



Software Learning Centers
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Commission for
Independent Education
Florida Department of Education

A Division of Moore Solutions inc

Java Programming

Part #: 75-903

Course length: 5 days

Course content

Lesson 1: The Java Environment

- Introduction
- Uses for Java
- The World Wide Web (WWW)
- HTML
- Competing Technologies
- CGI vs Java
- How Java Achieves Portability
- Advantages and Disadvantages
- Applications vs Applets
- Developing Java Applications
- Developing Java Applets
- The javadoc and jdb Tools
- The package Statement
- The import Statement
- Packages, Classes, Files and Directories

Lesson 2: Java Basics

- Introduction
- Java vs C++
- Comments
- Native Data Types
- Declaring Variables
- Identifiers
- Literals
- Expressions
- Floating Point Operations
- Java Function Calls
- Simple Statements
- Control Structures
- Local Variable Scope
- Simple Output

Lesson 3: Classes in Java

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- Java is Object-Oriented
- Instantiating a Class
- Class-Type Variables
- Operations on Class-Type Variables

Java Programming

- The null Value
- Member Access
- Class Definitions
- Method Overloading
- Constructors
- Encapsulation
- Access Specifiers
- Comparing Objects
- Class Variables
- Class Initialization
- final Variables
- Class Methods
- Finalization

Lesson 4: Arrays and Strings

- Java Arrays
- Array Constant
- Using Arrays
- Copying Array Elements
- String Objects
- String Methods
- String Concatenation
- Converting to String
- Class StringBuffer

Lesson 5: Inheritance

- Introduction
- Example of Inheritance
- Derivation Syntax
- Effects of Inheritance
- Protected Access
- Overriding Methods
- Constructor Chaining
- Inheritance and Finalization
- Abstract Classes

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- Casting Between Class Types

Lesson 6: Writing Java Applets

- What is an Applet
- A "Hello World" Applet
- The Applet Class
- The paint () Method
- The Graphics Class

Java Programming

- Invoking an Applet
- Java Fonts
- Selecting a Font
- Drawing Lines and Shapes
- Drawing with Color
- The Color Class
- Getting Applet Parameters
- Specifying Applet Parameters
- Foreground and Background Colors
- Events
- Intercepting Events
- Mouse Events
- The repaint () Method
- The update () Method
- Using Images
- Locating Images
- Loading Images
- Displaying Images
- Getting the Size of an Image
- Animation and Multi-Threading
- Creating a Thread
- Controlling a Thread
- Animating an Applet
- The start () and stop () Methods
- Audio Clips

Lesson 7: The Abstract Windowing Toolkit

- Introduction
- AWT Components
- Labels

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- Buttons
- Action Events
- Text Components
- Lists
- List Events
- Choice Menus
- Checkboxes
- Checkbox Groups
- Scrollbars
- Scrollbar Events
- Layout
- Layout Managers
- Class FlowLayout
- Class GridLayout

Java Programming

- Class GridBagLayout
- Nested Panels
- Extending Class Panel
- Nested Panels and Events
- Absolute Layout
- The Canvas Component
- Frames
- Class BorderLayout
- Menus
- Dialog Boxes
- Standalone Window Applications

Lesson 8: Exceptions

- Traditional Error Handling
- Creating an Exception Class
- The throw Statement
- Defining an Exception Handler
- The finally Statement
- Exception Types
- The throws Clause

Lesson 9: I/O Streams

- Introduction

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- Class InputStream
- Class OutputStream
- Using InputStream and OutputStream
- File I/O
- Class FileOutputStream Example
- Memory Stream
- Filter Stream
- Buffered I/O
- Data Input
- Data Output
- Printed Output
- The LineNumInputStream Example
- The Applet File I/O

Lesson 10: More of the Java API

- Cloning an Object
- Making a Class Cloneable
- The Vector Class

Java Programming

- Object Wrapper Classes
- Class Stack
- Class Hashtable
- Class Thread
- Thread Synchronization
- Using wait () and notifyall ()
- Extensions to Java API
- Layered Java APIs
- Appendix A: HTML
- Appendix B: Java Sample
- Appendix C: Java Class Hierarchy

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