

Mastering Groovy and Grails Development

Course Summary

Description

Groovy is a dynamic scripting and programming language for the Java platform. It combines the dynamic features of modern scripting languages such as Ruby and Python with familiar Java syntax. To quote one of the Groovy developers: "Groovy is what Java would have been if it had been created in the 21st century."

Grails is a web application framework based on Groovy for the Java platform. It combines the dynamic features of Groovy with the high productivity characteristics of Rails.

This course introduces the Java developer to the Groovy language. The course focuses on understanding the internals of how Groovy works in addition to understanding the Groovy language syntax. After taking this course developers will understand the Groovy syntax and be able to leverage existing Java classes within Groovy.

The course then focuses on understanding the internals of how Grails works in addition to understanding the components and architecture of the framework. After taking this course developers will understand the Grails framework and how it increases productivity.

This class combines lecture with a unifying, hands-on experience, and open discussion that will help the developer quickly understand the benefits of Grails and how to use the framework.

Objectives

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

- Write applications using Groovy.
- Understand how Groovy operates within the Java Virtual Machine.
- Incorporate existing Java classes and libraries within Groovy applications.
- Learn to add new methods and member variable to existing Java or Groovy classes dynamically.
- Understand the role of Closures within Groovy.
- Take advantage of Groovy's simplified object configuration syntax.
- Learn how to override operators for Groovy or Java classes
- Understand the concept of Metaprogramming and how to leverage it to simplify application development.
- Explore Groovy's Regular Expression syntax for easily managing String processing
- Write applications using Grails.
- Understand how Grails operates within the context of Java, Spring, Hibernate, and other technologies.
- Configure and run Grails applications.
- Learn to add new views and controllers.
- Take advantage of domain modeling and validators.
- Learn how to work with controllers, data scopes, GSP, and filters
- Install and use plugins

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Course Summary (cont'd)

Topics

- Language Overview
- Basic syntax and Scalar variables
- Collections
- Flow Control
- Classes
- Advanced Classes and Closures
- Regular Expressions
- Builders and Slurpers
- Grails Installation and Overview
- The Domain
- Controllers
- GSP Basics
- Filters
- Plug-ins

Audience

This an intermediate-level Groovy training course, designed for developers who need to understand how and when to use Groovy in Java and JEE applications. Attendees should have practical basic Java development experience.

Prerequisites

This an intermediate-level Groovy training course, designed for developers who need to understand how and when to use Groovy in Java and JEE applications. Attendees should have practical basic Java development experience.

Duration

Five days

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Course Outline

I. Language Overview

- A. What is Groovy?
- B. What Groovy can do
- C. Installing
- D. Running Groovy scripts

II. Basic syntax and Scalar variables

- A. Syntax rules
- B. Numbers
- C. Strings
- D. Operators

III. Collections

- A. Lists
- B. Coding a closure
- C. Maps
- D. Ranges

IV. Flow Control

- A. If statements
- B. Switch statements
- C. While loops
- D. For loops
- E. Exceptions

V. Classes

- A. Defining classes
- B. Member variables
- C. Methods
- D. Operator overloading
- E. Automatic constructor generation
- F. The Closure Groovy class

VI. Advanced Classes and Closures

- A. Metaprogramming
- B. Method resolution
- C. Pointers
- D. Calling methods that do not exist

VII. Regular Expressions

- A. Regular Expression syntax
- B. The =~ operator
- C. The ==~ operator
- D. Common methods that use Regular Expressions

VIII. Builders and Slurpers

- A. Types of Builders
- B. Creating custom builders
- C. Using the ConfigSlurper
- D. Writing a Slurper

IX. Grails Installation and Overview

- A. Installing Grails
- B. Technologies included with Grails
- C. Main components of a Grails application
- D. Session: Creating a Simple Grails Application
- E. Configuring the application
- F. Create a Domain
- G. Getting started with the Grails scaffolding
- H. Running the application

X. The Domain

- A. Modeling relationships – belongsTo, mapping, and hasMany
- B. Validators - constraints
- C. GORM

XI. Controllers

- A. Navigation
- B. Returning data to the view
- C. Scopes
- D. Creating and using services
- E. Binding properties to domain objects
- F. Command objects

XII. GSP Basics

- A. How GSPs work
- B. Common GSP tag libraries
- C. Custom error messages
- D. Rendering and processing forms
- E. Working with layouts

XIII. Filters

- A. Creating simple filters
- B. Assigning a filter to actions on a controller
- C. Assigning a filter to a URI
- D. Defining when a filter executes

XIV. Plug-ins

- A. What is a plug-in
- B. Installing a plug-in
- C. Integrating the Zk framework into GSP pages