JAVA SE 17 Programming I

Description

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.

Course Content
Module 1: What is a Java Program

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

Module 2: Creating a Java Main class

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

Module 3: Data in the Cart

- Introducing variables
- Working with strings
- Working with numbers
- Manipulating numeric data

Module 4: Managing Multiple Items

- Working with conditions
- Using IF statements
- Relational and conditional operators
- More ways to use IF/ELSE constructs
- Using switch statements
- Using the Netbeans debugger
- Parsing the args array
- Two-dimensional arrays
- Alternate looping constructs
- Nesting loops
- The ArrayList class

Module 5: 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

- Access control
- Encapsulation
- Overloading constructors

Module 6: 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
- Working with dates

Module 7: 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

Module 8: 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

Module 9: Handling Exceptions

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

Module 10: Understanding Modules

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

Module 11: JShell

- Testing code
- JShell basics

- JShell in an IDE

Lab / Exercises

- During the course participants are encouraged to actively participate in the learning experience by running example files during lectures and performing coding challenges during labs
- Each lab session allows you to compare your solution to the instructor's

Documentation

- Digital courseware included

Exam

- This course prepares you to the 1Z0-829 exam. If you wish to take this exam, please contact our secretariat who will let you know the cost of the exam and will take care of all the necessary administrative procedures for you

Participant profiles

- Programmers
- Developers
- Implementers
- System Integrators
- Systems Administrators

Prerequisites

- No prerequisites

Objectives

- 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
- Manipulate numeric, text, and string data using appropriate Java operators
- Set environment variables to allow the Java compiler
- Create simple Java classes and use object references
- 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

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Reference
JAVA17-01