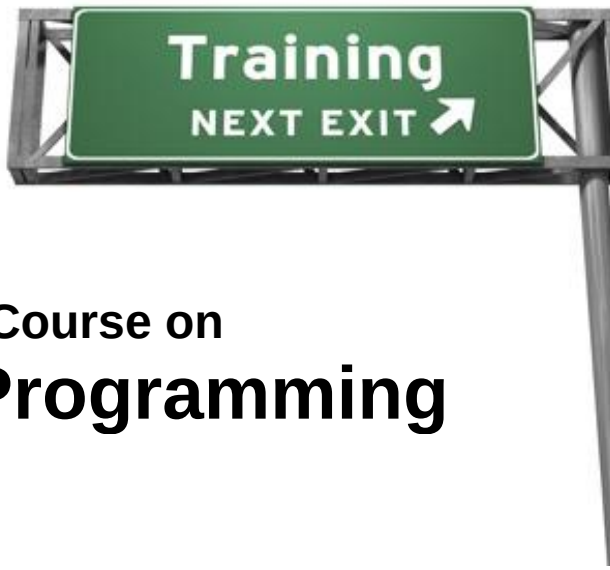
PROFESSIONAL TRAINING COURSE



4 Days Course on

Java SE 7 Programming

Two Sigma Technologies
19-2, Jalan PGN 1A/1, Pinggiran Batu Caves,
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About the Course

This course covers the core Application Programming Interfaces (API) you will use to design object-oriented applications with Java. Learn to create classes 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 how to correctly write multi-threaded applications. 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 JDK 7 Technology and the NetBeans Integrated Development Environment (IDE)
- Enhance object-oriented thinking skills using design patterns and best practices
- Identify good practices in the use of the language to create robust Java applications
- Manipulate files, directories and file systems
- Write database applications using standard SQL queries through JDBC
- Create high-performance multi-threaded applications

Prerequisites

- Understand object-oriented principles
- Basic understanding of database concepts and SQL syntax
- Have completed the Java SE 7 Fundamentals course, or experience with the Java language - can create, compile and execute programs
- Experience with at least one programming language

Course Objectives

- Perform multiple operations on database tables, including creating, reading, updating and deleting using JDBC technology
- Process strings using a variety of regular expressions
- Create high-performing multi-threaded applications that avoid deadlock
- 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
- Apply common design patterns and best practices
- 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

Target Audience

Software Developers who want to learn basic knowledge in Java programming

Course Settings

Venue/Date	Refer to Training Calendar
Timings	0900-1700
Inclusive	Certificates and notes
Course Fee	Contact Us at sales@2-sigma.com
Audience	IT Officer, Web Developer and Programmer
Level	Basic to Intermediate

Java SE 7 – Schedule

Day 1	
9.00am – 10.00am	**Java Platform Overview** • Introductions • Course Schedule • Java Overview • Java Platforms • OpenJDK • Licensing • Java in Server Environments • The Java Community Process
10.00am – 10.30am	Breakfast
10.30am – 1.00pm	**Java Syntax and Class Review** • Simple Java classes • Java fields, constructors and methods • Model objects using Java classes • Package and import statements **Encapsulation and Polymorphism** • Encapsulation in Java class design • Model business problems with Java classes • Immutability & Subclassing • Overloading methods • Variable argument methods
1.00pm – 2.00pm	Lunch
2.00pm – 5.00pm	**Java Class Design** • Access modifiers: private, protected and public • Method overriding • Constructor overloading • The instance of operator • Virtual method invocation • Polymorphism • Casting object references • Overriding Object methods
Day 2	
9.00am – 10.00am	**Advanced Class Design** • Abstract classes and type generalization • The static and final modifiers • Field modifier best practices • The Singleton design pattern • Designing abstract classes • Nested classes

	Enumerated types
10.00am – 10.30am	Breakfast
10.30am – 1.00pm	**Inheritance with Java Interfaces** • Java Interfaces • Types of Inheritance • Object composition and method delegation • Implementing multiple interfaces • The DAO design pattern
1.00pm – 2.00pm	Lunch
2.00pm – 5.00pm	**Generics and Collections** • Generic classes and type parameters • Type inference (diamond) • Collections and generics • List, set and Map • Stack and Deque
Day 3	
9.00am – 10.00am	**String processing** • String manipulation with StringBuilder and StringBuffer • Essential String methods • Text parsing in Java • Input processing with Scanner • Text output and formatting • Regular expressions with the Pattern and Matcher classes
10.00am – 10.30am	Breakfast
10.30am – 1.00pm	**Exceptions and Assertions** • Exceptions categories • Standard Java Exception classes • Creating your own Exception classes • Using try-catch and the finally clause • Using try-with-resources and the AutoCloseable interface • The multi-catch feature • Best practices using exceptions • Assertions
1.00pm – 2.00pm	Lunch
2.00pm – 5.00pm	**I/O Fundamentals** • I/O using Java • Reading the console input stream • Writing to the console • Using I/O Streams • Chaining I/O Streams • Channel I/O • Reading and writing objects using Serialization **File I/O with NIO 2** • The Path interface • The Files class • Directory and File operations • Managing file system attributes • Reading, writing, and creating files • Watching for file system changes
Day 4	
9.00am – 10.00am	**Threading** • Operating system task scheduling

	• Recognizing multithreaded environments • Creating multi-threaded solutions • Sharing data across threads • Synchronization and Deadlock • Immutable objects
10.00am – 10.30am	Breakfast
10.30am – 1.00pm	**Concurrency** • Creating Atomic variables • Using Read-Write Locks • Thread-safe collections • Concurrenct synchronizers (Semaphore, Phaser, and others) • Executors and ThreadPools to concurrently schedule tasks • Parallelism and the Fork-Join framework
1.00pm – 2.00pm	Lunch
2.00pm – 5.00pm	**Database Application with JDBC** • Layout of the JDBC API • JDBC divers • Queries and results • PreparedStatement and CallableStatement • Transactions • RowSet 1.1 RowSetProvider and RowSetFactory • The DAO Pattern and JDBC

More Information

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To register, please email to sales@2-sigma.com or fax the registration form to 03-61880602, we will contact you for further action.