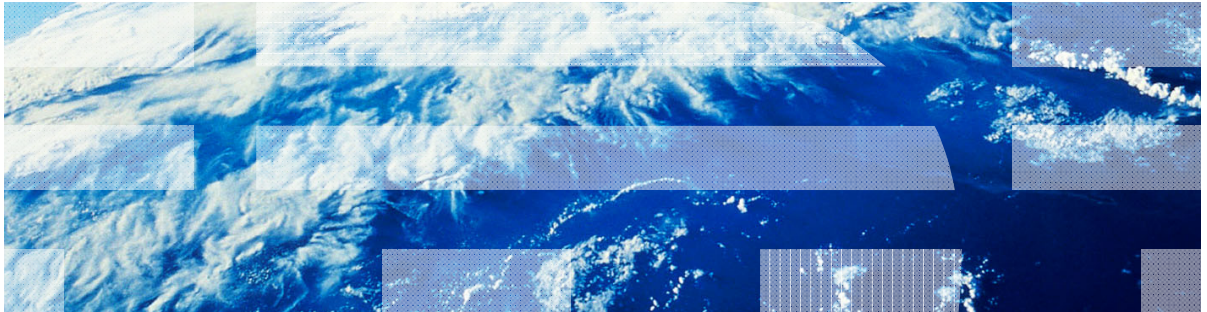


IBM Worklight V5.0.5 Getting Started

Module 13 – Working with UI Frameworks



Trademarks

- IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Worklight is a trademark or registered trademark of Worklight, an IBM Company. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “[Copyright and trademark information](http://www.ibm.com/legal/copytrade.shtml)” at www.ibm.com/legal/copytrade.shtml.
- Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.
- Other company products or service names may be trademarks or service marks of others.
- This document may not be reproduced in whole or in part without the prior written permission of IBM.

About IBM®

- See <http://www.ibm.com/ibm/us/en/>

Agenda

- Working with UI frameworks
- Using jQuery in a Worklight application
- Working with jQuery Mobile
- Working with Sencha Touch
- Working with Dojo Mobile

Working with UI frameworks

- Designing and implementing the UI of your application is a vital part of the development process
- Writing your own CSS style for each component from scratch allows you a very high level of customization, but requires a large amount of resources
- Sometimes it is better to use the existing JavaScript UI frameworks
- This module describes the development of Worklight® applications using three JavaScript UI frameworks:
 - jQuery Mobile
 - Sencha Touch
 - Dojo Mobile

Agenda

- Working with UI frameworks
- Using jQuery in a Worklight application
- Working with jQuery Mobile
- Working with Sencha Touch
- Working with Dojo Mobile

Adding jQuery to the Worklight application

- jQuery is a fast and concise JavaScript framework that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development.
- Worklight client side framework uses jQuery library for internal functionality. By default, the \$ char is assigned to the internal jQuery in the application main JavaScript file.

```
// Worklight comes with the jQuery framework bundled inside.  
window.$ = window.jQuery = WLJQ;
```

- If your application does not require jQuery, or if you want to use a different version of jQuery, you can remove or comment this line out.
- For more information about jQuery, see <http://jquery.com/>

Agenda

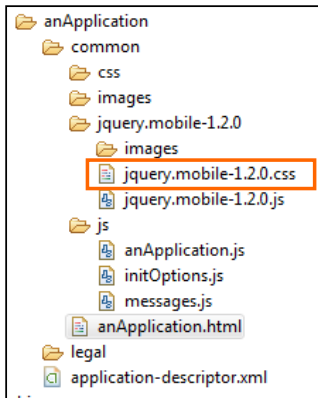
- Working with UI frameworks
- Using jQuery in a Worklight application
- Working with jQuery Mobile
- Working with Sencha Touch
- Working with Dojo Mobile

Working with jQuery Mobile

- jQuery Mobile is a touch-optimized web framework for smartphones and tablets
- jQuery Mobile requires jQuery to run
- You can download the required components at <http://jquerymobile.com/download/> or use the sample project found at the end of this module as a reference
- The required jQuery Mobile components are located in the .js and .css files. Additional style images can optionally be added.

Working with jQuery Mobile

- Add the jQuery Mobile components to your application and reference them in the main HTML file in the following order:



```
<html>
<head>
  <meta charset="utf-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-
  <title>anApplication</title>
  <link rel="shortcut icon" href="images/favicon.png" />
  <link rel="apple-touch-icon" href="images/apple-touch-icon.png" />
  <link rel="stylesheet" href="jquery.mobile-1.2.0/jquery.mobile-1.2.0.css" />
</head>
<body id="content" style="display: none">

  <!-- application UI goes here -->

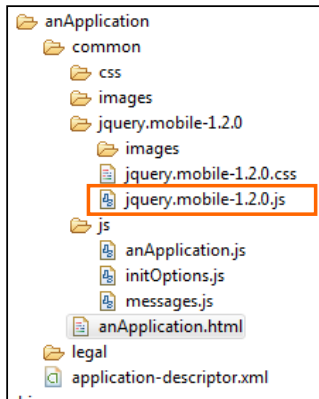
  <script src="js/initOptions.js"></script>
  <script src="js/anApplication.js"></script>
  <script src="js/messages.js"></script>
  <script src="jquery.mobile-1.2.0/jquery.mobile-1.2.0.js"></script>
</body>
</html>
```



Add jQuery Mobile CSS file in the
<head> element

Working with jQuery Mobile

- Add the jQuery Mobile components to your application and reference them in the main HTML file in the following order:



```
<html>
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-
    <title>anApplication</title>
    <link rel="shortcut icon" href="images/favicon.png" />
    <link rel="apple-touch-icon" href="images/apple-touch-icon.png" />
    <link rel="stylesheet" href="jquery.mobile-1.2.0/jquery.mobile-1.2.0.css" />
  </head>
  <body id="content" style="display: none">

    <!-- application UI goes here -->

    <script src="js/initOptions.js"></script>
    <script src="js/anApplication.js"></script>
    <script src="js/messages.js"></script>
    <script src="jquery.mobile-1.2.0/jquery.mobile-1.2.0.js"></script>
  </body>
</html>
```

Add jQuery Mobile JS file before closing the <body> element

Working with jQuery Mobile

- The basic structure of a screen in a jQuery Mobile application is as follows:

```
<div data-role="page">  
  <div data-role="header">...</div>  
  <div data-role="content">...</div>  
  <div data-role="footer">...</div>  
</div>
```

- Header and footer elements are optional
- The page is rendered by a jQuery Mobile at runtime
- All the required styles are automatically applied
- You can create your own styles and themes using the ThemeRoller tool at <http://jquerymobile.com/themeroller/>

Working with jQuery Mobile

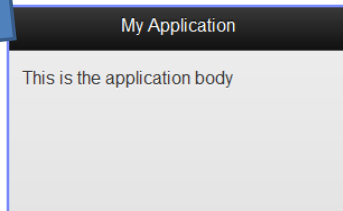
- WYSIWYG editor is provided for jQuery Mobile widgets for developer convenience



Working with jQuery Mobile

- By using jQuery Mobile, you can create mobile application screens in a few lines of code

```
<div data-role="page">  
  <div data-role="header"><h2>My Application</h2></div>  
  <div data-role="content">This is the application body</div>  
</div>
```



- For more information and documentation, see <http://jquerymobile.com/demos>

Agenda

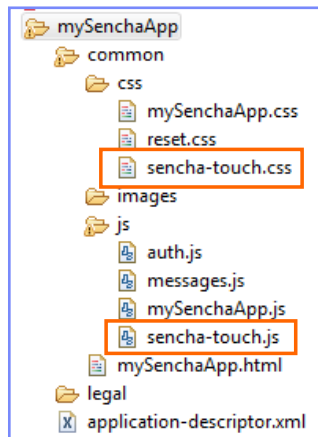
- Working with UI frameworks
- Using jQuery in a Worklight application
- Working with jQuery Mobile
- Working with Sencha Touch
- Working with Dojo Mobile

Working with Sencha Touch

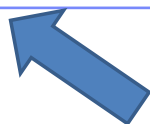
- Sencha Touch allows developers to build mobile web apps that look and feel native on iPhone, Android and BlackBerry touch devices
- Sencha Touch is developed and maintained by Sencha Inc.
- To download the Sencha Touch package, visit <http://www.sencha.com/products/touch/>
- Although the Sencha Touch package consists of many files, you need only two of them to begin development: `sencha-touch.js` and `sencha-touch.css`
- Use the sample project found at the end of this module as a reference

Working with Sencha Touch

- Add the Sencha Touch components to your application and add the references to the <head> section of the main HTML



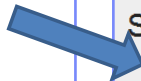
```
<script src="js/sencha-touch.js" type="text/javascript"></script>  
<link href="css/sencha-touch.css" rel="stylesheet" type="text/css" />
```



Working with Sencha Touch

- When working with the Sencha Touch framework, you build your application UI using JavaScript

```
new Ext.Application({
  launch: function() {
    new Ext.Panel({
      fullscreen: true,
      dockedItems: [{xtype: 'toolbar', title: 'Sencha Touch App'}],
      layout: 'fit',
      styleHtmlContent: true,
      html: '<h2>This is a simple Sencha Touch App</h2>'
    });
  }
});
```



- Visit Sencha Touch resources and learning center at <http://www.sencha.com/learn/touch/>

Agenda

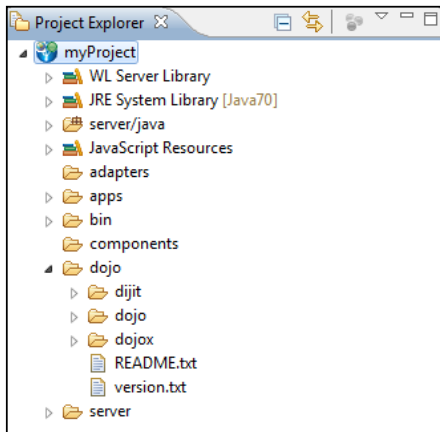
- Working with UI frameworks
- Using jQuery in a Worklight application
- Working with jQuery Mobile
- Working with Sencha Touch
- Working with Dojo Mobile

Working with Dojo Mobile

- You can use Dojo Mobile to rapidly develop mobile web applications on iPhone, iPod Touch, iPad, Android, and BlackBerry touch devices, with the appearance of the native device.
- Dojo Mobile is part of the Dojo Toolkit, which is developed and maintained by the Dojo Foundation.
 - For more information about the Dojo Toolkit, go to the Dojo Toolkit website at <http://dojotoolkit.org/documentation/>.
- Worklight Studio includes a Dojo Toolkit package and tools that you can use to develop your mobile web applications.
- Use the sample project found at the end of this module as a reference.

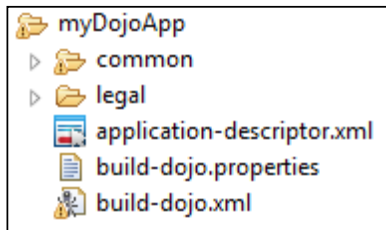
Place the Dojo Toolkit package into your project

- Add the Dojo Toolkit to your application to place the Dojo Toolkit package into your project. This package contains compressed layers.



Deployment configuration with Ant

- Add the Dojo Toolkit to your application to create an Ant build file in your application directory. IBM Worklight Studio automatically uses the `build-dojoxml` file to specify which parts of the Dojo Toolkit package, such as compressed layers and resources, must be deployed with your application.



- Note:** The `build-dojoxml` file stores the configuration that must be deployed to run a basic Dojo Mobile application. You can modify this build file to add other layers to deploy with your application.

```

<patternset id="dojo.resources.layers">
  <include name="dojo/dojo.js.compressed.js"/>
  <include name="dojo/core-veb-layer.js.compressed.js"/>
  <!--
    <include name="dojo/dijit-layer.js.compressed.js"/>
    <include name="dojo/calendar-layer.js.compressed.js"/>
    <include name="dojo/charting-layer.js.compressed.js"/>
    <include name="dojo/dggauges-layer.js.compressed.js"/>
    <include name="dojo/graphics-layer.js.compressed.js"/>
    <include name="dojo/treemap-layer.js.compressed.js"/>
  -->
</patternset>
  
```

Create custom layers

- To create custom layers, you can replace the provided Dojo Toolkit package in your project with a Dojo Toolkit SDK.
- To obtain a Dojo Toolkit SDK, go to the Dojo Toolkit website at <http://dojotoolkit.org/download/> and download the version that you want to use.
- Update the `build-dojoproperties` file to indicate where to pick up the Dojo Toolkit files from.
 - Update the `dojo.workspaceRoot` property value to pick up the files from another directory in your project, or from another project in your workspace.

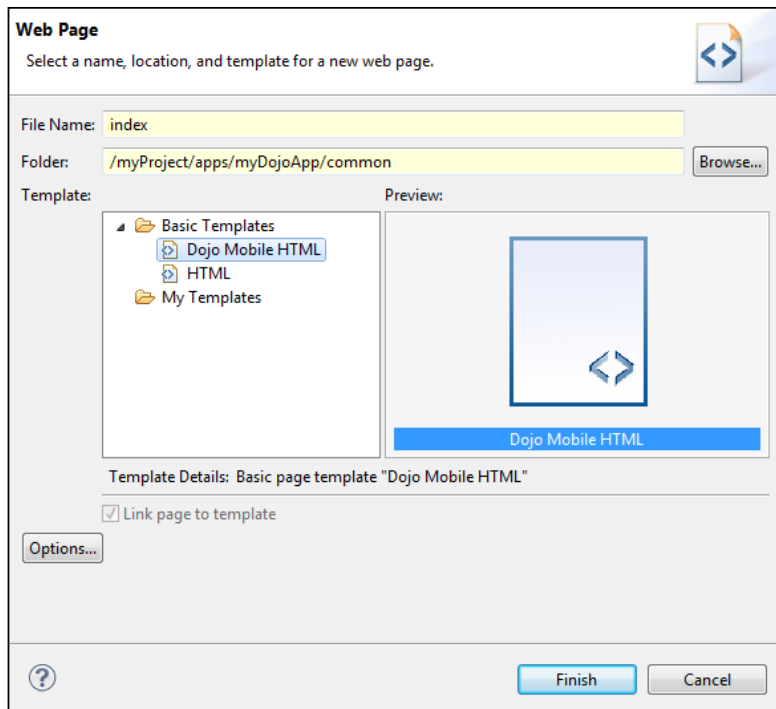
```
dojo.workspaceRoot=/myProject/dojo
```

- Use the `dojo.root` property instead if the directory is not in your workspace.

```
dojo.root=C\:/dojo
```

Using a predefined Dojo Mobile HTML template

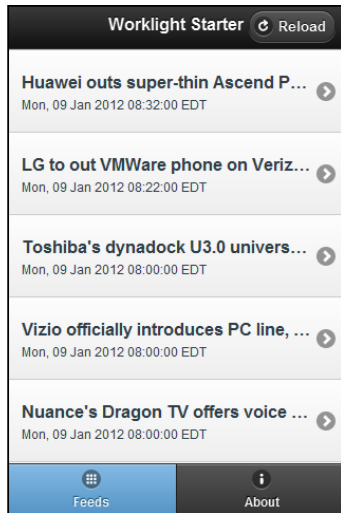
- You can create mobile web pages with a predefined Dojo Mobile HTML template.
- Using this template prepares the web page to use Dojo Mobile.



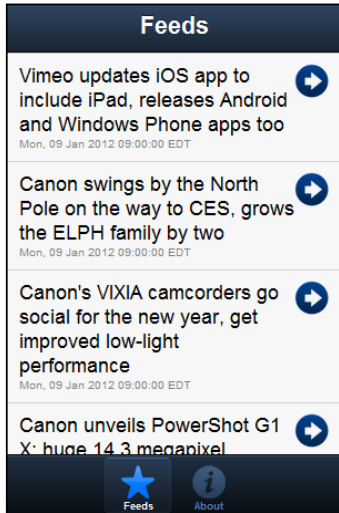
Samples

- Download jQuery Mobile, Sencha Touch, and Dojo Mobile versions of Worklight Starter from the Getting Started page of the IBM Worklight documentation website at <http://www.ibm.com/mobile-docs>

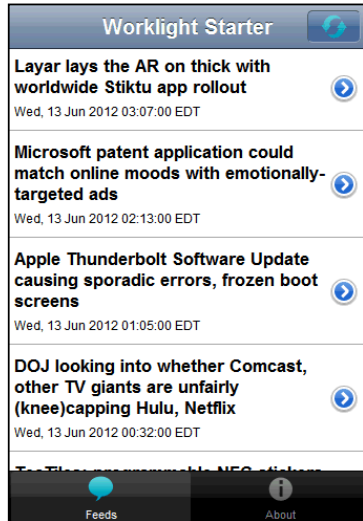
jQuery Mobile



Sencha Touch



Dojo Mobile



Notices

- Permission for the use of these publications is granted subject to these terms and conditions.
- This information was developed for products and services offered in the U.S.A.
- IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.
- IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:
 - IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.
- For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:
 - Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan Ltd.
1623-14, Shimotsuruma, Yamato-shi
Kanagawa 242-8502 Japan
- **The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:**
INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.
- This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.
- Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.
- IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.
- Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:
 - IBM Corporation
Dept F6, Bldg 1
294 Route 100
Somers NY 10589-3216
USA
- Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.
- The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.
- Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

COPYRIGHT LICENSE:

- This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.
- Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:
© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_. All rights reserved.

Support and comments

- For the entire IBM Worklight documentation set, training material and online forums where you can post questions, see the IBM website at:
 - <http://www.ibm.com/mobile-docs>
- **Support**
 - Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express. For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, visit the Passport Advantage website at:
 - <http://www.ibm.com/software/passportadvantage>
 - If you have a Software Subscription and Support in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. For additional details, consult your IBM Software Support Handbook at:
 - <http://www.ibm.com/support/handbook>
- **Comments**
 - We appreciate your comments about this publication. Please comment on specific errors or omissions, accuracy, organization, subject matter, or completeness of this document. The comments you send should pertain to only the information in this manual or product and the way in which the information is presented.
 - For technical questions and information about products and prices, please contact your IBM branch office, your IBM business partner, or your authorized remarketer.
 - When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you. IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you state.
 - Thank you for your support.
 - Submit your comments in the IBM Worklight forums at:
 - <https://www.ibm.com/developerworks/mobile/mobileforum.html>
 - If you would like a response from IBM, please provide the following information:
 - Name
 - Address
 - Company or Organization
 - Phone No.
 - Email address

Thank You

