Groovy Programming

Duration: 40 Hours (5 Days)

Overview

The Groovy course is designed to provide comprehensive groovy training for programmers seeking to enhance their skills in this versatile and dynamic language. The course begins with Module 1: Groovy Getting Started, which introduces the essentials, from installation to writing your first script. Module 2: Groovy Big Picture gives an overview of the language's capabilities and ecosystem.As learners progress through subsequent modules, they will delve into the Groovy Language Specification, Syntax, and Operators, gaining a deep understanding of how to write concise and expressive code. Program Structure and Object Orientation in Groovy are covered extensively, ensuring students can structure their code effectively.Advanced topics like Closures, Semantics, Runtime, and compile-time metaprogramming are explored, providing powerful tools for customization and extending Groovy's capabilities. Domain-Specific Languages (DSLs) are also discussed, enabling the creation of specialized syntax for particular applications. Finally, Exception Handling is addressed, equipping learners with the means to write robust and error-resistant code.Overall, this groovy training course is structured to build a solid foundation in Groovy, ensuring learners can apply their knowledge practically in various programming tasks and projects.

Audience Profile

The Groovy course by Koenig Solutions offers comprehensive training in Groovy language for developers seeking to enhance their scripting skills.

- Software Developers with interest in JVM languages
- Java Developers looking to streamline scripting and coding processes
- Automation Engineers seeking to utilize Groovy for test scripts
- DevOps Engineers interested in using Groovy for scripting and automation tasks
- System Administrators who want to write scripts for task automation
- Application Developers aiming to build Domain-Specific Languages (DSLs)
- Software Architects exploring dynamic language capabilities on the JVM
- Technical Leads overseeing projects that incorporate Groovy
- Quality Assurance professionals who wish to write more expressive tests using Spock Framework, which uses Groovy

Course Syllabus

1. Introduction and Getting Started with Groovy

- What is Groovy?
- The Groovy Website and Documentation
- Installation for Groovy on Windows
- SDKMAN
- groovysh
- groovyc
- Goorvy Console
- Hello IntelliJ

2. Groovy Basics

- Imports
- Keywords
- Comments
- Assertations
- Scripts
- Classes
- Numbers
- Groovy Control Structure
- Annotation & AST Transformation
- Operators
- Grapses

3. Data Types

- Java Data Types
- Groovy Data Types and Optional Typing
- Working with Numbers
- Operator Overloading
- Strings
- Regular Expression

4. Collection

- Collections
- Ranges
- Lists
- Maps

5. Closures

- What are closures?
- Creating Clousres
- Closure Parameters
- Collection Methods
- Curry Methods
- Closure Scope and Delegates

6. Control Structure

- Conditional Structure
- Looping
- Exception Handling

7. Object Oriented Programming

- Classes/Field /Local Variables
- Constructors and Methods
- Organizing Classes into Packages
- Inheritance
- Interfaces

- Traits
- Groovy Beans

8. Meta Programming – Runtime

- Introduction to Runtime Meta Programming
- Meta Object Protocol
- Customizing the MOP
- Meta Class
- Category Class
- Intercept/ Cache / Invoke Pattern

9. Meta Programming – Compile Time

- Introduction
- @ToString
- @EqualsAndHashCode
- @TupleConstructor
- @Canonical
- @Singleton
- @Sortable
- @Immutable
- @TypeChecked
- @ComplileStatic
- @Builder

10. Working with Builders

- Intro to Builders
- Markup Builder- XML
- Markup Builder- HTML
- JSON Builder
- Object Graph Builder
- List of Builders

11. Working with Rest Services

- Introduction
- Working with XML
- Working with JSON
- HTTP Request Methods (Verbs)
- HTTP Status Codes
- Content Negotiation
- Using REST based APIs

12. Working with GDK

- Introduction
- Working with Files & I/O
- Working with Files and Directories
- Threads
- Database Programming with Groovy

- Templates
- Dates