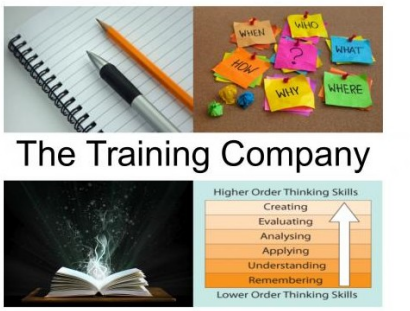

The Training Company

Java Programming

Course Length: 5 Days

Course Description:

This course teaches students how to develop Java applications. Topics covered include the Java programming language syntax, OO programming using Java, exception handling, file input/output, threads, collection classes, and networking. Students will develop and test Java applications (typically) using Eclipse. This course is a pre-requisite to all Application Server courses, and speciality Java Technology courses such as Struts, Spring, and Hibernate.

Who Should Attend:

This course is designed for applications programmers and designers planning to develop applications using the Java Programming Language.

Benefits of Attendance:

Upon completion of this course, students will be able to:

- Compile and run a Java application.
- Understand the role of the Java Virtual Machine in achieving platform independence.
- Navigate through the API docs.
- Use the Object Oriented paradigm in Java programs.
- Understand the division of classes into Java packages.
- Use Exceptions to handle run time errors.
- Select the proper I/O class among those provided by the JDK.
- Use threads in order to create more efficient Java programs.

Prerequisites:

Students should have taken the Software Development for Non-Programmers course or have programmed in at least one programming language - preferably C or C++. Some familiarity with Object Oriented Programming is desired but not required.

Course Outline:

- Chapter 1: Introduction
    1. What is Java?
    2. Versioning
    3. The Java Virtual Machine
    4. Writing a Java Program
    5. Packages
    6. Simple Java Programs
- Chapter 2: Language Components
    1. Primitive Data Types
    2. Comments
    3. Control Flow Statements
    4. The if Statement
    5. The switch Statement
    6. The while and do while Statements
    7. The for Statement
    8. The break Statement
    9. The continue Statement
    10. Operators
    11. Casts and Conversions
    12. Keywords
- Chapter 3: Object-Oriented Programming
    1. Defining New Data Types
    2. Constructors
    3. The String Class
    4. String Literals
    5. Documentation
    6. Packages
    7. The StringBuffer Class
    8. Naming Conventions
    9. The Date Class
    10. The import Statement
    11. Deprecation
    12. The StringTokenizer Class
    13. The DecimalFormat Class

- Chapter 4: Methods
    1. Introduction
    2. Method Signatures
    3. Arguments and Parameters
    4. Passing Objects to Methods
    5. Method Overloading
    6. Static Methods
    7. The Math Class
    8. The System Class
    9. Wrapper Classes
- Chapter 5: Arrays
    1. Introduction
    2. Processing Arrays
    3. Copying Arrays
    4. Passing Arrays to Methods
    5. Arrays of Objects
    6. The Arrays Class
    7. Command Line Arguments
    8. Multidimensional Arrays
- Chapter 6: Encapsulation
    1. Introduction
    2. Constructors
    3. The this Reference
    4. Data Hiding
    5. public and private Members
    6. Access Levels
    7. Composition
    8. Static Data Members
- Chapter 7: Inheritance & Polymorphism
    1. Introduction
    2. A Simple Example
    3. The Object Class
    4. Method Overriding
    5. Polymorphism
    6. Additional Inheritance Examples
    7. Other Inheritance Issues

- Chapter 8: Abstract Classes and Interfaces
    1. Introduction
    2. Abstract Classes
    3. Abstract Class Example
    4. Extending an Abstract Class
    5. Interfaces
- Chapter 9: Exceptions
    1. Introduction
    2. Exception Handling
    3. The Exception Hierarchy
    4. Checked Exceptions
    5. Advertising Exceptions with throws
    6. Developing Your Own Exception Classes
    7. The finally Block
- Chapter 10: Input and Output in Java
    1. Introduction
    2. The File Class
    3. Standard Streams
    4. Keyboard Input
    5. File I/O Using Byte Streams
    6. Character Streams
    7. File I/O Using Character Streams
    8. Buffered Streams
    9. File I/O Using a Buffered Stream
    10. Keyboard Input Using a Buffered Stream
    11. Writing Text Files
- Chapter 11: Collections
    1. Introduction
    2. Vectors
    3. Hashtables
    4. Enumerations
    5. Properties
    6. Collection Framework Hierarchy
    7. Lists
    8. Sets
    9. Maps
    10. The Collections Class

- Chapter 12: Networking
    1. Networking Fundamentals
    2. The Client/Server Model
    3. InetAddress
    4. URLs
    5. Sockets
    6. A Time-of-Day Client
    7. Writing Servers
    8. Client/Server Example
- Chapter 13: Threads
    1. Threads vs. Processes
    2. Creating Threads by Extending Thread
    3. Creating Threads by Implementing Runnable
    4. Advantages of Using Threads
    5. Daemon Threads
    6. Thread States
    7. Thread Problems
    8. Synchronization

For registration

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