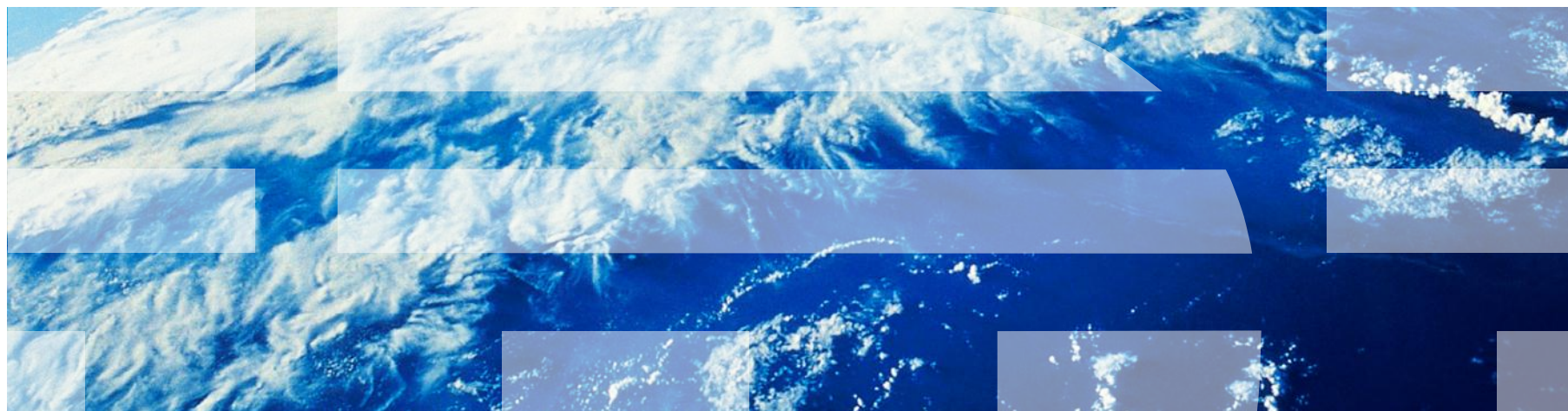


IBM Worklight Foundation V6.2.0 Getting Started

Overview of client technologies



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Presentation purpose

- IBM Worklight® Foundation includes various technologies to help you develop a mobile application.
- Each technology has its advantages and disadvantages.
- You must know which tool to use in any situation.
- The following slides provide an overview of these technologies.
- Each technology is then further covered in one or more training modules.

Agenda

- **Baseline**
- Worklight common controls
- Optimization
- Skins
- Apache Cordova framework
- Native development
- Additional techniques

Baseline

Web-based development

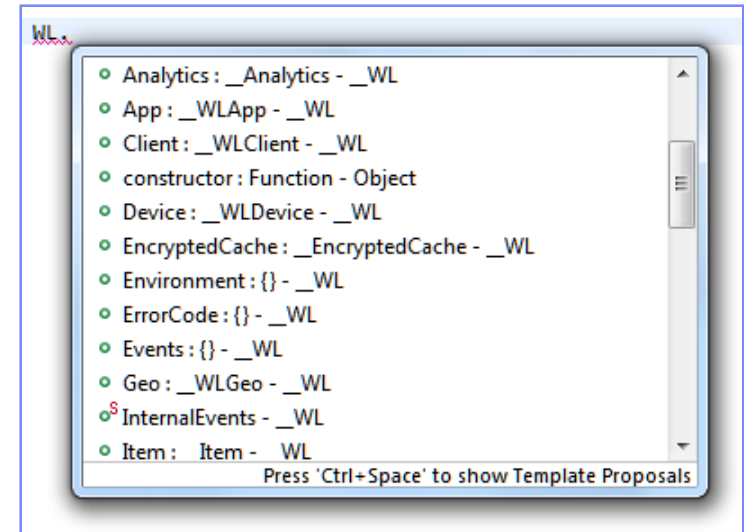
- Worklight apps are developed by using standard web technologies:
 - A single HTML file.
 - JavaScript™.
 - Style sheets and images.
- Worklight apps use the Worklight API to access backend data and server functionality.

```
var invocationData = {
  adapter : this.ADAPTER_NAME,
  procedure : this.Procedures.getAccountTransactions,
  parameters : [{
    name : 'accountKey',
    value : accountKey
  }]
};
WL.Client.invokeProcedure(invocationData, {
  onSuccess: loadAccountTransactionsSuccessHandler.bind(this),
  onFailure: loadAccountTransactionsFailHandler.bind(this)
});
},
```

Worklight common controls

Frequently used UI controls

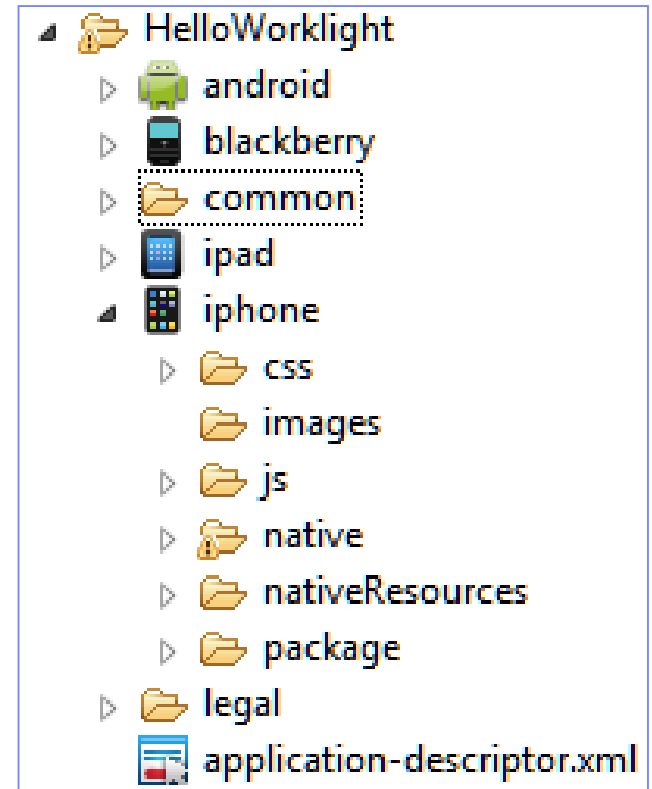
- Some controls are common to most environments. Examples: modal pop-ups, loading screens and tab bars.
- IBM Worklight Foundation provides a JavaScript API to invoke these controls regardless of the environment, and automatically renders them in a native way for each platform.
- For more information, see the *Common UI Controls* training module.



Optimization

Environment-specific code

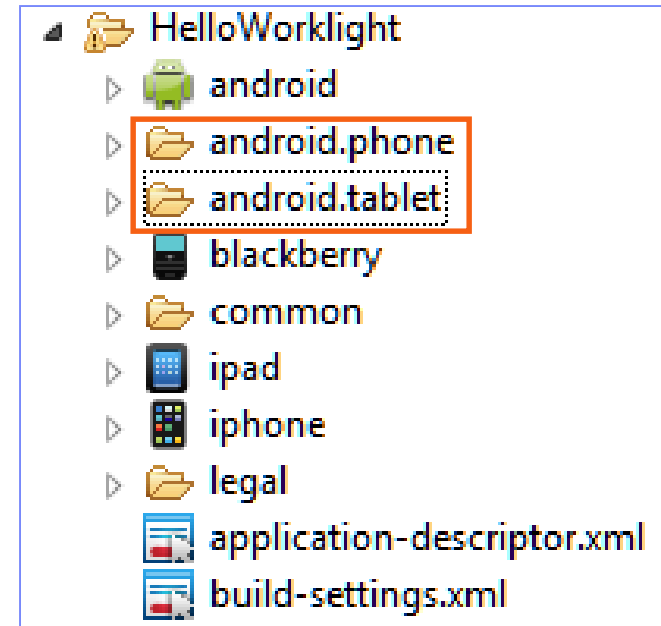
- To achieve maximum adaptation to a specific environment, web resources can be optimized specifically for it.
- For example, an iPhone environment requires an iPhone specific look and feel that can be achieved by extending CSS or JavaScript files.
- IBM Worklight Foundation eases the code maintenance of multiple-environment optimization.
- For more information, see the *Optimizing your application for various environments* training module.



Skins

Multiple form factors in a single app

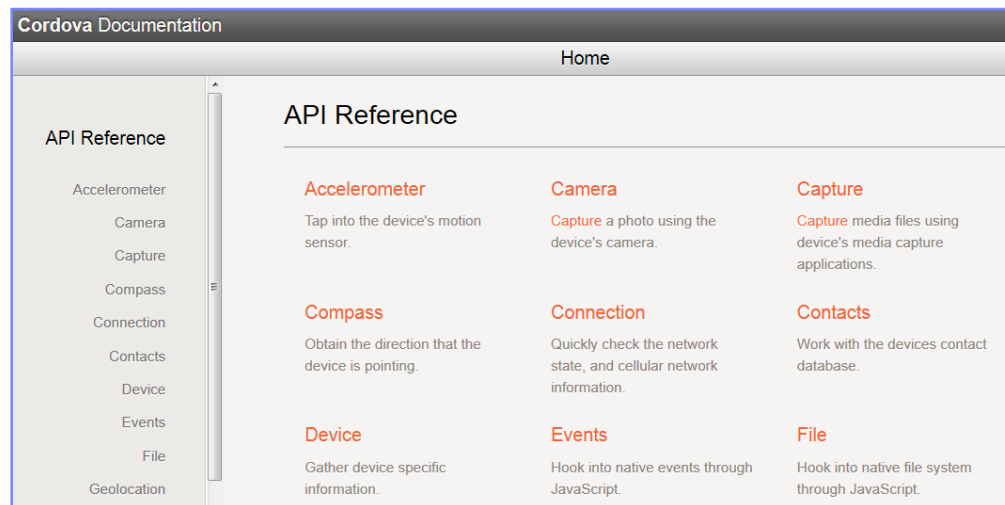
- Skins provide support for multiple form factors in a single executable file for devices of the same OS family.
- Skins are a subvariant of an environment.
- Skins are packaged together in one app.
- The decision on which skin to use is made automatically at run time.
- For more information, see the *Supporting multiple form factors by using Worklight skins* training module.



Apache Cordova framework

Access native mobile APIs

- Cordova - an open source development framework that is based on JavaScript for building multiplatform mobile apps.
- The Worklight Framework uses the Cordova library. Worklight exposes the Cordova APIs so that developers can access native device functions through those services.
- For more information, see the *Apache Cordova overview* training module.



Apache Cordova plug-in Access native libraries

- The Cordova plug-in is an abstraction that allows native components to be called by using a JavaScript API.
- With custom plug-ins, you can add native functions such as an encryption library or computational components and call them using JavaScript.
- By default, a plug-in must be implemented for each supported environment (for example, iPhone).
- Various Cordova plug-ins exist on the market.
- For more information, see the *Adding native functionality to hybrid applications with Apache Cordova plug-in* training modules.

Native page

Enhance applications with a native UI

- IBM Worklight Foundation provides a way to augment web applications with native pages.
- Users can navigate freely between web and native pages, share data between pages, and share a single server session
- For example, contact details can be accessed by using the Apache Cordova API. However, if your application must use the contact application in the device use the Native Page API.
- For more information, see the *Using native pages in hybrid applications* training modules.

```
pickContact : function () {
    WL.NativePage.show(
        'com.mycontacts.NativeContacts',
        onReturnFromNativePage,
        {
            contactname:"John Smith"
        }
    );
}
```

Full native development

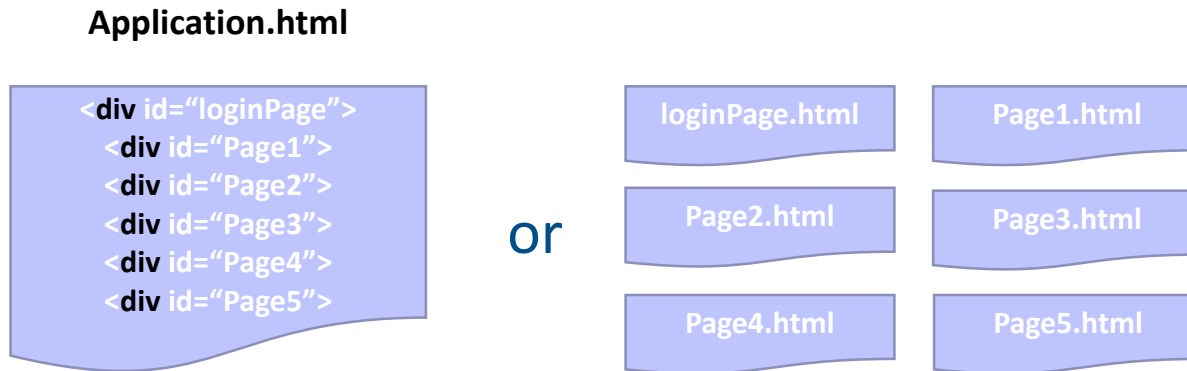
Access the Worklight server from native apps

- If your app requires the full power of the environment, you can develop it purely in native code.
- The drawback is the lack of cross-environment support. Thus, use of this approach is appropriate only if the app is highly interactive (for example, an action game), or requires native UI features throughout the app that cannot be simulated by using JavaScript.
- This approach is also useful when you are deploying existing native apps on the Worklight Server.
- The platform supplies a native Worklight Client API to manage authentication and back-end access, and to benefit from more server functionality.
- For more information, see *Developing native apps in Worklight Getting Started* website at <http://www.ibm.com/mobile-docs>.

Additional techniques

Multi-page applications

- Applications with multiple pages can be built in two ways:
 - A single HTML file that contains all app pages. Pages are `<div>`s that become hidden or shown at run time.
 - A separate HTML file for each application page.



- The first option is better for small apps but is not scalable.
- For more information, see the *Building a multipage application* training module.

Additional techniques

Offline access

- Worklight apps work in concert with the Worklight Server.
- In offline mode, developers can detect app connectivity failures and determine the best course of action.
- Developers can define custom application behavior for offline and online status.
- For more information, see the *Working offline* training module.

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