COMSATS UNIVERSITY ISLAMABAD
ATTOCK CAMPUS

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SUBJECT: MAD-Theory

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Question: Explore the different frameworks/Tech Stacks available for cross platform mobile application development. Prepare a report that include following:

A comparison of Native and Cross Platform mobile app development.

Native App Development:

The term Native App Development refers to building a mobile app exclusively for a single platform. The app is built with programming languages and tools that are specific to a single platform. For example, you can develop a native Android app with Java or Kotlin and choose Swift and Objective-C for iOS apps.

Cross-platform development:

Cross platform development is the process of building an application, a mobile app that can be deployed across several platforms based on single source code. This is done by using tools like React Native, Xamarin, and Flutter, where the apps created can be deployed in both android and IOS. Cross-platform development saves time and cost

Different scenarios where each native and cross platform mobile app development is preferred.

Native apps are developed for their particular platform, taking full advantage of the software and the operating systems' features. These apps can directly access the hardware of the device such as the GPS, camera, microphone, etc. so they are faster in execution, which ultimately results in better user experience.

While

Mobile engineers use cross-platform mobile development frameworks to build native looking applications for multiple platforms, such as Android and iOS, using a single codebase. Shareable code is one of the key advantages this approach has over native app development

List of frameworks/Tech Stack for cross platform mobile Application development.

Flutter: It is a software development kit designed to assist in the expeditious Android and development. Flutter promotes portable GPU, which renders UI power, allowing it to work on the latest interfaces

Node.Js: Node.Js is an incredible framework for developing cross-platform apps. All of the Node.js APIs are asynchronous, signifying that they are non-blocking in nature, meaning servers based on Node.JS do not essentially wait for data from APIs.

Native Script: renders beautiful, accessible, and platform-native UI, and that too without the Web Views. Developers are only required to define once and let the Native Script adapt to everywhere. They can even customize the UI to specific devices and screens.

React Native: It is a framework built on JavaScript and is used to write real code and give the native like feel to mobile applications that work both on Android and iOS.

Ionic: Ionic is one of the most remarkable and popular cross-platform app frameworks, based on AngularJS. It allows developers to use a combination of top programming languages i.e., HTML5, JavaScript, and CSS.

Xamarin: It is a streamlined framework used for developing apps for Android, Windows, and iOS with the help of C# and .Net, instead of JS libraries and HTML. It allows the developers to use 90% of the code for building an app for three distinct platforms.

PhoneGap: PhoneGap is considered an impeccable cross-platform framework as it enables developers to create cross-platform apps using existing web technologies such as HTML 5, CSS3 and JavaScript.

Appcelerator: Appcelerator offers various tools for rapid application development. This indicates that a prototype can be created with much less time and effort to evaluate user interaction with UI. It is a great way to create cross-platform apps with just a single code base.