

Core Java

Mode: Classroom

Duration: 40 hours

Course Outline

BeginnerJava Training Outline

- A First Look
 - A Simple Java Class
 - Java's "Hello World" Program
- Java Basics
 - Language and Platform Features
 - Program Life Cycle
 - The Java SE Development Kit (JDK)
- Class and Object Basics
 - The Object Model and Object-Oriented Programming
 - Classes, References, and Instantiation
 - Adding Data to a Class Definition
 - Adding Methods (Behavior)
- More on Classes and Objects
 - Accessing data, the "this" variable
 - Encapsulation and Access Control, public and private Access
 - Constructors and Initialization
 - static Members of a Class
 - Scopes, Blocks, References to Objects
- Flow of Control[briefly due to attendee experience]
 - Branching: if, if-else, switch
 - Iteration: while, do-while, for, break, continue
- Strings and Arrays
 - String, StringBuffer, StringBuilder
 - Arrays, Primitive Arrays, Arrays of Reference Types
 - varargs
- Packages
 - Package Overview - Using Packages to Organize Code
 - import statements
 - Creating Packages, package Statement, Required Directory Structure
 - Finding Classes, Packages and Classpath
- Composition and Inheritance
 - Using Composition to Deal With Complexity
 - Composition/HAS-A, Delegation

- Using Inheritance and Polymorphism to share commonality
- IS-A, extends, Inheriting Features, Overriding Methods, Using Polymorphism
- Class Object
- Abstract Classes

- Interfaces
 - Using Interfaces to Define Types
 - Interfaces and Abstract Classes

- Exceptions
 - Exceptions and the Exception Hierarchy
 - try and catch
 - Handling Exceptions
 - Program Flow with Exceptions
 - finally

- JDBC
 - JDBC basics
 - JDBC Architecture
 - Using JDBC drivers & DriverManager
 - Class Connection and connecting to a database
 - Class Statement and executing SQL statements
 - Other statement types
 - Driver types

- Java Collections and Generics
 - The Collections Framework and its API
 - Collections and Java Generics
 - Collection, Set, List, Map, Iterator
 - Autoboxing
 - Collections of Object (non-generic)
 - Using ArrayList, HashSet, and HashMap
 - for-each Loop
 - Processing Items With an Iterator
 - More About Generics

- Additional Java Features
 - Assertions
 - Type-safe Enums
 - Annotations
 - Additional Features in Java 6 and Java 7

- Conclusion