

# Web Development with Grails

**Duration: 5 days (9 hours each day with working lunch)**

Grails is a great example of what we can do with the powerful metaprogramming capability of a language like Groovy. Grails has been developed on top of some of the most solid and popular technologies on the JVM. To effectively program in Grails, we have to leverage Groovy and various libraries and APIs. This course is geared towards making Java programmers quickly productive with Grails.

The course has a good balance of interactive lectures and hands-on exercises. The attendees are expected to pair-up and work on the lab exercises. The instructor will assist the attendees as they work on the labs. The objective of the course is for the attendees to gain an in depth practical knowledge of the concepts so they can put them to immediate use on their real projects.

The course content will be customized to meet your teams' specific needs. Please review this detailed outline and suggest changes (additions, deletions, modifications) as you feel fit.

## Topics

A quick introduction to Groovy

- \* General coding
- \* Creating and using classes
- \* Writing functions
- \* Groovy shell, console
- \* Scripting with Groovy
- \* Querying for instance and class method
- \* Interacting with classes dynamically
- \* Inspecting objects
- \* Exception handling
- \* Exercises

Working with Collections

- \* List operations
- \* Map operations
- \* String operations
- \* Multiline strings
- \* Exercises

Dynamic Behavior

- \* Open classes
- \* Injecting methods
- \* Synthesizing methods
- \* Optional typing
- \* Duck typing
- \* Exercises

## Programming with Closures

- \* Function values and closures
- \* Creating closures
- \* Passing closures
- \* Exercises

## Automated Builds

- \* Options for automation
- \* The current trend for automation in Groovy/Grails
- \* Creating gradle build files
- \* Specifying dependencies
- \* Using Gradle
- \* Exercises

## Test Driving Development with Groovy

- \* Test driven development
- \* Creating unit tests with Spock
- \* Functional testing
- \* Using easyB
- \* Driving selenium tests from easyB
- \* Exercises

## What's Grails

- \* MVC
- \* Principles
- \* Conventions
- \* Creating apps
- \* Directory structure
- \* Domain classes
- \* Creating and running apps
- \* Deploying apps
- \* Interacting, live debugging with console
- \* Validations
- \* Exercises

## Customizing GORM

- \* Working with GORM
- \* Finders
- \* Sequence of interactions
- \* Mapping to databases
- \* Deviating from conventions
- \* Customizing database mappings
- \* Mapping to multiple tables
- \* Working with multiple databases
- \* Creating custom validators
- \* Intercepting events and managing transactions
- \* Exercises

## Working with Object Relationships

- \* Object lifecycle
- \* One-to-one, one-to-many, and many-to-many relationships
- \* Operations and available methods to work with multiple objects
- \* Specialized queries
- \* Exercises

## Working with Controllers

- \* Creating controllers
- \* Creating actions
- \* Supporting beyond HTML: XML web services and JSON responses
- \* Filters
- \* Understanding routing
- \* Customizing routing and URL mappings
- \* Exercises

## Working with Views

- \* Working with views
- \* Organizing views and related code
- \* Reusing views
- \* Templates
- \* AJAX and rich user interaction
- \* Using HTML5 with Grails
- \* Exercises

## Working with Plugins

- \* Grails plugin architecture
- \* Using Plugins
- \* Writing plugins
- \* Browsing for plugins
- \* Exercises

## Integration with existing systems

- \* Integration with Java
- \* Mixing Java and Groovy on Grails projects
- \* Integration with Spring
- \* Intermixing with existing Struts applications
- \* Exercises

## Testing Grails Applications

- \* Unit testing with built in facilities
- \* Unit testing with Spock
- \* Functional and integration testing
- \* Automating and continuous integration
- \* Exercises

## About the Instructor

Dr. Venkat Subramaniam is an award-winning author, founder of Agile Developer, Inc., creator of agilelearner.com, and an instructional professor at the University of Houston.

He has trained and mentored thousands of software developers in the US, Canada, Europe, and Asia, and is a regularly-invited speaker at several international conferences. Venkat helps his clients effectively apply and succeed with sustainable agile practices on their software projects.

Venkat is a (co)author of multiple technical books, including the 2007 Jolt Productivity award winning book Practices of an Agile Developer. You can find a list of his books at agiledeveloper.com. You may read more about Venkat and Agile Developer, Inc. at <http://agiledeveloper.com>.

