... to Your Success!"

Comprehensive GWT Training

Course Summary

Description

This comprehensive GWT training course combines our introductory and advanced Google Web Toolkit courses to provide a solid week of detailed hands-on GWT training.

Objectives

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

- Understand the challenges of Ajax programming and how GWT addresses them.
- Learn about GWT infrastructure, projects and code artifacts.
- Learn to use GWT widgets, panels, images, events, listeners to build Ajax forms.
- Learn to use GWT Utility and framework classes.
- Learn to incorporate history and bookmarks in your front-ends.
- Learn about GWT's RPC protocol and how to use it.
- Learn to create and use modules in GWT, own or external.
- Learn to use advanced panels, more widgets, trees in GWT.
- Learn to use RichTextArea for styled editing in GWT.

- Learn to use CSS styling of GWT Widgets.
- Learn to develop own composite widgets.
- Learn to develop and execute tests and benchmarks in GWT.
- Discover the GWT's Java Emulator, its capabilities and limitations.
- Learn to use GWT's DOM management.
- Learn to use JSON within GWT.
- Learn to retrieve and show external URLs in GWT forms.
- Learn the mechanics of integrating Javascript with Java.
- Learn advanced connectivity mechanisms, polling and related concepts.
- Learn some best practices on performance and avoiding pit falls.

Topics

- Ajax and GWT
- Getting Started with GWT
- GWT User Interfaces
- Core GWT Widgets
- Organizing User Interfaces in GWT
- Event Handling in GWT
- Using Images in GWT
- Executing Hosted vs. Web Mode in GWT
- History and Bookmarks in GWT
- The Film Rental Project Domain in GWT
- GWT Utility Classes
- RPC Protocol in GWT
- Using Modules in GWT

- More on GWT User Interfaces
- Styling with CSS in GWT
- Creating Composite GWT Widgets
- Testing and Debugging GWT modules in GWT
- GWT Java Emulation
- Advanced GWT Connectivity
- Client-Side RPC Architecture in GWT
- More Server Integration Options in GWT
- GWT JavaScript Native Interface
- GWT Best Practices

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically



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Course Summary (cont'd)

Audience

This class is designed for java developers.

Prerequisites

Experience in the following areas is required:

- Fair knowledge of Java programming language
- Basic understanding HTML, CSS, Javascript and their relationships

Experience in the following areas would be beneficial.

- Some foundation in widget-based Form development using events
- Basic knowledge of HTTP protocol

Duration

Five days



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Course Outline

I. Ajax and GWT

- A. Ajax Emergence
- B. Ajax Challenges
- C. Motivations behind GWT
- D. GWT Solution
- E. What is GWT?

II. Getting Started with GWT

- A. Getting Started with GWT
- B. Setup GWT Environment
- C. Creating A Project
- D. A GWT Project Structure
- E. Hosted versus Web Mode

III. GWT User Interfaces

- A. GWT User Interfaces
- B. A Basic User Interface
- C. GWT Module Entry Point
- D. Creating and Configuring Widgets
- E. Laying out your Widgets
- F. Using the RootPanel
- G. Basic Styling
- H. Modifying GWT Code

IV. Core GWT Widgets

- A. GWT Widgets
- B. Button Widget
- C. GWT Hyperlinks
- D. Text Widgets
- E. Selection Widgets
- F. Listing Widgets
- G. Widget Behavior
- H. Configuring Widgets

V. Organizing User Interfaces in GWT

- A. GWT Layouts
- B. Organize Widgets into Panels
- C. Various GWT Layouts
- D. FlowingPanel Layout
- E. DockingPanel Layout
- F. Using FlexTable
- G. Using Grid
- H. Using PopupPanel
- Dialog Boxes
- J. The Disclosure Panel

VI. Event Handling in GWT

- A. Event Handling in GWT
- B. GWT Event Model
- C. Using Event Listeners
- D. Listener Adapters
- E. Types of Events
- F. Keyboard Events
- G. Mouse Events
- H. Tab Events
- **Table Cell Events**
- J. Browser Differences

VII. Using Images in GWT

- A. Using Images in GWT
- B. GWT Image Widget
- C. Prefetching Images
- D. Using Image Bundles

VIII. Executing Hosted vs. Web Mode in GWT

- A. Hosted versus Web Mode in GWT
- B. Page Loading Steps in Hosted Mode
- C. Running in Web Mode
- D. GWT Generated Files
- E. Obfuscation in GWT Generated Files
- F. GWT Deployment

IX. History and Bookmarks in GWT

- A. History and Bookmarks in GWT Ajax
- B. Creating Bookmarked Pages
- C. The History TokenD. The History Listener
- E. Reacting to Back and Forward buttons

X. The Film Rental Project Domain in GWT

A. Film Rental Project in GWT

XI. GWT Utility Classes

- A. GWT Utility Classes
- B. GWT Cookies
- C. GWT Random Class
- D. Animation in GWT
- E. Uploading Files in GWT
- F. The GWT class
- G. The GWT Window class
- H. The GWT Location class
- The GWT Timer class

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Course Outline (cont'd)

XII. RPC Protocol in GWT

- A. RPC Protocol in GWT
- B. Why a New Protocol?
- C. Placing Code Components
- D. RemoteService Interface
- E. RemoteServiceServlet Interface
- F. The AsyncCallback Interface
- G. RPC Events

XIII. Using Modules in GWT

- A. GWT Modules
- B. Module Structure
- C. Module Paths and Resources
- D. Use External Modules
- E. Modularization within GWT
- F. Modularizing An Application
- G. Setting paths and resources in GWT Modules

XIV. More on GWT User Interfaces

- A. More on GWT User Interfaces
- B. Using PushButton
- C. Using DecoratorPanel
- D. Using AbsolutePanel
- E. HTMLPanel
- F. FocusPanel
- G. Split Panels
- H. Using StackPanel
- I. Using TabPanel
- J. Using DeckPanel
- K. Using Menus in GWT
- L. Using a Tree in GWT
- M. Using SuggestBox
- N. GWT RichTextArea Editing

XV. Styling with CSS in GWT

- A. Styling with CSS in GWT
- B. Providing Styles to Widgets
- C. Dependent Styles in Widgets

XVI. Creating Composite GWT Widgets

- A. Composite GWT Widgets
- B. Develop Composite Widgets
- C. Using Composite Widgets

XVII. Testing and Debugging GWT modules in GWT

- A. Testing and Debugging GWT modules
- B. JUnit Testing Concepts

- C. GWT Unit Testing with GWTTestCase
- D. Benchmarking with GWT
- E. Benchmarking own Data Services
- F. GWT System Testing
- G. Testing Practices for GWT

XVIII. GWT Java Emulation

- A. Java Emulation in GWT
- B. Java Language Subset in GWT
- C. Java Library Support in GWT
- D. Available Java Classes and Features in GWT
- E. Restrications on Java in GWT

XIX. Advanced GWT Connectivity

- A. Advanced GWT Connectivity
- B. Stateful and Stateless Servers
- C. GWT Serialization
- D. Using Stateful Servers
- E. Handle Exceptions

XX. Client-Side RPC Architecture in GWT

- A. Client-Side RPC Architecture
- B. Client-Side Pull versus Push
- C. Polling Protocols

XXI. More Server Integration Options in GWT

- A. More Server Integration Options in GWT
- B. Manipulate XML DOM
- C. Use and Parse JSON
- D. JSON Types in GWT
- E. Using JSONP
- F. Making HTTP Requests

XXII. GWT JavaScript Native Interface

- A. GWT JavaScript Native Interface
- B. Invoke JSNI from Java
- C. Invoke Javascript from within Java
- D. Java Callback from external Javascript
- E. Use Javasript Objects in Java
- F. Using JavaScriptObject

XXIII. GWT Best Practices

- A. Security Issues
- B. Performance Concerns
- C. The GWT IncrementalCommand class
- D. Caching in GWT
- E. GWT Design Considerations
- F. GWT Pitfalls and Issues

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