2 Days

Java SE 8 New Features

The Java SE 8 New Features training helps the individuals to explore the major advancements and modifications that have taken place in Oracle Java SE 8. In this class, candidates will concentrate on equipping their skill-set on the newly installed features of Java SE 8 and understand the basics, thereafter also learning to deploy streams and lambda expressions with collections.

Completion of this training course will enable candidates in:

- Create lambda expressions using the default library interfaces
- Use new concurrent lambda features.
- Deploying the Nashorn JavaScript engine.
- Working with the new Java Date and Time API.

Course Benefits:

Attaining certification of this course will help individuals to expand their knowledge of Java SE 8, while also building the Java skill set. This training also gives an overview of Mission Control and Java Flight Recorder, that are now included in JDK 8.

Course Details

Course Outline

1. Course Introduction

- Review course objectives
- Discuss course format and LVC
- Getting acquainted with instructor and student
- Discuss course topics planned for coverage
- Overview of changes in 8

2. Introducing Lambda Expressions

- Describe the purpose of an anonymous inner class
- Describe the components of a lambda expression
- Describe drawbacks to anonymous inner classes
- Defining a functional interface

- Create programs that use lambda expressions

3. A Case for Lambda Expressions

- Discuss the reasons for adding lambda expressions to the Java language
- Review the standard way of extracting data in Java
- Refactor code to reduce redundancy
- Refactor code to use inner classes
- Refactor code to use lambda expressions
- Listing the benefits of lambda expressions

4. Filtering Collections with Lambdas

- Iterate through a collection with forEach
- Iterate through a collection using lambda syntax
- Define pipelines in terms of lambdas and collections
- Describe the Stream interface
- Calling an existing method using a method reference
- Chain multiple methods together
- Comparing function and imperative programming
- Filter a collection using lambda expressions

5. Using Built-in Lambda Types

- Listing the built-in interfaces included in java.util.function
- Determining true or false with a Predicate
- Process an object and return nothing with Consumer
- Process one object and return another with Function
- Generate a new object with Supplier
- Use primitive versions of the base interfaces
- Use binary versions of the base interfaces

6. Collection Operations with Lambda

- Extract data from an object using map
- Search for data using search methods
- Describe the Optional class
- Describe the types of stream operations
- Perform calculations using methods
- Describe lazy processing
- Sort A stream

- Save results to a collection using the collect method

7. Parallel Streams

- Review the key characteristics of streams
- Contrast old style loop operations with streams
- Describe how to make a stream pipeline execute in parallel
- List the key assumptions needed to use a parallel pipeline
- Calculate a value using reduce
- Describe why reduction requires an associative function
- Describe the process for decomposing and then merging work

8. Lambda Cookbook

- Modify a list using removeIf
- Update a list using replaceAll
- Update a map using computeIfAbsent, computer If Present, and merge
- Send the keys and values from a map to a stream
- Read a text file into an ArrayList
- Read a file to a stream
- List, walk, and search a directory structure using a stream
- Flattening a stream using flatMap

9. Method Enhancements

- Consider the importance of building good libraries
- Use static methods in Interfaces
- Use default methods
- Understand default method inheritance rules

10. Using the Date/Time API: Working with Local Dates and Times

- List the goals of the Date/Time API (JSR-310)
- Create and manage date-based events
- Create and manage time-based events
- Combining date and time into a single object

11. Using the Date/Time API: Working with Time Zones

- Work with dates and times across time-zones and manage changes resulting from daylight savings

12. Using the Date/Time API: Working with Date and Time Amounts

- Define and create timestamps, periods and durations
- Apply formatting to local and zoned dates and times

13. JavaScript on Java with Nashorn: Creating and executing shell scripts

- Create and execute shell scripts using JavaScript and Nashorn

14. JavaScript on Java with Nashorn: Writing JavaScript Applications

- Develop JavaScript applications that leverage Java code using Nashorn

15. JavaScript on Java with Nashorn: Writing JavaFX Applications Using JavaScript

- Run JavaScript script from Java applications using JSR-223
- Prototype JavaFX applications using Nashorn and JavaScript

16. Intro to Mission Control

- Describe JMX and Managed Beans with Mission Control
- Monitor CPU utilization with Mission Control
- Analyze JVM characteristics with Mission Control
- Analyze heap memory with Mission Control

17. Intro to Flight Recorder

- Describe the Java Flight Recorder
- Describe the Java Flight Recorder Architecture
- Start a Java Flight Recording
- Manage a Java Flight Recording
- Analyze a Java Flight Recording

Who Should Attend

The Java SE 8 New Features Certification Course is ideal for:

- Project Manager
- Java Developers
- Developer
- J2EE Developer

Pre Requisite

- Java SE 7 Programming
- Java SE7 Fundamentals

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