

Core Java

Lesson:00 Java SE 8



Course Goals and Non Goals

➤ Course Goals

- Implementing OOPs features in Java
- Developing Java Desktop Applications

➤ Course Non Goals

- Developing GUI applications





Pre-requisites

- Basic Programming Concepts
- OOPs



Intended Audience

- Developers new to Java technology





Day Wise Schedule

➤ Day 1

- Lesson 1: OOP Concepts
- Lesson 2: Getting Started
- Lesson 3: Basic Language Constructs
- Lesson 4: Classes and Objects
- Lesson 5: Extending Classes

➤ Day 2

- Lesson 6: Abstract Classes
- Lesson 7: Interfaces and Loose Coupling
- Lesson 8: Packages and Imports
- Lesson 9: Exception Handling
- Lesson 10 : The Input and Output Classes



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➤ Lesson 1: OOP Concepts

- 1.1: Introduction to OOP
- 1.2: Characteristics of OOP
- 1.3: Classes and Objects
- 1.4: Abstraction
- 1.5: Encapsulation
- 1.6: Inheritance
- 1.7: Polymorphism

➤ Lesson 2: Getting Started

- 2.1: Introduction to Java
- 2.2: Writing ,compiling and Running a program
- 2.3: Platform Independency in Java
- 2.4: Integrated Development Environment
- 2.5: Some Important Terms in Java
- 2.6: JVM Basic Architecture



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➤ Lesson 3: Basic Language Constructs

- 3.1: Naming Conventions in Java
- 3.2: Variable and Data Types
- 3.3: Operators(arithmetic,assignment ,relational,logical and bitwise)
- 3.4: Promotion and Demotion Rules for Operators
- 3.5: Looping(while ,do...while, for loop)
- 3.6: Conditional Statements(if else, switch)
- 3.7: break and continue statements
- 3.8: Reference Variables
- 3.9 : Arrays

➤ Lesson 4: Classes and Objects

- 4.1: Classes and Objects
- 4.2: Access Controls
- 4.3: Constructor
- 4.4: Overloading
- 4.5: Static methods and fields
- 4.6: Garbage Collection –finalize() method
- 4.7: Extended Parameters for JVM –xmx,-xms
- 4.8: Memory Leakage ,Overflow and Out of Memory
- 4.9: toString



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➤ Lesson 5: Extending Classes

- 5.1: Inheritance
- 5.2: Protected Keyword
- 5.3: Constructors in Extended Classes
- 5.4: Overriding Methods
- 5.5: Polymorphism
- 5.6: Making Methods and Classes Final

➤ Lesson 6: Abstract Classes

- 6.1: Abstract classes and methods
- 6.2: Extending abstract class
- 6.3: Abstract class and Polymorphism



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➤ Lesson 7: Interfaces And Loose Coupling

- 7.1: Declaring interfaces
- 7.2: Implementing interfaces
- 7.3: Extending interfaces
- 7.4: Loose coupling using interfaces

➤ Lesson 8: Packages and Static Imports

- 8.1: Creating packages
- 8.2: Naming packages
- 8.3: Package Access
- 8.4: Packages and class path
- 8.4: Importing packages
- 8.5: Static imports



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➤ Lesson 9: Exception Handling

- 9.1: Checked exceptions
- 9.2: Unchecked exceptions
- 9.3: The “try-throw-catch” structure
- 9.4: The “finally” clause
- 9.5: Custom Exception
- 9.6: Exception chaining
- 9.7: New Features of Java 7
 - Try with Resources
 - AutoCloseable
 - Handling Suppressed Exceptions
 - Catch Block Handling Multiple Exceptions



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➤ Lesson 10: The Input and Output Classes

- Types of Input and Output Streams
 - Byte-based stream
 - Character-based stream
- Reader and Writers
- PrintWriter
- NIO Overview



References

➤ Books:

- Java, The Complete Reference; by Herbert Schildt
- Thinking in Java; by Bruce Eckel
- Beginning Java 8 Fundamentals by Kishori Sharan

➤ Websites:

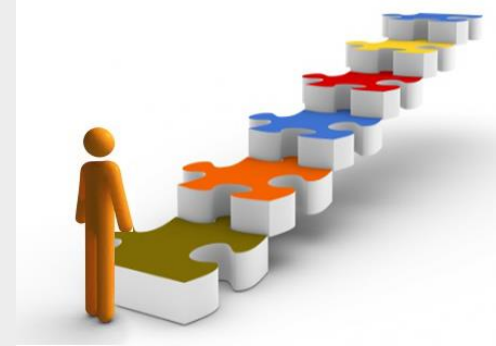
- Java home page: <http://java.sun.com/>
- JDK 1.8 documentation: <http://docs.oracle.com/javase/8/docs/>
- Multithreading : <https://docs.oracle.com/javase/tutorial/essential/concurrency/index.html>





Next Step Courses

- Servlets
- JSP





Other Parallel Technology Areas

- C ++
- C#.Net
- Visual Basic.Net