

## Java Programming

<b>Java Programming Introduction Topics</b>	<b>Java Programming Intermediate Topics</b>	<b>Java Programming Advanced Topics</b>
<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Uses for Java</li> <li>• The Java Virtual Machine</li> <li>• Advantages and disadvantages of Java</li> <li>• Applications and applets</li> </ul> <p><b>The Java Environment</b></p> <ul style="list-style-type: none"> <li>• Developing Java Applications</li> <li>• Compiling and running Java programs</li> </ul> <p><b>Java Syntax</b></p> <ul style="list-style-type: none"> <li>• Data Types, Operators and Control Structures</li> <li>• Arrays and Strings</li> <li>• Flow control</li> <li>• Variable, class and method names</li> </ul> <p><b>Object and classes</b></p> <ul style="list-style-type: none"> <li>• Object creation</li> <li>• Constructors</li> <li>• Inheritance</li> <li>• Overloading</li> <li>• Overriding</li> <li>• equals vs. =</li> <li>• Use of the this and super keywords</li> </ul> <p><b>Abstract classes</b></p> <ul style="list-style-type: none"> <li>• Abstract classes and methods</li> <li>• Interfaces</li> <li>• Use of interfaces in Java</li> <li>• Creating an interface</li> <li>• Implementing an interface</li> </ul>	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Uses for Java</li> <li>• Client-Server concepts</li> <li>• Competing Technologies</li> <li>• Advantages and disadvantages of Java</li> </ul> <p><b>The Java Environment</b></p> <ul style="list-style-type: none"> <li>• Developing Java Applications</li> <li>• Compiling and running Java programs and applets</li> <li>• The Import statement and Java Packages</li> </ul> <p><b>Java Syntax Review</b></p> <ul style="list-style-type: none"> <li>• Data Types, Operators and Control Structures</li> <li>• Classes and Objects</li> <li>• Constructors and Constructor Chaining</li> <li>• Arrays and Strings</li> <li>• Inheritance and Function Overriding</li> <li>• Abstract classes and Interfaces</li> </ul> <p><b>Java Input and Output</b></p> <ul style="list-style-type: none"> <li>• Input and output classes</li> <li>• Reading and writing to files</li> <li>• Standard output, input, error</li> </ul> <p><b>Object persistence</b></p> <ul style="list-style-type: none"> <li>• Object serialization</li> <li>• Custom serialization</li> </ul>	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Uses for Java</li> <li>• Client-Server concepts</li> <li>• Competing Technologies</li> <li>• Java vs. CGI</li> </ul> <p><b>Networked Applications</b></p> <ul style="list-style-type: none"> <li>• Overview of Java Networking Technologies</li> </ul> <p><b>JDBC</b></p> <ul style="list-style-type: none"> <li>• Introduction to JDBC</li> <li>• JDBC vs. ODBC</li> <li>• JDBC and SQL</li> <li>• Creating and using JDBC Connections and Statements</li> <li>• Creating and using ResultSets to retrieve data</li> <li>• Transactions</li> </ul> <p><b>Remote Method Invocation</b></p> <ul style="list-style-type: none"> <li>• Introduction to RMI</li> <li>• Distributed vs. Non-distributed applications</li> <li>• RMI Interfaces and Classes</li> <li>• Passing Parameters remotely</li> <li>• Garbage collection of remote Objects</li> <li>• Configuration issues</li> </ul> <p><b>Java Servlets</b></p> <ul style="list-style-type: none"> <li>• What is a Servlet?</li> <li>• Benefits of Servlets</li> <li>• Servlet Lifecycle</li> <li>• Servlet Packages, Classes, Interfaces and Methods</li> </ul>

<p><b>Exceptions</b></p> <ul style="list-style-type: none"> <li>• Introduction to Exceptions</li> <li>• Creating exception classes</li> <li>• Try and catch blocks</li> <li>• Finally statement</li> <li>• Throwing exceptions</li> </ul> <p><b>Collections</b></p> <ul style="list-style-type: none"> <li>• Introduction to Collections</li> <li>• Java Collection framework</li> <li>• Use of Collections</li> </ul> <p><b>Packages</b></p> <ul style="list-style-type: none"> <li>• The package statement</li> <li>• The import statement</li> <li>• Organising classes into packages</li> </ul> <p><b>Jar files</b></p> <ul style="list-style-type: none"> <li>• Creating Jar archives</li> <li>• Deploying applications as jar archives</li> </ul> <p><b>Scope rules</b></p> <ul style="list-style-type: none"> <li>• Initialization of variables</li> <li>• Member variables and method variables</li> <li>• Use of private, public and protected</li> <li>• Use of final and static</li> <li>• Inner classes</li> </ul>	<p><b>Multithreading</b></p> <ul style="list-style-type: none"> <li>• Introduction to Threading</li> <li>• Creating Threads using the Thread Class</li> <li>• The Runnable Interface</li> <li>• Thread Scheduling and Priority</li> <li>• Thread Synchronization</li> <li>• Thread States</li> </ul> <p><b>Networked Applications</b></p> <ul style="list-style-type: none"> <li>• Overview of Java Networking Technologies</li> <li>• TCP/IP overview</li> <li>• Introduction to Sockets</li> <li>• Socket Programming in Java</li> </ul> <p><b>Event Handling</b></p> <ul style="list-style-type: none"> <li>• Creating events</li> <li>• Handling events</li> </ul>	<ul style="list-style-type: none"> <li>• Building and running Servlets</li> <li>• Handling form-based using Servlets</li> </ul> <p><b>Java Security</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• The Mocha Decompiler</li> <li>• Fundamentals of Public Key Encryption</li> <li>• Digital Signatures and Certificates</li> <li>• Java's Security Package</li> <li>• Signing an Applet</li> <li>• Enhanced Capabilities of trusted Applets</li> <li>• The Java Security Manager</li> </ul>
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