

MAD-ASSIGNMENT

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SP20-BCS-023

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

1. A comparison of Native and Cross Platform mobile app development.
2. Different scenarios where each native and cross platform mobile app development is preferred.
3. List of frameworks/Tech Stack for cross platform mobile Application development.

**1. A comparison of Native and Cross Platform mobile app development.**The primary distinction between native and cross-platform development originates from the operating system for which you are building. Native mobile development allows you to create apps for a certain operating system, such as Android or iOS. Cross-platform mobile development, on the other hand, allows you to create apps that run on many operating systems.

**2.Different scenarios where each native and cross platform mobile app development is preferred.**  
Native mobile apps are those that are designed to run on either Android or iOS. Your applications are often written in a programming language specific to the operating system for which you are creating.  
You use a single codebase to create cross-platform mobile applications. Cross-platform app development aims to target many operating systems with a single project. These apps are built with cross-platform frameworks that utilize platform-specific SDKs (Android SDKs and iOS SDKs) from a single API. This allows you to quickly access the various platform SDKs and libraries.

**3.List of frameworks/Tech Stack for cross platform mobile Application development.**There are various frameworks available for cross-platform app development. We'll look at the most similar ones, including Titanium, React Native, Flutter, and Xamarin.

* React Native  
  React Native is another popular open-source app development tool that is built on JavaScript. React Native was created by Facebook to create apps that will operate on various platforms such as Android and iOS while maintaining a native user interface on any OS. Examples include mobile apps like Instagram, Facebook, and Skype.
* Flutter  
  Flutter is another excellent open-source UI SDK created by Google. Developers may create cross-platform mobile apps with native interface and performance in minutes using a single codebase. To ensure rapid component rendering and expressive designs, Flutter depends on the Dart programming language, layered architecture, and a large range of customizable widgets. Flutter is a relatively new mobile development technology, but it is quickly gaining traction. Its Stateful Hot Reload functionality allows developers to experiment, add features, and repair errors as the framework rebuilds the widget to reflect the changes. As a result, it allows for rapid development, which is one of the reasons this platform is so popular.
* Titanium  
  Titanium SDK uses JavaScript to enable developers to create cross-platform mobile applications that connect native, hybrid, and web platforms with a single code base. To begin, as an open-source solution with hundreds of API, Titanium is extremely useful in delivering a rapt user experience faster than the traditional native platform.
* Xamarin  
  Xamarin is a popular and well-regarded technology for developing cross-platform apps. Notably, developers have the option of writing or rewriting code in other languages such as C, C#, and.Net frameworks, giving it a match and fit for Microsoft products and solutions. Finally, Xamarin improves a cross-platform UI toolkit that compiles code regardless of the native interface.