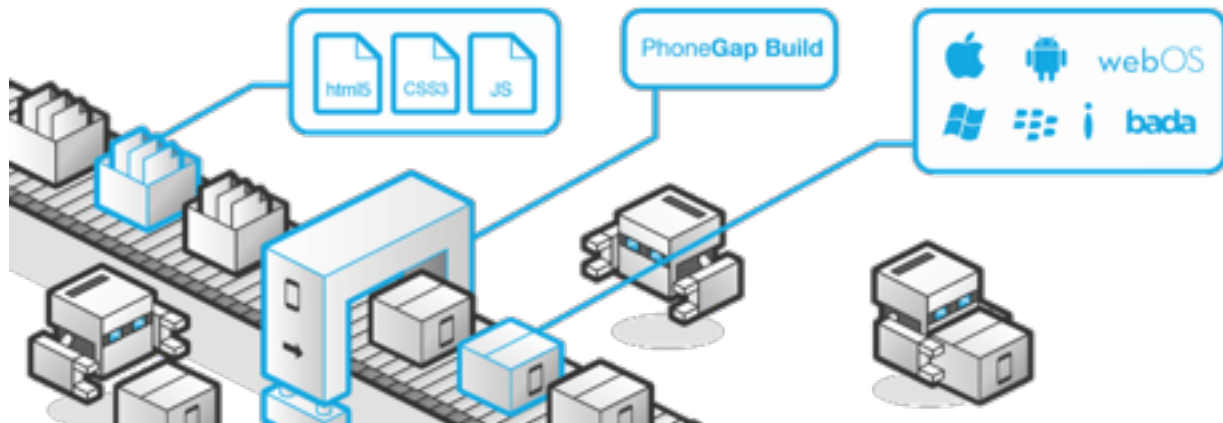


Explain the concept of Hybrid Mobile App Development



The concept of hybrid mobile app development is a single application that is cross-compatible on different mobile OS's such as Android or iOS. The way this is done is the application is being run on a OS, which can be imagined as a kind of browser, and makes the application runnable cross-platform.

Explain the Pros & Cons of using Hybrid Mobile App Development compared to Native App Development

The pros and cons of developing a hybrid mobile app can vary according to what kind of application you are planning on developing. If you are creating a very demanding application you would most probably not consider developing a hybrid app.

Pros:

- Cross OS compatibility (one app all OS's)
- Written in HTML, CSS and Javascript

Cons:

- More demanding as it runs on a platform
- Do not have as full access to the device

Explain about the "building blocks" involved in an ionic Hybrid Application

The Ionic framework uses a number of technologies:

- Angular.JS for logic in the presentation layer

- Cordova for mobile hardware communication
- HTML5, Sass for style and display
- Android Debugging Bridge (ADB) for debugging
- Node.JS for server side code.

As we can see this is very much as we would build a web application, this makes Ionic very interesting for web developers as they will not have to learn any new technologies to work with Ionic.

Explain and demonstrate ways to debug Hybrid Mobile Applications Running on a real device

Ionic has a very intuitive and smart debugging system. You are able to debug your application straight from a browser using a browser console. In order to debug you should run your application you can then access your running device from chrome by typing `chrome://inspect/#devices`.

Explain when and why CORS is a problem for Hybrid Mobile Applications

A hybrid mobile application runs on an embedded browser this causes problems. The problem being that modern contain safety features that block any HTTP request without the same url root to a certain site. In a situation in which you are to make a request to an API with a different root URL, such as the google maps API, the request would fail. In order to fix this we have to specify in our request header that we allow CORS by putting:

`Access-Control-Allow-Origin = *`

Explain how and why it is possible for a Hybrid Application to access native phone devices like location, calendar etc.

This is done with the help of Cordova. Cordova acts as an intermediary for the phone and application. Cordova grants access to the following device API's: <http://cordova.apache.org/docs/en/3.5.0/guide/support/index.html#Platform%20Support>. Cordova works by running the application in an embedded browser (webview).

Explain using an example how your Hybrid Application communicates with a backend and how CORS problems were solved (if any)

