



## Java Programming

### JV-PF: Java Programming Fundamentals

\$2,995.00

- 5 Days

## Upcoming Dates

## Course Description

This 5 day instructor-led course provides practice and understanding of Java programming. At the end of the course the student will be versed in Java well enough to begin developing or maintaining most simple Java systems. The student will be able to discern good programming practices from bad, correct syntax errors, detect and correct logic errors, create object-oriented code structures, manipulate files and databases, and know where to find answers for programming problems. Ultimately the goal of Java programming fundamentals is to give students enough of an understanding of Java so that they can become productive junior Java developers.

Java programming fundamentals will cover many of the Java keywords and their application as well as current industry coding idioms. The course goes well beyond simple programming by practicing object-oriented coding and SOLID programming principles.

The course is structured by combining short lectures with exercises. The exercises are more than simply following a pre-determined script but involve writing code from scratch, critiquing code, working in teams, modifying moderately complex systems, and exploring various code support websites.

## Course Outline

### Module 1 Essential skills

- An introduction to Java
- How to write your first Java applications
- How to work with the primitive data types
- How to code control statements
- How to code methods, handle exceptions, and validate data
- How to test, debug, and deploy an application

### Module 2 Object-oriented programming

- How to define and use classes
- How to work with inheritance
- How to define and use interfaces
- More object-oriented programming skills

### Module 3 More essential skills

- How to work with arrays
- How to work with collections and generics
- How to work with strings

- How to work with dates and times
- How to work with file I/O
- How to work with exceptions

## **Module 4 GUI programming**

- How to get started with JavaFX
- How to get started with Swing
- More Swing controls

## **Module 5 Database programming**

- An introduction to databases with SQLite
- How to use JDBC to work with a database

## **Module 6 Advanced skills**

- How to work with lambda expressions and streams
- How to work with threads

## **Audience**

Programmers who need to design and develop Java applets and applications.

## **Prerequisites**

Students taking this course must be able to operate a PC and have a basic understanding of such programming concepts as simple variables, sequence of code statements, looping, decisions (e.g. if statement), directory navigation, and files. Object oriented programming experience is *not* required for this course nor is web development.

## **What You Will Learn**

- Create and explain project structure in Eclipse
- Work with classes, methods, statements, and class attributes
- Correct syntax and logic errors using the debugging tools in Eclipse
- Work with Java primitive datatypes and Java data classes
- Apply various levels of visibility to classes, subclasses, packages, and instances
- Code three types of loops, various conditional statements, use case statements
- Work with Java exceptions
- Use interfaces and polymorphism to create decoupled objects
- Apply basic design patterns to create well structured code
- Read and write to a file
- Use simple JDBC to manipulate a database