GWT Training

Course Summary

Description

The Google Web Toolkit is a framework for creating rich AJAX applications using Java. If you want rich AJAX user interfaces, but prefer coding in Java over JavaScript then GWT is the tool for you.

Objectives
At the end of this course, students will be able to:

- Build non-trivial AJAX applications using GWT

Topics

- Overview
- Understanding Modules
- GWT widget library
- Event Handling
- Images
- Connecting to Data and Back-end Services
- Creating Web-friendly applications
- Performance Concerns

- Miscellaneous API's
- Creating Custom Widgets
- 3rd Party Widgets
- Google Gears
- JSNI
- Integrating with other technologies
- Miscellaneous
- Advanced Topics

Audience

This course is designed for java developers interested in creating web 2.0-ready AJAX front end.

Prerequisites

Students should have experience with Core Java before attending this course.

Duration

Five days

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Course Outline

I. **Overview**
   A. What is GWT?
   B. GWT compiler
   C. GWT emulator (hosted mode)
   D. GWT compared to other web frameworks
   E. GWT compared to other AJAX frameworks
   F. Pros and cons of GWT

II. **Understanding Modules**
   A. What is a module?
   B. Recommended module structure
   C. Custom module structure
   D. Adapting GWT into an existing web app structure
   E. Inheriting modules

III. **GWT widget library**
   A. Basic widgets
       1. Label
       2. Button
       3. TextBox
       4. Hyperlink
   B. Text widgets
       1. Label
       2. HTML
       3. TextBox
       4. Hidden
       5. PasswordTextBox
       6. TextArea
       7. RichTextArea
   C. Simple Layouts
       1. VerticalPanel
       2. HorizontalPanel
       3. FlowPanel
       4. DockPanel
   D. More Layout Panels
       1. TabPanel
       2. StackPanel (Accordion)
       3. SplitPanel
       4. DeckPanel
   E. Tables and trees
       1. Grid
       2. FlexTable
       3. Tree

   F. Lists and checkboxes
       1. ListBox
       2. RadioButton
       3. CheckBox
       4. SuggestBox
   G. Popups, dialogs and menus
       1. PopupPanel
       2. DisclosurePanel
       3. DialogBox
       4. Menu
       5. DecoratorPanel
   H. Other Panels
       1. ScrollPanel
       2. HTMLPanel
       3. AbsolutePanel
       4. FocusPanel

IV. **Event Handling**
   A. Understanding Listeners
   B. Mouse Events
   C. Key Events
   D. Click Events
   E. Other Events

V. **Images**
   A. Image Widget
   B. Pre-fetching Image
   C. Bundling Images

VI. **Connecting to Data and Back-end Services**
   A. AJAX Overview
       1. Connectivity options
       2. Asynchronous callbacks
       3. The RequestBuilder class
       4. Performance issues
   B. GWT RPC
       1. Remote and Async Interfaces
       2. Servlet Implementation
       3. Asynchronous Callbacks
       4. Exception Handling
       5. GWT Serialization
   C. Invoking XML Web Services
   D. Invoking JSON Services

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Course Outline (cont'd)

VII. Creating Web-friendly applications
A. Creating book-markable pages
B. History and the back button

VIII. Performance Concerns
A. Cache versus nocache
B. Cross-Product Compilation
C. Image Bundling
D. Lazy-loading widgets
E. Pre-fetching
F. Obfuscation

IX. Miscellaneous API's
A. Cookies
B. Timers
C. Random
D. Window and Location
E. The GWT class

X. Creating Custom Widgets
A. Composites
B. From Scratch using Java
C. Using JavaScript
D. Calendar widget
E. DatePicker widget

XI. 3rd Party Widgets
A. MyGWT
B. Ext GWT
C. GWT Widget Library
D. GWT Drag and Drop
E. The GWT Incubator

XII. Google Gears
A. Occasionally connected apps
B. Local SQL
C. Local Documents
D. Background Processing

XIII. JSNI
A. JavaScriptObject
B. Implement a Java native using JavaScript
C. Call from JavaScript into Java
D. Call from Java into JavaScript

E. Sharing Objects between Java and JavaScript

XIV. Integrating with other technologies
A. GWT with JSP
B. GWT with JSF
C. GWT with Struts
D. Evolving legacy apps to GWT

XV. Miscellaneous
A. Debugging GWT applications
B. Security Issues
C. Image Bundles
D. Internationalization
E. MVC and Data Binding
F. 5 GWT Hidden Gems
G. 5 GWT Pitfalls
H. Unit testing GWT modules
I. GWT and CSS

XVI. Advanced Topics
A. Deferred Binding: The Magic GWT.create()
B. Low-level event handling
C. Manipulating the DOM directly
D. Command,DeferredCommand, IncrementalCommand