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## Java SE7 Programming

Varighed: 5 Days    Kursus Kode: D67240GC10

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### Beskrivelse:

The second of two courses that cover the Java Standard Edition 7 (Java SE 7) Platform, this course covers the core Application Programming Interfaces you will use to design object-oriented applications with Java. Learn to create class files that subclass other classes, extend abstract classes, and program with interfaces. Learn how to properly use exceptions, how to use the Collections framework, and develop applications that manipulate files, directories and file systems. This course also covers writing database programs with JDBC and JPA, and how to correctly write multi-threaded applications.

Practice your skills with labs that range from simple to complex and with experienced instructors who will answer your questions and guide your learning experience. The course features the latest JDK7 API's and tools. Use this course to further develop your skills with the Java language and prepare for the Oracle Certified Professional, Java SE 7 Programmer Exam!

Learn To: Create Java technology applications with the latest JDK7 Technology Develop your object-oriented thinking skills Identify good practices in the use of the language to create robust Java applications Manipulate files, directories and file systems Connect to databases using standard SQL queries through JDBC and object-relational mapping with JPA Create high-performance multi-threaded applications A Live Virtual Class (LVC) is exclusively for registered students; unregistered individuals may not view an LVC at any time. Registered students must view the class from the country listed in the registration form. Unauthorized recording, copying, or transmission of LVC content may not be made.

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### Målgruppe:

Java-utvikler

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### Agenda:

- Create Java technology applications that leverage the object-oriented features of the Java language, such as encapsulation, inheritance, and polymorphism
  - Execute a Java technology application from the command line
  - Create applications that use the Java Collections framework
  - Implement error-handling techniques using exception handling
  - Implement input/output (I/O) functionality to read from and write to data and text files and understand advanced I/O streams
  - Manipulate files, directories and file systems using the JDK7 NIO.2 specification
  - Perform multiple operations on database tables, including creating, reading, updating and deleting using both JDBC and JPA technology
  - Process strings using a variety of regular expressions
  - Create high-performing multi-threaded applications that avoid deadlock
  - Localize Java applications
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### Forudsætninger:

#### Required Prerequisites:

- The Fundamentals of Java SE 7 course was designed to enable students with little or no programming experience to begin to learn programming.
  - Java SE7 Fundamentals
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## Indhold:

### Java Platform Overview

- Introductions
- Course Schedule
- Java Overview
- Java Platforms
- OpenJDK
- Licensing
- Java in Server Environments
- The Java Community Process

### Java Syntax and Class Review

- Java syntax review
- Java control statements
- What is a class?
- Using a class
- Subclassing
- Access control
- Polymorphism

### Java Class Design

- Using access modifiers
- The instanceof modifier
- Overloading methods
- Overloading constructors
- Casting
- Java single inheritance

### Advanced Class Design

- Identifying abstract classes form a business problem
- Field modifier best practices
- Designing a Singleton class
- Designing abstract classes
- Nested classes

### Inheritance with Java Interfaces

- Java Interfaces
- Types of Inheritance
- Creating a maintainable design using interfaces
- Implementing multiple interfaces
- The DAO pattern

### Collections and Generics

- What is the Collections Framework?
- A classic list
- What are generics
- Generic lists
- Using generic Set and Map
- Ordering collections
- Iterators
- Enum classes

### String processing

- Process Strings with StringBuilder and StringBuffer
- Key String methods
- Parse text in Java
- Read input with Scanner
- Write text with PrintWriter
- Regular expressions in Java
- Using the Pattern object
- Using the Matcher object

### Exceptions and Assertions

- Exceptions categories
- Standard Java Exeption classes
- Creating your own Exception classes
- Using try-catch
- Using the finally clause
- The multi-catch
- Best practices
- Assertions overview

### I/O Fundamentals

- What is I/O in Java?
- Reading and using the command line arguments
- Reading the console input stream
- Writing to the console
- Using I/O Streams
- Reading and writing objects

### File I/O with NIO 2

- What is a File Path?
- Using the Files class
- Directory and File operations
- Managing file system attributes
- Reading, writing, and creating files
- Watching for file system changes

### Database Applications with JDBC

- What is the JDBC interface?
- Connecting through the JDBC interface
- Java Types to SQL types
- Writing queries and returning results
- What is a Data Access Object?
- Using JDK7 Rowset types (JDK 7)

### Database Applications with JPA

- What is the Java Persistence API?
- Entity Overview
- Creating an Entity
- Entity Manager and Persistence Context
- CRUD Operations

### Concurrency

- What is concurrency?
- Recognizing multithreaded environments
- Variable scope and multi-threaded code
- Thread synchronization
- Liveness
- Creating guard blocks
- Immutable objects
- Using java.util.concurrent

### Localization

- Why localize a system?
- Localization defined
- Using the Locale object
- Create a message bundle for multiple locales
- Format messages, dates, and numbers with Java

## Flere Informationer:

For yderligere informationer eller booking af kursus, kontakt os på tlf.nr.: 44 88 18 00

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