

Java Programming Using JBuilder 2005 (5 Days)

Custom Training Institute

9085 Coyote Springs Road
Prescott Valley, AZ 86314
(928) 772-3811
FAX (928) 441-6444

Java Programming Using JBuilder 2005 (CTI 226)

Java is an object-oriented programming language specifically created for developing applications that will run on a LAN or the Internet. JBuilder provides a graphical environment for productive writing, testing, and debugging of Java applications. Students will learn to use JBuilder to write standalone and LAN-based Java applications and applets.

Prerequisites: *Prior programming experience with any procedural or object-oriented language. Experience with SQL or other GUI IDEs is helpful.*

Minimum software requirements: *Microsoft Windows NT 4.0 or Windows 2000 or later. JBuilder. Personal DB2, Oracle, or equivalent relational database. Java-compatible browser.*

Minimum hardware requirements: *Pentium at 500 MHz, 256 Mb RAM; 500 Mb free hard disk space before installation. Classroom machines do not need to be networked. Internet access.*

Microsoft PowerPoint on instructor's workstation for presentation purposes.

Module 1: Introduction and Overview

- Benefits and Features of Java
- The Java Virtual Machine
- Java's Core Packages
- The Java Developer's Kit
- Applets vs. Applications
- Object References
- Variables and Arrays
- Methods: Java's Functions
- Control Flow

Module 2: Object-Oriented Programming (OOP) in Java

- Abstraction
- Inheritance
- Interfaces
- Encapsulation
- Scope Modifiers
- Polymorphism
- Method Overloading

Module 3: Packages

- What are Packages
- Lifecycle of a Java Object
- Memory Management and Garbage Collection
- The lang Package
- The util Package
- The net Package
- The awt Package
- The io Package
- The applet Package
- Applets and HTML
- Events in the Lifetime of an Applet

Module 4: AWT and JFC

- How the AWT Works
- JFC Lightweight Framework
- Components and Containers
- Layout Managers
- Delegation Event Model
- Pluggable Look and Feel

Module 5: File I/O

- Files and Streams
- Standard Input and Output
- DataInput and DataOutput
- Random Access Files
- Networking I/O

Module 6: Object Serialization

- Object Streams
- Serializable Interface
- Protecting Data from Serialization
- Versioning

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Module 7: Threads and Exception Handling

- Multithreading
- Creating Threads
- The Error and Exception Hierarchy
- Throwing Exceptions
- Handling Runtime Exceptions
- The ThreadDeath Error

Module 8: Networking Java Applications

- Using Java to Network Applications
- Applets vs. Standalone Programs
- The URL class
- Sockets and `ServerSockets`
- Implementing a TCP/IP Server
Protocol and Content Handlers

Module 9: Database Connectivity

- JDBC and How it Works
- Database Access Methods
- The DriverManager Class
- Database Connection URL
- Drivers and JDBC Architecture
- Connection and Statement Interfaces
- ResultSets and Data Manipulation

Module 10: Review and Summary