

**Introduction to Groovy for Java Developers**

**Course Number:** GRO-100
**Duration:** 4 days

**Overview**

Accelebrate's Groovy for Java Developers training teaches experienced Java developers how to write programs in Groovy that simplify, enhance, and expand their existing knowledge.

**Prerequisites**

All attendees should have a good knowledge of Java techniques, including the Collections framework and JDBC.

**Materials**

All Groovy training students receive comprehensive courseware.

**Software Needed on Each Student PC**

* JDK 8 or later
* The latest stable release of Groovy
* A powerful IDE that supports Groovy, such as Eclipse or (preferred) IntelliJ IDEA
* Related free software and lab files; please contact us for detailed specifications

**Objectives**

* Understand optional typing, in contrast to static or dynamic
* Work with Groovy closures
* Use Groovy control structures
* Build object-oriented programs in Groovy
* Use Groovy builders to reduce complexity
* Access databases using Groovy
* Process XML and JSON data
* Write unit tests in Groovy
* Access Java classes from Groovy, and vice versa

**Outline**

* Groovy Fundamentals
	+ Differences between Groovy and Java
	+ Compiling and executing Groovy programs
	+ The basic Groovy data types and optional typing
	+ Writing Groovy scripts
	+ Declaring classes
	+ Overriding operators and type coercion
	+ Groovy strings
	+ Regular expressions in Groovy
* Groovy Collections
	+ Ranges
	+ Lists
	+ Maps
	+ Iterators and polymorphic algorithms
* Closures in Groovy
	+ Declaring closures
	+ Available options for calling closures
* Groovy Control Structures
	+ The "Groovy truth"
	+ Conditional execution
	+ Looping constructs
* Using Classes and Scripts
	+ Groovy fields and local variables
	+ Methods and operations
	+ Organizing classes in packages
	+ Using inheritance
	+ POGO's vs. POJO's
* Unit Testing in Groovy
	+ JUnit tests in Groovy
	+ The assert method
	+ The Spock testing framework
* Miscellaneous Operators
	+ Safe navigation
	+ Elvis
	+ Spaceship
	+ Method references and closures from Java
* Survey of the GDK
	+ File access
	+ Additional collections methods
	+ URLs and networking
* Database Access with Groovy
	+ Basic database operations
	+ Groovy and ORM solutions
* Working with XML and JSON
	+ Reading and parsing XML documents
	+ Parsing and generating JSON
	+ Working with external libraries like GSON
* Simple Metaprogramming
	+ The Expando class
	+ Adding attributes and methods using Expando MetaClass
	+ Categories
* AST Transformations
	+ @ToString, @EqualsAndHashCode, @TupleConstructor
	+ @Canonical
	+ @Delegate
	+ @Immutable
	+ @TypeChecked
	+ @CompileStatic and @CompileDynamic
* Conclusions