



Course 321 – Comprehensive Introduction to Java Programming

Duration: 5 days

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 the Philippines' leading provider of Information Technology and Project Management education, where thousands of students take courses from Application Development to Project Management to Network Security, and much more. Our courses are taught by expert instructors, and learning is enhanced through a blend of in-depth lectures, workshops, and hands-on exercises.