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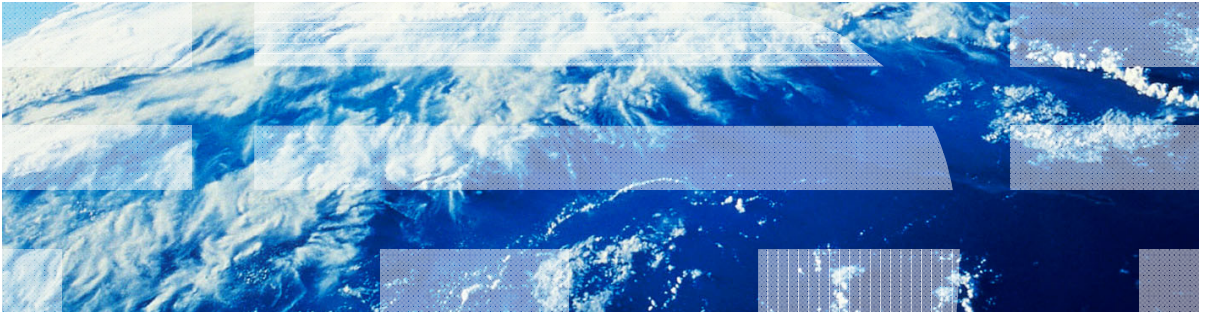
IBM Worklight V5.0.5
Getting Started

Module 7 – Overview of Client Technologies

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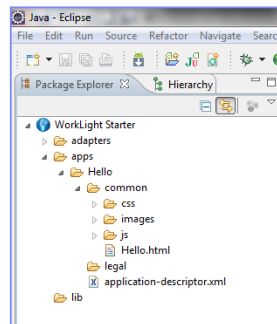
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Presentation purpose

- Worklight® includes a variety of technologies to help you develop a mobile application.

- Each technology has its pros and cons.

- You need to 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.

Baseline
Web-based development

- Worklight apps are developed using standard web technologies:
  - A single HTML file
  - JavaScript
  - Style Sheets & Images

- Worklight apps use the Worklight API to access back-end data and server functionality.
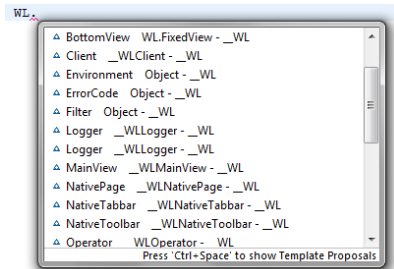
```
var invocationData = {
    adapter : this.ADAPTER_NAME,
    procedure : this.Procedures.getAccountTransactions,
    parameters : [{
        name : 'accountKey',
        value : accountKey
    }]
};
WL.Client.invokeProcedure(invocationData, {
    onSuccess: loadAccountTransactionsSuccessHandler.bind(this),
    onFailure: loadAccountTransactionsFailHandler.bind(this)
});
},
```

Worklight common controls
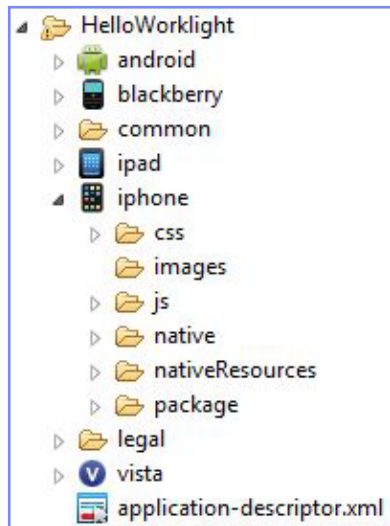## *Frequently used UI controls*

- Some controls are common to most environments. Examples: modal pop-ups, loading screens, and tab bars.

- Worklight provides a JavaScript API to invoke these controls regardless of environment, and automatically renders them in a native way for each platform.

- For further information, see Module 7.1 – Common Controls.

WL.

| △ BottomView   WL.FixedView - __WL |
| △ Client   __WLClient - __WL |
| △ Environment   Object - __WL |
| △ ErrorCode   Object - __WL |
| △ Filter   Object - __WL |
| △ Logger   __WLLogger - __WL |
| △ Logger   __WLLogger - __WL |
| △ MainView   __WLMainView - __WL |
| △ NativePage   __WLNativePage - __WL |
| △ NativeTabbar   __WLNativeTabbar - __WL |
| △ NativeToolbar   __WLNativeToolbar - __WL |
| △ Operator   WLOperator - WL |

Press 'Ctrl+Space' to show Template Proposals

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Optimization
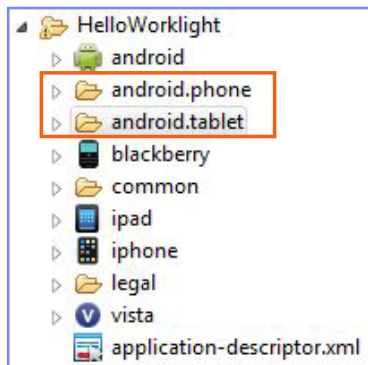## *Environment-specific code*

- 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.

- Worklight eases the code maintenance of multiple environment optimization.

- For further information, see Module 7.2 – Code Optimization for Specific Environments

```
⊿ 🗁 HelloWorklight
  ▷ 🤖 android
  ▷ 📱 blackberry
  ▷ 🗁 common
  ▷ 📱 ipad
  ⊿ 🔡 iphone
    ▷ 🗁 css
      🗁 images
    ▷ 🗁 js
    ▷ 🗁 native
    ▷ 🗁 nativeResources
    ▷ 🗁 package
  ▷ 🗁 legal
  ▷ Ⓥ vista
    🖼 application-descriptor.xml
```

Skins
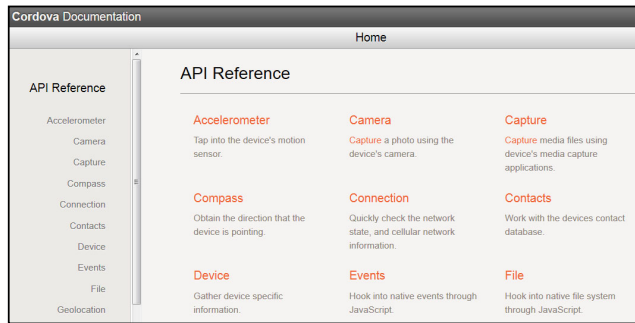# *Multiple form factors in a single app*

- Skins provide support for multiple form factors in a single executable file for devices of the same OS family

- Skins are a sub-variant of an environment

- Skins are packaged together in one app

- The decision on which skin to use is made automatically at runtime

- For further information, see Module 7.3 – Skins

Apache Cordova framework
Access native mobile APIs

- Cordova - an open source JavaScript-based development framework for building multiplatform mobile apps.

- The Worklight Framework makes use of the Cordova library. Worklight exposes the Cordova APIs so that developers can access native device functions through those services.

- For further information, see Module 7.4 – Apache Cordova

Apache Cordova plug-in
Access native libraries

- The Cordova plug-in is an abstraction that allows native components to be called using a JavaScript API.

- Custom plug-ins allow you to 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).

- A variety of Cordova plug-ins exist in the market.

- For further information, see Modules 8.3 & 9.3 – Development of an Apache Cordova plug-in.

Native page
Enhance applications with a native UI

- Worklight 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 using the Apache Cordova API. However, if your application needs to use the contact application in the device use the Native Page API.

- For further information, see Module 7.6 – Combining native and web pages.

```
pickContact : function (){
    WL.NativePage.show(
                'com.mycontacts.NativeContacts',
                onReturnFromNativePage,
                {
                    contactname:"John Smith"
                }
        );
}
```
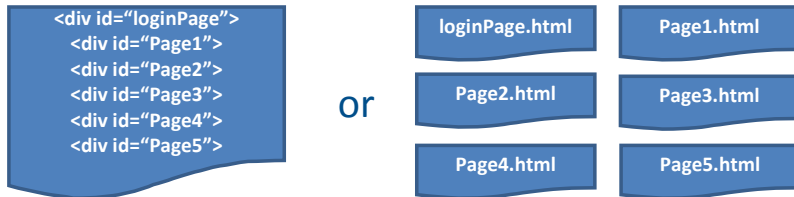
Full native development
Access the Worklight server from native apps

- 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 using JavaScript.

- This approach is also useful when 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 additional server functionality.

- For further information, see Modules 8.2 & 9.2 – Using Worklight API in a fully native application.

Additional techniques
Multi-page applications

- Applications with multiple pages can be built in two ways:

  - A single HTML file containing all app pages. Pages are <div>s that become hidden or shown in runtime

  - A separate HTML file for each application page

<div id="loginPage"> <div id="Page1"> <div id="Page2"> <div id="Page3"> <div id="Page4"> <div id="Page5">	or	loginPage.html	Page1.html
		Page2.html	Page3.html
		Page4.html	Page5.html

- The first option is better for small apps but is not scalable

- For further information, see Module 7.5 – Building a multi page application

Additional techniques
Offline access

- Worklight apps work in concert with the Worklight server.

- Offline mode allows developers to detect app connectivity failures and determine the best course of action.

- Developers can define custom application behavior for offline and online status.

- For further information, see Module 7.7 - Offline access.

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