PRG800 : Groovy Programming

Code : PRG800 **Duration :** 3 days **Category :** Scripting

Audience :

This course is intended for Java developers who want to learn programming using the scripting language Groovy.

Prerequisites :

To participate in this course knowledge of and experience with programming in Java is required.

Realization :

The theory is discussed on the basis of presentation slides and is interspersed with exercises. Illustrative demos provide further clarification of the discussed concepts. The course material is in English.

Groovy Programming

Contents :

In the course Groovy Programming participants learn programming in the Groovy scripting language that is sometimes referred to as Java++. Groovy is a JVM language which means that Groovy scripts are interoperable with Java code and can therefore be used easily with Java in the same application. Groovy offers a natural extension to the Java syntax and its language facilities include simple data type syntax for lists, ranges, maps and regular expressions. After an introduction to the basic features of Groovy and installation of Groovy, it is discussed how to program with closures and builders. Attention is also paid to meta-programming in Groovy. Groovies support for dynamic typing, namely duck-typing, is discussed as well. Many more issues are on the course schedule and participants will find that they can quickly become productive with programming in Groovy.

Module 1 : Groovy Intro

Overview of JVM languages
Why Groovy is a superior Java
Installation of Groovy
Skip types and semicolons
Skip function parameter types and returns
Duck typing
Groovy Beans
Groovy Strings

Module 2 : Data Types and Operators

Lists
Maps
Ranges
Regex
Null-catch operator
Elvis operator
Spread operator
Spaceship operator
as operator
Operator overloading
The versatile switch statement

Module 3 : Closures

What are closures
Closure definition
Free variables
Functions that takes closures
Functions returning closures
Currying

Module 4 : Meta Programming

Inspection
MetaClass
Patching in new methods
Dynamic methods
Expando
GPath

Module 5 : Groovy Enhanced Java API

Overview
Iteration methods
Text manipulation
Dates and times
Easy file handling
Threads and processes

Module 6 : AST Annotations

ToString
EqualsAndHashCode
TupleConstructor
Canonical
Immutable
Singleton
Delegate
AutoExternalize
Log, Log4j, Slf4j
ThreadInterrupt, TimesInterrupt
WithReadLock, WithWriteLock
Trampoline
Memoize
How to create your own AST transformation

Module 7 : Groovy Builders

The concept
Markup Builder
Node Builder
Ant Builder
Swing Builder
HTTP Builder
How to create your own builder

Module 8 : XML Handling

Reading XML
Producing XML
Printing XML
Grape
Scraping HTML
Invoking internet web services

Module 9 : Embedded Groovy

Embedded Groovy
Groovy in a legacy Java application
Eval
GroovyShell
GroovyScript
Running Groovy on the command line
One-liners
Running using shell-script style

Module 10 : GPars

What is GPars
Fork-Join concurrency
Parallel data types
Map-Reduce pipelines
Actors concurrency

Module 11 : Groovy Frameworks

Grails
Gradle
Griffon
Gaylek
Spock
Geb