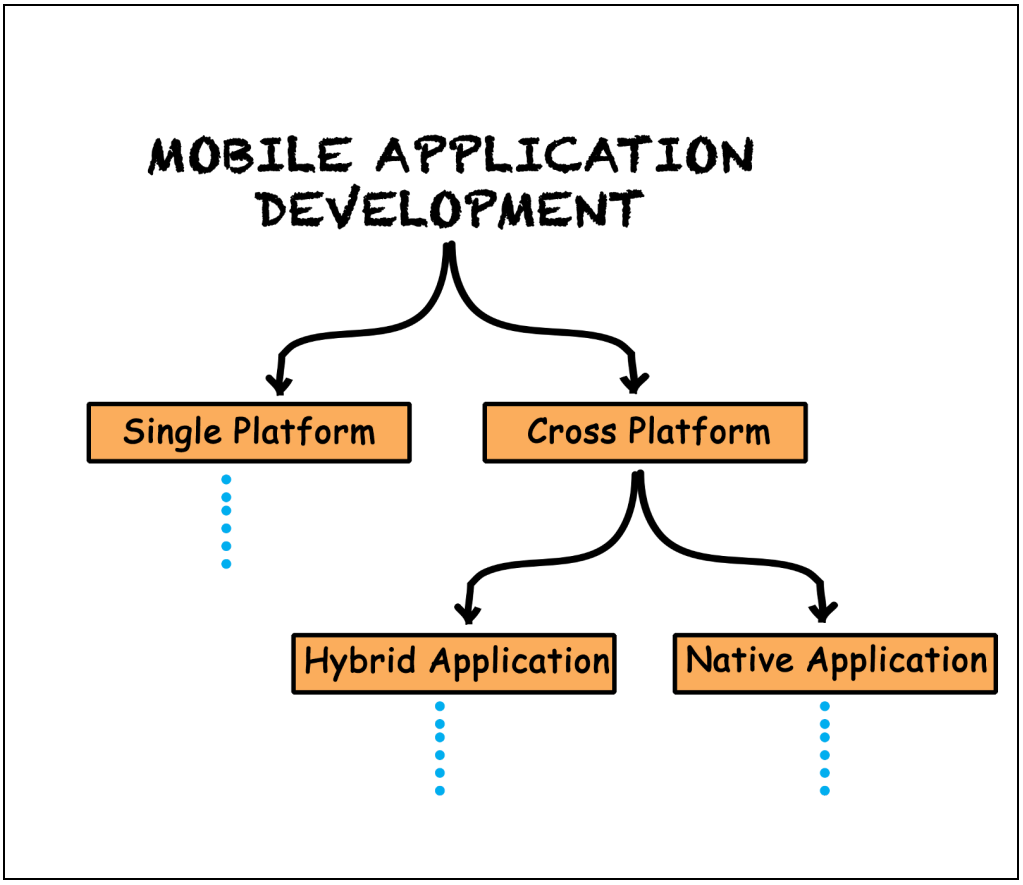
A RoadMap to Application Development

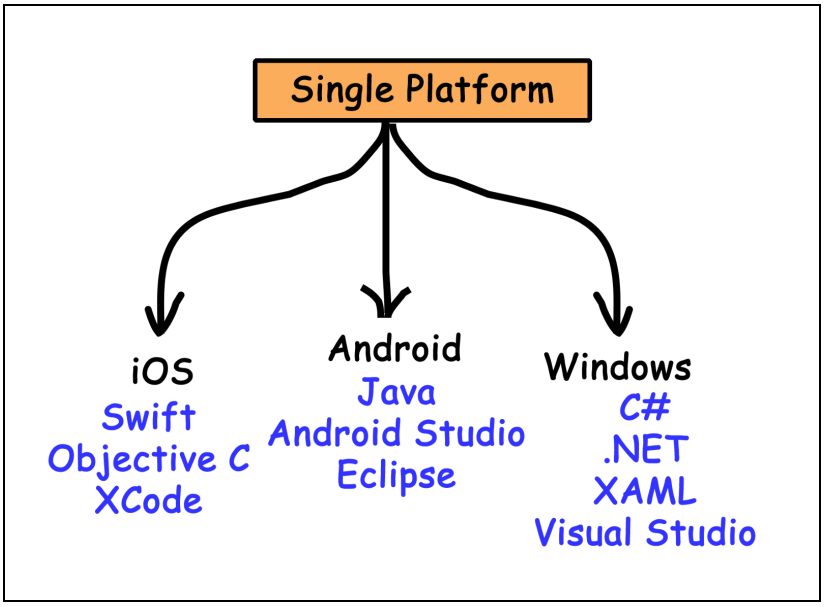
Mobile app development is the act or process by which a mobile app is developed for mobile devices, such as personal digital assistants, enterprise digital assistants or mobile phones.

The 3 Paths for You to choose

1. Single Platform
2. Hybrid Application
3. Native Application



Single Platform Development



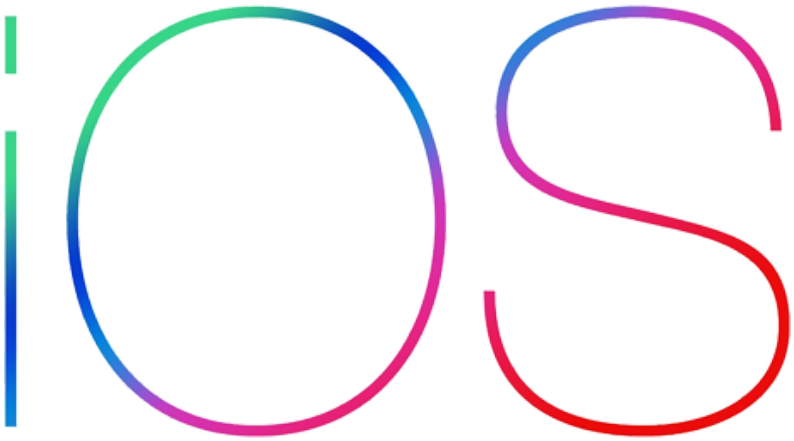
Android

Android is an open-source and Linux-based operating system for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies.

Android programming is based on **Java programming language** so if you have a basic understanding of Java programming then it will be fun to learn Android application development.

Language: Java / Kotlin (latest)
Software/ Tool: Android Studio
Start Learning from Here:
https://www.tutorialspoint.com/android/index.htm
https://developer.android.com/guide

iOS Mobile



iOS is a mobile operating system developed and distributed by Apple Inc. It was originally released in 2007 for the iPhone, iPod Touch, and Apple TV. iOS is derived from OS X, with which it shares the Darwin foundation. iOS is Apple's mobile version of the OS X operating system used in Apple computers.

Language: Swift
Software/ Tool: Xcode

Start Learning from Here:
https://developer.apple.com/library/archive/referencelibrary/GettingStarted/DevelopiOSAppsSwift/
https://www.tutorialspoint.com/ios/index.htm

Windows Phone

Windows Phone is a discontinued family of mobile operating systems developed by Microsoft for smartphones as the replacement successor to Windows Mobile and Zune. Windows Phone featured a new user interface derived from Metro design language.

Language: C#, XAML
Software/ Tool: Visual Studio

Start Learning from Here:
https://www.tutorialspoint.com/windows10_development/index.htm
https://code.tutsplus.com/tutorials/windows-phone-8-creating-your-first-application--mobile-21175

Cross-Platform Development

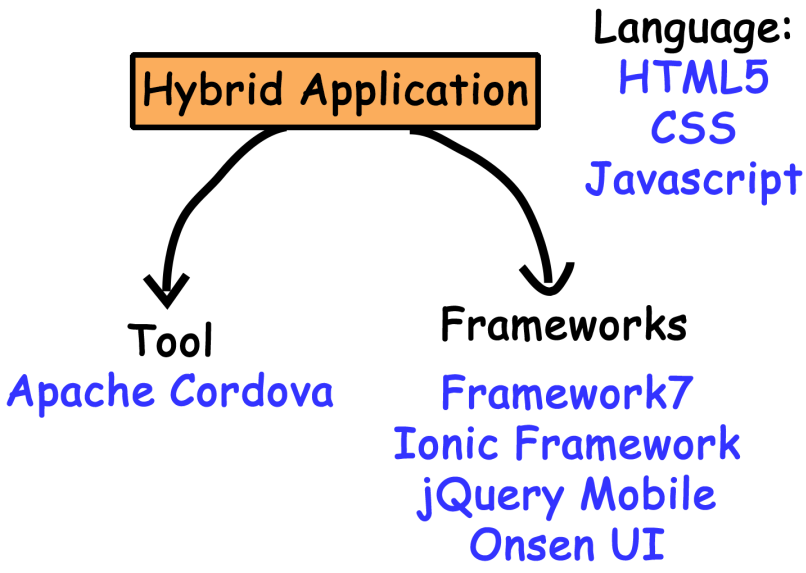
If you are planning to develop a single mobile application across two or more platforms, then cross-platform development tools will certainly help you.

The two types of cross-platform development techniques are:

- Hybrid Applications
- Native Applications

Hybrid applications

Hybrid applications are web applications (or web pages) in the native browser, such as **UIWebView** in iOS and **WebView** in Android (not Safari or Chrome). Hybrid apps are developed using HTML, CSS, and Javascript, and then wrapped in a native application using platforms like Cordova. This allows you to use any web-native framework you want, and there are plenty of these.



Apache Cordova

It is a free and Open source platform to build applications for multiple mobile platforms with a single codebase

You can build an application using HTML, CSS and Javascript and then deploy it to Android, iOS, Windows, FirefoxOS and much more. It is surely the topmost choice for developers if you wish to build a hybrid application. There are also many plugins and extensions available that will help you access certain hardware features like Camera, Sound, etc. to a certain level. Adobe has forked this project to its own version, called PhoneGap.

Framework7

Framework7 — is a free and open-source mobile HTML framework to develop hybrid mobile apps or web apps with iOS & Android native look and feel. It is also an indispensable prototyping app tool to show the working app prototype as soon as possible in case you need to.

Framework7 is actually a framework to build a Hybrid application on top of Cordova. But it is actually iOS specific. It was initially created for iOS platforms, and thus is more flavoured towards it

Ionic Framework

Ionic Framework is a free and open-source software development kit (SDK) for hybrid mobile app development. It is developed on top of Angular.js and Apache Cordova, and provides developers with state-of-art tools and services for developing apps using various web languages like HTML5, CSS, and Sass.
There are many extensions available which will help you avail Bluetooth, Camera, etc.

jQuery Mobile

jQuery Mobile is a robust framework to develop cross-platform mobile apps. It supports a wide range of platforms for app development like desktops, smartphones, tablets and ebook reading devices like Kindle

jQuery is a module-based framework, which allows you to create as many custom builds as you need

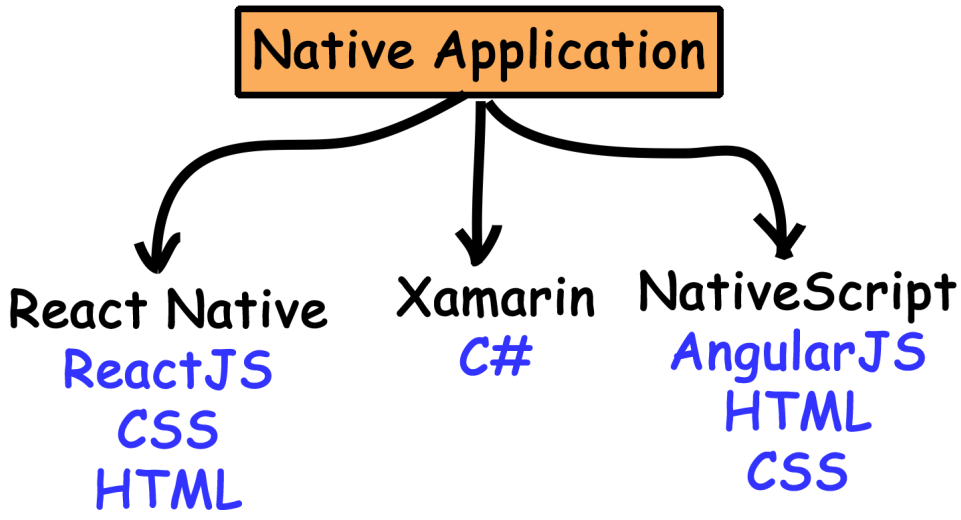
Onsen UI

Onsen UI is another framework that lets you build Hybrid mobile applications using popular javascript frameworks like Angular.js, React.js and Vue.js.

Native applications

Building native applications means using the native language of the platform, Objective-C on iOS, and Java on Android. The main advantage of native applications is their **performance**. Native apps are compiled into machine code (Dalvik byte code under Android), which gives the best performance you can get from the mobile phone.

Best performance includes fast and fluid animations as well as full access to phone hardware, multi-touch support and the latest APIs.



React Native

React-Native is one of the most famous cross-platform application development framework created by Facebook.

React Native lets you build mobile apps using only JavaScript. It uses the same design as React, letting you compose a rich mobile UI from declarative components.

With React Native, you don't build a "mobile web app", an "HTML5 app", or a "hybrid app". You build a real mobile app that's indistinguishable from an app built using Objective-C or Java. React Native uses the same fundamental UI building blocks as regular iOS and Android apps. You just put those building blocks together using JavaScript and React.

If you look at applications build using React-Native, you could see its potential. Some of them are Facebook App, Instagram, Airbnb, Flipkart App, and thus the list goes on. It is by far one of the most famous framework and the demand for developers are high in this area too.

Xamarin

Xamarin is a software company based in San Francisco. It provides commercial software development tools that allow a user to develop applications for Android, iOS and Windows using C# language and the .NET framework. Xamarin is built on the .NET Framework. It allows one to create apps that easily run across multiple platforms. In this tutorial, we will explain how you can use Xamarin to deliver native iOS, Android, and Windows Apps.

Some famous examples of applications made using Xamarin are Pinterest App, Slack App, Cognizant App, Bosch App, etc.

NativeScript

NativeScript is another open-source platform that lets you compile native mobile applications built using Javascript. According to their official website,

“NativeScript is how you build cross-platform, native iOS and Android apps without web views. Use Angular, TypeScript, or modern JavaScript to get truly native UI and performance while sharing skills and code with the web. Get 100% access to native APIs via JavaScript and reuse of packages from NPM, CocoaPods, and Gradle. Open source and backed by Progress.”

Resources:

React Native:
https://www.youtube.com/watch?v=ur6I5m2nTvk
https://www.tutorialspoint.com/react_native/index.htm
https://www.youtube.com/watch?v=qSRrxpdMpVc

Xamarin:
https://www.tutorialspoint.com/xamarin/index.htm
https://www.youtube.com/watch?v=93ZU6j59wL4

NativeScript:
https://docs.nativescript.org/start/introduction

Reference:

https://hackernoon.com/a-roadmap-to-application-development-bfa2e32fcd82

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Thank You