Introduction to GWT

Google Web Toolkit (GWT) allows Java developers to create Web 2.0-ready Ajax front ends. GWT compiles these Java artifacts into optimized JavaScript for all major browsers. This intensive, hands-on training course provides students a foundation in developing front-end modules with GWT widgets, panels, and events. Students will also learn how to work with images and client bundles as well as how to incorporate history and bookmarks in their Ajax applications. The course continues with a chapter on GWT Utility classes that make it easy to work with cookies, animation, file uploads, and timers. The course ends with coverage of GWT's remote procedure call mechanism.

Course Objectives:

- Describe the challenges of Ajax programming and how GWT addresses them.
- Setup and create projects that use GWT.
- Create and configure basic GWT widgets to design user interfaces.
- Organize GWT widgets into properly laid out user interfaces using panels.
- Write and register event handlers.
- Use images and client bundles in GWT.
- Deploy and run GWT applications in Hosted and Web Modes.
- Incorporate history and bookmarks in your front-ends.
- Use GWT Utility classes to handle animation, cookies, file uploads, and more.
- Distribute your UI logic to the client and the business logic to the server using GWT RPC.

Audience: Java developers who wish to quickly get to create Ajax application with the Google Web Toolkit.

Prerequisites: Java programming experience is required. Basic knowledge of HTML, CSS, and JavaScript is recommended. Previous experience doing widget-based Form development using events as well as HTTP exposure is beneficial.

Number of Days: 3 days

1 The GWT Concept
Dynamic HTML
The GWT Solution
So What is GWT?
The GWT Compiler
GWT Design Axioms
Getting Started with GWT
Creating a GWT Project
A GWT Project Structure
Executing a GWT Project
Using GWT with Legacy Web Apps
GWT Module Configuration
GWT Module Entry Point
Development Mode vs. Web Mode

2 GWT User Interfaces
GWT User Interfaces
Creating and Configuring Widgets
Widget Heirarchy
Widget Behavior
Using the RootPanel
Basic Styling
Some Basic Widgets

3 Organizing User Interfaces in GWT
Laying out Widgets into Panels
Various GWT Layouts
FlowPanel
HorizontalPanel and VerticalPanel
The RootPanel

DockPanel Layout
Grid
FlexTable
ScrollPanel
PopupPanel and DecoratedPopupPanel
Dialog Boxes
The DisclosurePanel

4 Event Handling in GWT
Event Handling in User Interfaces
The GWT Event Model
Using Event Handlers
Keyboard Events
Mouse and Click Events
Tab Events
Table Cell Events
FormPanel Events

5 Images and Resources
Using Images in GWT
The GWT Image Widget
Image Events
Prefetching Images
Using ImageBundle and ClientBundle
Creating a Client Bundle for Images and Text
Using a Client Bundle
More on Client Bundles

6 GWT Utility Classes
GWT and Cookies
The GWT Random Class
Animation in GWT
Uploading Files in GWT
The GWT Class
The GWT Window Class
The Window.Location Class
The GWT Timer Class

7 History and Bookmarks in GWT
History and Bookmarks in GWT
Using Hyperlink Widgets
Managing History
The History Token
Adding New History Items
The History Handler
Handling Bookmarks

8 RPC Protocol in GWT
Why a New Protocol?
RPC Protocol in GWT
GWT RPC Basics
Steps to RPC: Code Components
RPC Components
Setting the Servlet Path in a Module
Creating an Invocation Target
RPC Events
No Synchronous RPC in GWT
Data Serialization

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