

**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