

Java SE: Programming II

Duration: 5 Days

What you will learn

This is a second-level course for programmers learning the Java language. It rounds-out the topics that were taught in the previous course, Java SE: Programming I, and provides additional key skills for Java programmers, such as secure coding, modular programming, and database access.

This course uses today's main Java version for its practices (currently Java 11).

Course Objectives

Create Java applications that leverage the object-oriented features of the Java language

such as encapsulation

inheritance

and polymorphism

Execute a Java application from the command line

Create applications that use the Java Collections framework

Search and filter collections using Lambda Expressions

Implement error-handling techniques using exception handling

Implement input/output (I/O) functionality to read from and write to data and text files

Manipulate files

directories and file systems using the JDK NIO.2 specification

Perform multiple operations on database tables

including creating

reading

updating and deleting using both JDBC and JPA technology

Use Lambda Expression concurrency features

Apply modular programming practices and services to applications

Create high-performing multi-threaded applications

Course Topics

Functional Programming

Functional Interfaces and Lambda Expressions

Collections Streams, and Filters

Built-in Functional Interfaces

Modular Programming

Introduction to Modular Programming in Java

Services in a Modular Application

Migration to a Modular Application

Streams and Parallel Streams

Concurrency

Parallel Streams

Terminal Operations: Collectors

Creating Custom Streams

Java API Programming and Secure Coding Concepts

I/O (Fundamentals and NIO2)

Secure Coding

Database Applications with JDBC

Localization

Collections and Generics

What is the Collections Framework?

Iterators

Type-Wrapper Classes

What are Generics?

Exception Handling and Assertions

Exceptions
Error handling
Assertions