Web Development using Grails

Course Summary

Description
This course teaches experienced web developers how to use the Grails framework to rapidly create sophisticated web applications.

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

- Develop model-view-controller web applications using Grails
- Access relational databases from Grails
- Work with existing Java classes and libraries
- Build unit and functional tests for web applications

Topics

- Groovy Fundamentals
- Grails Project Structure
- Application Entities
- Scaffolding
- Grails Controllers
- Groovy Server Pages
- Adding Ajax Support
- Services and Jobs
- Java Integration

Prerequisites
Students should be familiar with web development in Java, including servlets, JSPs, and database access. Knowledge of Groovy is assumed but reviewed.

Duration
Four days
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Course Outline

I. Groovy Fundamentals
   A. Differences between Groovy and Java
   B. Declaring classes
   C. Using assertions
   D. Groovy Strings
   E. Closures
   F. Lists and Maps
   G. Expando Objects
   H. Ranges
   I. Metaprogramming
   J. Builders

II. Grails Project Structure
    A. Overview of a Grails project
    B. Directories for model classes, controllers, and views
    C. Data source configuration
    D. Logging
    E. Command line utilities
    F. IDE integration

III. Application Entities
     A. Object-Relational Mapping with GORM
     B. Optional properties
     C. Constraints and validation
     D. Modeling relationships
     E. Performing CRUD operations
     F. Dynamic queries
     G. Connection to Hibernate

IV. Scaffolding
    A. Dynamic scaffolding
    B. Working with the dynamic operations
    C. Static scaffolding
    D. Generating controllers
    E. Generating views

V. Grails Controllers
   A. Setting the default action
   B. Accessing request attributes
   C. Flash scope
   D. Data binding and type conversion
   E. Rendering a response
   F. Using action interception

VI. Groovy Server Pages
    A. Groovy scriptlets
    B. Built-in Grails tags
    C. Dynamic tags
    D. Layouts and templates
    E. Pagination
    F. Creating custom tags

VII. Adding Ajax Support
     A. Basics of Ajax
     B. Handling events
     C. Ajax-supporting tags

VIII. Services and Jobs
      A. Transactions
      B. Services and dependency injection

IX. Java Integration
    A. ORM integration with Hibernate
    B. Dependency injection with Spring
    C. Working with legacy databases

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