|  |
| --- |
| A7D18627**COMSATS UNIVERSITY ISLAMABAD**  **ATTOCK CAMPUS** |

**ASSIGNMENT # 01**

**Mobile Application Development**

|  |  |
| --- | --- |
| Student Name | Muhammad Sohaib Sana |
| Registration Number | SP20-BSE-015 |
| Program | BS-(SE) |
| Semester | VI |

**Submitted to : Sir Muhammad Kamran**

**Q1 : A comparison of Native and cross platform mobile app development.**

|  |  |
| --- | --- |
| **Native development** | **Cross platform 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. | Cross-platform development points to the process of creating an app that works on several platforms. |
| You can develop a native Android app with Java or Kotlin and choose Swift and Objective-C for iOS apps. | This is done by using tools like React Native, Xamarin, and Flutter, where the apps created can be deployed on both Android and iOS. |
| Broader functionality. | Limited functionality. |
| Better store support. | No store support. |
| More scalable. | One Code base. |
| High Performance and better UX. | Faster development |
| Better Quality product development. | Less Costly. |

**Q2 : Discuss different scenarios when to use Native and When to use Cross platform development.**

|  |  |
| --- | --- |
| **Use Native development if** | **Use Cross platform development if** |
| Your application requires full access to all of the phone resources and services. | You are ready to accept less responsive app. |
| You want to build the most responsive application. | The application does not involve complex animation nor deal with complicated logic. |
| You're looking to take full advantage of the mobile phone's hardware. | You have a short window to test an idea and hypothesis in the app market. |
| You want an app that can be easily updated and enhanced with new features in the future. | You want faster development, this is the better option. |
| You have budget to create different apps for different platforms and don’t want to compromise on quality of your product. | You don’t have concern with speed or slowness of you product. |
| You have more time that you can spend to get good quality product. | You have less budget and you cannot afford to have different apps for different platforms. |

**Q3 : List of frameworks/ Tech Stack for cross platform mobile Application development.**

Top Tech Stacks for cross platform for mobile Application development are listed below.

* **React Native**:
  + High performance and speed like native apps
  + Compatible with 3rd-party plugins
  + Live reloading feature
  + Fluid and well responsive UI
  + Good development environment
  + Not prone to bugs
  + Speedy debugging of code
* **Flutter:**
  + Performance similar to native apps
  + Custom built-in widgets
  + Own rendering engine
  + Reduced time for code development
  + Expressive and felxible UI
  + Possible to go beyond mobile
* **Titanium:**
  + It works across all platforms
  + Availability of over 5,000 APIs
  + Live reloading feature
  + Available client-side marketplace modules and cloud-based services
  + It has very large community support
* **Xamarin:** 
  + Fewer bugs
  + High performance
  + Support for MVC and MVVM patterns of design
  + The same user interface as native
  + Automatic test by TestCloud
  + Common app logic
  + Self component store
  + Large community support