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**ASSIGNMENT NUMBER 01**

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**REG NO:** SP20-BCS-004

**SUBJECT:** MAD

**SUBMITTED TO:** MR MUHAMMAD KAMRAN

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

1. A comparison of Native and Cross Platform mobile app development.

Ans: Cross-platform mobile application development or Hybrid mobile app development speaks for itself, this is an approach that allows developers to build a mobile solution that is easy to access for several operating systems and platforms (iOS, Android, Windows). When we discuss hybrid mobile applications, they have native look and feel due to independent and native code that’s suitable for many platforms. Some of the key differences between native and Cross-platform apps:

Native apps have full access to device capabilities, and code for a single platform, they have seamless performance and high development cast. While Cross-platform apps have code for sharable, Limited access to device capabilities, High lags, and capabilities issues may occur in performance and relatively low development cost.

Native app developers are guided before creating apps about specific OS requirements because Native applications are not compatible with other platforms they rely on tools and programming languages designed for specific one platform.

Cross-platform development focus to create or aim to create applications that run on several platforms. They use agnostic technologies like HTML and CSS at a lower cost.

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

Native app development:

Native apps have Broad functionalities there is no limit that programmers will work with the app, these are better to store and support it is very easy to publish them and work for the highest rank, and they have increased scalability means they are more scalable and flexible in resources management, and they have Great UX and High performance as well because they directly interact between code and underlying resources.

Cross Platform apps Development:

Cross-platform apps are Less costly, and faster to develop because only a single cycle of development is needed. They have a single code base because only one code base is created when the app is created on a single cross-platform development tool.

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

Here is the list of top frameworks for cross-platform mobile application development.

1. **Ionic:** Ionic tech stack consists of HTML, CSS, and JS.
2. **React Native:** React Native tech stack consists of Ex list, Redux, Next.js, Cypress, TypeScript, and style components.
3. **Flutter:** Flutter support 77 different languages.
4. **Xamarin:** they have Traditional apps, IPA and APK packages, and Different OS platforms for running the code.
5. **Native Script:** It supports Js and Typescript. It also supports Angular and Vue JavaScript platforms.
6. **Node. Js:** It uses even driven and non-blocking I/O Models that make it efficient and perfect for real-time applications run on distributed devices.