Comparison of Cross Mobile Application development platforms

Abstract:

Introduction:

Currently, Field Biologists use a survey mobile application available in both the environments Android and iOS. The source code of the application is developed individually in both the platforms. Two different source codes require 2 different teams with expertise in each platform to maintain and enhance the functionalities of the mobile application. This requires huge amount of effort and expertise and ultimately cost. We aim to utilize the capabilities of Cross Mobile Application development platform to organize and develop survey mobile application. As there are multiple such platforms/tools available in the market. We had evaluated these platforms on multiple factors like pricing, licensing, community support, ease of learning and development, and closeness to native mobile features.

Procedure of Evaluation:

Currently, in the market there are multiple cross platform mobile application development are present. We have chosen 3 most popular platforms for evaluation. These are PhoneGap, Titanium and Xamarin. We have developed basic mobile applications using most essential user interface components like Input Text fields, Spinners, Buttons, Mysql (Sqlite)

File upload/download, Images, Connection to wifi. Though these components were not included in every sample project developed but were made best efforts to incorporate most of them.

Following are the evaluation criteria for each platform in their priority.

1. Licensing: We tried to find a platform which is either open source or is available to student/educational institution.
2. Pricing: Since we do not require to publish our application to any of the app store, we evaluated free version or trial version of the platform only.
3. Learning Curve: Availability of the tutorials, documentation of APIs and prerequisite learnings.
4. Community Support: Is there a developer community to discuss and resolve bugs and errors? Can the errors be easily searched and solved reading other developers post?
5. Native Mobile Features: Do the platform provide device hardware support. Can they make use of device hardware and optimize applications using native Android or iOS features? After development of application how close they resemble if the same app was developed in native platforms.
6. Core Architecture: Is the platform uses webview functionality of native platforms to perform the applications functionality or uses native functionalities to perform native functionalities. Is the organization of application directory structure robust or flexible.
7. Developer Community Reviews: What are the views of other developers on this platform. How others evaluators rate this platform.

PhoneGap:

Positives:

Negatives:

Titanium:

Positives:

Negatives:

Xamarin

Positives:

Negatives: