



Course 321 – Comprehensive Introduction to Java Programming

Duration: 35 hours

You Will Learn How To

- Write, compile, and execute a Java program using the Eclipse IDE
- Create programs that make use of Object-Oriented Programming concepts such as inheritance and polymorphism
- Use Java's exception handling framework
- Write parallel-processing applications through multi-threading
- Access databases using JDBC

Course Benefits

This course provides extensive experience with the Java language and its object-oriented features. This program will benefit professionals who wish to take the Oracle Certified Java Programmer certification and who want to pursue a career in Java or Android development.

Who Should Attend

This Java Training course is for organizations and individuals who are looking for ways to create robust, object-oriented applications using Java technology. Prior structured programming experience is required.

Course Content

The Java Platform

- What is Java?
- Java Virtual Machine
- Java Development Process

- Java SE, EE, and ME

Java Development Overview

- Writing Your First Java Application
- Compiling and Running Java Programs
- The Eclipse IDE

Java Language Fundamentals

- Elements of a Java Program
- Identifiers
- Literals and Data Types
- Operators

Getting User Input

- Using Scanner
- Using JOptionPane

Control Flow Structures

- Decision Control – if, if-else, switch
- Repetition Control – for, while, do-while
- Transfer of Control – continue, break

Java Arrays

- Declaring Arrays
- Creating Arrays
- Accessing Array Elements
- Determining the Number of Elements in an Array
- Creating Multi-Dimensional Arrays
- Command-line Arguments



Object Oriented Programming Concepts

- Basic OOP Concepts
- Understanding Classes
- Declaring Object References
- Creating Objects
- Accessing Methods
- Accessing Static Methods
- Accessing Attributes
- Passing by Value vs Reference
- Comparing Objects

Essential Java Classes

- The Object Class
- The Math Class
- String and StringBuilder
- Wrapper Classes
- The System Class
- Using ArrayList
- Using HashMap
- Generics
- Generating Random Numbers
- Formatting Numbers
- Formatting Dates

Creating Your Own Classes

- Declaring Classes
- Declaring Attributes
- Declaring Methods
- The this reference
- Method overloading
- Constructors
- Finalizers
- Creating enum Types
- Importing and Creating Packages

Inheritance, Interfaces, and Polymorphism

- Reusing Code by Inheritance
- Creating Abstract classes

- Creating Abstract Methods
- Creating Final Classes
- Creating Final Methods
- Creating Final Attributes
- Declaring and implementing Interfaces
- Understanding Polymorphism
- Member Visibility – private, protected, public

Exception Handling

- Defining Exceptions
- Catching Exceptions using try-catch
- Understanding the finally Block
- Throwing Exceptions
- Creating Your Own Exception Types

Multi-Threading

- Creating Threads
- Controlling Threads
- Understanding Thread Priorities
- Avoiding Race Conditions
- Thread Synchronization

Inner Classes, Anonymous Inner Classes, Lambdas

- Inner Classes
- Method Local Inner Classes
- Anonymous Inner Classes
- Functional Interfaces
- Lambda Expressions

Accessing Databases Using JDBC

- Components of a JDBC application
- Connecting to a Database
- Retrieving and Processing Data
- Preventing SQL Injection Using PreparedStatement
- Inserting, Updating, and Deleting Data



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ActiveLearning is a trusted provider of IT training and certifications. It has helped thousands of organizations by equipping their teams with the IT skills necessary to implement their digital transformation initiatives.

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