

Core Java 8 and Development Tools

Lesson 00: Java SE 8

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Course Goals and Non Goals

➤ Course Goals

- Implementing OOPs features in Java
- Developing Java Desktop Applications
- Use of Core JDK 1.8 API
- Testing using Junit 4

➤ 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: Introduction to Java
 - Lesson 2: Eclipse 4.4 (Luna) as an IDE
 - Lesson 3: Language Fundamentals
 - Lesson 4: Classes and Objects
 - Lesson 5: Exploring Basic Java Class Libraries
- Day 2
 - Lesson 6: Inheritance and Polymorphism
 - Lesson 7: Abstract Classes and Interfaces
- Day 3
 - Lesson 8: Regular Expressions
 - Lesson 9 : Exception Handling
 - Lesson 10: Array

Day Wise Schedule

- Day 4
 - Lesson 11: Collection
 - Lesson 12: File IO
- Day 5
 - Lesson 13: Introduction to JUnit 4 /Test NG
 - Lesson 14: Advanced Testing Concepts

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- Lesson 1: Introduction to Java
 - 1.1: Introduction to Java
 - 1.2: Features of Java
 - 1.3: Simple Program in Java
 - 1.4: Developing software in Java
- Lesson 2: Eclipse 4.4 (Luna) as an IDE
 - 2.1: Installation and Setting up Eclipse
 - 2.2: Introduction to Eclipse IDE
 - 2.3: Creating and Managing Java Projects
 - 2.4: Miscellaneous Options

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■ Lesson 3: Language Fundamentals

- 3.1: Keywords
- 3.2: Primitive Data Types
- 3.3: Operators and Assignments
- 3.4: Variables and Literals
- 3.5: Flow Control: Java's Control Statements
- 3.6: Best Practices

■ Lesson 4: Classes and Objects

- 4.1: Classes and Objects
- 4.2: Packages
- 4.3: Access Specifiers
- 4.4: Constructors - Default and Parameterized
- 4.5: this reference
- 4.6 using static keyword
- 4.7: Best Practices

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■ Lesson 5: Exploring Basic Java Class Libraries

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- 5.2: Wrapper Classes
- 5.3: Type casting
- 5.4: Using Scanner Class
- 5.5: String Handling
- 5.6: Date and Time API
- 5.7: Best Practices

■ Lesson 6: Inheritance and Polymorphism

- 6.1: Inheritance
- 6.2: Using super keyword
- 6.3: Instance Of Operator
- 6.4: Method & Constructor overloading
- 6.5: Method overriding
- 6.6: @override annotation
- 6.7: Using final keyword
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 - 7.2: Interfaces
 - 7.3: default methods
 - 7.4: static methods on Interface
 - 7.5 : Runtime Polymorphism
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 - 8.1: Regular Expressions
 - 8.2: Validating data
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 - 9.2: Exception Types
 - 9.3: Exception Hierarchy
 - 9.4: Try-catch-finally
 - 9.5: Try-with-resources
 - 9.6: Multi catch blocks
 - 9.7: Throwing exceptions using throw
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 - 9.9: User defined Exceptions
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 - 10.2: Multidimensional array
 - 10.3: Using varargs
 - 10.4: Using Arrays class
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 - 11.2: Collection Interfaces
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 - 11.4 Iterating Collections
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 - 12.2: Types of Streams
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 - 12.4: Character Stream Hierarchy
 - 12.5: Buffered Stream
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 - 13.6: Test Fixtures
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 - 14.2: Test Suites
 - 14.3: Parameterized Tests
 - 14.4: Mocking Concepts

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/>



Next Step Courses

- Servlets
- JSP



Other Parallel Technology Areas

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