Java SE: Programming I

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **5 Day**

https://bilginc.com/en/training/java-se-programming-i-1662-training/

Overview

Official Oracle Curriculum

This entry-level course is aimed at programmers who are new to Java and who need to learn its concepts, language constructs, and data types. Included in the agenda are topics on exception handling, lambda expressions, and modular programming.

The course is designed for programmers who will apply these language skills to develop programs using the latest major versions of the JDK, currently Java 11. Students practice the skills learned in each lesson through hands-on labs.

Target Audience

- Developer
- Implementer
- System Integrator
- Systems Administrator

Prerequisites

It is recommended that you have previously studied programming languages, or have an existing knowledge of Java Programming.

What You Will Learn

- Write Java code that uses variables, arrays, conditional and loop constructs of achieve program objectives
- Identify modular programming principles
- Access and create static fields and methods
- Encapsulate a class using access modifiers and overloaded constructors
- Manipulate numeric, text, and string data using appropriate Java operators
- Set environment variables to allow the Java compiler and runtime executables to function properly
- Create simple Java classes and use object references to access fields and methods in a class
- Demonstrate polymorphism by implementing a Java interface
- Handle a checked exception in a Java application
- Use a Predicate Lambda expression as the argument to a method
- Define and implement a simple class hierarchy that supports application requirements

Outline

What is a Java Program

- Key features of the Java language
- Java technology and development environment
- Running and testing a Java program

Creating a Java Main class

- Java classes
- The Main method
- Adding a Main method

Data in the Cart

- Introducing variables
- Working with strings

- Working with numbers
- Manipulating numeric data

Managing Multiple Items

- Working with conditions
- Using IF statements
- Working with a list of items
- Processing a list of items

Describing Objects and Classes

- Working with objects and classes
- Defining fields and methods
- Declaring, instantiating, and initializing objects
- Working with object references
- Doing more with arrays

Manipulating and Formatting the Data in Your Program

- Using the String class
- Using the Java API docs
- Using the StringBuilder class
- More about primitive data types
- More numeric operators
- Promoting and casting variables

Creating and Using Methods

- Using methods
- Method arguments and return values
- Static methods and variables
- How arguments are passed to a method
- Overloading a method

Using Encapsulation

- Access control
- Encapsulation
- Overloading constructors

More on Conditionals

- Relational and conditional operators
- More ways to use IF/ELSE constructs
- Using switch statements
- Using the Netbeans debugger

More on Arrays and Loops

- Working with dates
- Parsing the args array
- Two-dimensional arrays
- Alternate looping constructs
- Nesting loops
- The ArrayList class

Using Inheritance

- Overview
- Working with subclasses and superclasses
- Overriding methods in the superclass
- Creating and extending abstract classes

Using Interfaces

- Polymorphism
- Polymorphism in the JDK foundation classes
- Using interfaces
- Local-variable type inference
- Using the List interface
- Introducing Lambda expressions

Handling Exceptions

- Overview

- Propagation of exceptions
- Catching and throwing exceptions
- Handling multiple exceptions and errors

Deploying and Maintaining the Soccer Application

- Packages, JARs, architecture
- Application modification and requirements

Understanding Modules

- The Module system
- JARs
- Module declarations
- Modular JDK

JShell

- Testing code
- JShell basics
- JShell in an IDE