

## Java Slides Contents

#	Chapters	Sections	References
1.	Introduction	<ul style="list-style-type: none"> <li>- The Java Technology Phenomenon</li> <li>- Advantages of Java</li> </ul>	Zakhour – C 1
2.	The Hello World Application	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Creating Your First Application</li> <li>- A Closer Look at the "Hello World!" Application</li> </ul>	Zakhour – C 1
3.	Hello World! for IDEA	<ul style="list-style-type: none"> <li>- Java IDEs</li> <li>- Creating A Project</li> <li>- Making A Java Class</li> <li>- Building the Project</li> <li>- Running the Project</li> </ul>	Fields – C 1
4.	Object-Oriented Programming Concepts	<ul style="list-style-type: none"> <li>- What Is an Object?</li> <li>- What Is a Class?</li> <li>- What Is Inheritance?</li> <li>- What Is an Interface?</li> <li>- What Is a Package?</li> </ul>	Zakhour – C 2
5.	Variables	<ul style="list-style-type: none"> <li>- Types of Variables</li> <li>- Naming</li> <li>- Declaring Variables</li> <li>- Primitive Data Types</li> <li>- Default Values</li> </ul>	Zakhour – C 3
6.	Operators	<ul style="list-style-type: none"> <li>- Simple Assignment Operator</li> <li>- Arithmetic Operators</li> <li>- Unary Operators</li> <li>- Equality and Relational Operators</li> <li>- Logical Operators</li> <li>- Conditional Operator</li> <li>- Type Comparison Operator</li> <li>- Bitwise and Bit Shift Operators</li> <li>- Operator Precedence</li> </ul>	Zakhour – C 3
7.	Expressions, Statements, and Blocks	<ul style="list-style-type: none"> <li>- Expressions</li> <li>- Statements</li> <li>- Blocks</li> </ul>	Zakhour – C 3
8.	Decision-Making Statements	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- The if-then Statement</li> <li>- The if-then-else Statement</li> <li>- The switch Statement</li> </ul>	Zakhour – C 3
9.	Looping Statements	<ul style="list-style-type: none"> <li>- The while Statement</li> <li>- The do-while Statement</li> <li>- The for Statement</li> </ul>	Zakhour – C 3
10.	Branching Statements	<ul style="list-style-type: none"> <li>- The break Statement</li> <li>- The continue Statement</li> <li>- The return Statement</li> </ul>	Zakhour – C 3

11.	Methods	<ul style="list-style-type: none"> <li>- Creating a Method</li> <li>- Calling a Method</li> <li>- Passing Parameters</li> <li>- Overloading Methods</li> <li>- The Scope of Local Variables</li> <li>- Method Abstraction</li> </ul>	Liang - C 5
12.	Numbers	<ul style="list-style-type: none"> <li>- Numeric Type Conversions</li> <li>- Math Class</li> </ul>	Liang - C 5
13.	Packages	<ul style="list-style-type: none"> <li>- Package Naming &amp; Directories</li> <li>- Putting Classes into Packages</li> <li>- Using Classes from Packages</li> </ul>	Liang - C 5
14.	Array Basics	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Declaring an Array</li> <li>- Creating Arrays</li> <li>- Accessing an Array</li> <li>- Simple Processing on Arrays</li> <li>- Copying Arrays</li> </ul>	Liang - C 6
15.	Arrays and Methods	<ul style="list-style-type: none"> <li>- Passing Arrays to Methods</li> <li>- Returning an Array from a Method</li> <li>- Variable-Length Argument Lists</li> </ul>	Liang - C 6
16.	Processing Arrays	<ul style="list-style-type: none"> <li>- Searching Arrays</li> <li>- Sorting Arrays</li> <li>- Arrays Class</li> </ul>	Liang - C 6
17.	Multidimensional Arrays	<ul style="list-style-type: none"> <li>- Declaring and Creating of Two-Dimensional Arrays</li> <li>- Ragged Arrays</li> <li>- Simple Processing on Two-Dimensional Arrays</li> <li>- Three-Dimensional Arrays</li> </ul>	Liang - C 6
18.	Objects and Classes	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Defining Classes for Objects</li> <li>- Constructors</li> <li>- Creating Objects</li> <li>- Accessing an Object's Data and Methods</li> <li>- An Example: CreatObjectDemo.java</li> <li>- An Example: TestCircle1.java</li> <li>- Reference Data Fields and the null Value</li> <li>- Differences Between Variables of Primitive Types and Reference Types</li> <li>- Using Classes from the Java Library</li> <li>- Static Variables, Constants, and Methods</li> <li>- Visibility Modifiers</li> <li>- Data Field Encapsulation</li> <li>- Immutable Objects and Classes</li> <li>- Passing Objects to Methods</li> <li>- The Scope of Variables</li> <li>- Array of Objects</li> </ul>	Liang - C 7

19.	GUI Basics	<ul style="list-style-type: none"> <li>- Displaying Text in a Message Dialog Box</li> <li>- Getting Input from Input Dialogs Box</li> </ul>	Liang – C 1 - 7
20.	Strings	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- <b>String</b> Class</li> <li>- <b>Character</b> Class</li> <li>- <b>StringBuffer</b> Class</li> <li>- Command-Line Arguments</li> </ul>	Liang - C 8
21.	Text I/O	<ul style="list-style-type: none"> <li>- <b>File</b> Class</li> <li>- Writing Data Using PrintWriter</li> <li>- Reading Data Using Scanner</li> <li>- Example: Replacing Text</li> </ul>	Liang - C 8
22.	Inheritance	<ul style="list-style-type: none"> <li>- Superclasses and Subclasses</li> <li>- Using the <b>super</b> Keyword</li> <li>- Overriding Methods</li> <li>- The <b>Object</b> Class</li> </ul>	Liang - C 9
23.	Polymorphism	<ul style="list-style-type: none"> <li>- Polymorphism, Dynamic Binding, and Generic Programming</li> <li>- Casting Objects and the <b>instanceof</b> Operator</li> <li>- The <b>ArrayList</b> Class</li> <li>- The <b>protected</b> Data and Methods</li> <li>- The <b>final</b> Classes, Methods, and Variables</li> <li>- The <b>this</b> Keyword</li> <li>- Getting Input from the Console</li> </ul>	Liang - C 9
24.	Abstract Classes	<ul style="list-style-type: none"> <li>- Abstract Classes</li> </ul>	Liang - C 10
25.	Interfaces	<ul style="list-style-type: none"> <li>- Definition</li> <li>- The <b>Comparable</b> Interface</li> <li>- Interfaces vs. Abstract Classes</li> <li>- Creating Custom Interfaces</li> </ul>	Liang - C 10
26.	Object-Oriented Design	<ul style="list-style-type: none"> <li>- The Software Development Process</li> <li>- Discovering Class Relationships</li> <li>- Case Study: Borrowing Loans</li> </ul>	Liang - C 11
27.	GUI Programming	<ul style="list-style-type: none"> <li>- The Java GUI API</li> <li>- Frames</li> <li>- Layout Managers</li> <li>- The <b>FlowLayout</b> Class</li> <li>- The <b>GridLayout</b> Class</li> <li>- The <b>BorderLayout</b> Class</li> </ul>	Liang - C 17
28.	Exception Handling	<ul style="list-style-type: none"> <li>- Exception-Handling Overview</li> <li>- Example: Divide By Zero</li> <li>- Example: Handling <b>ArithmeticExceptions</b> and <b>InputMismatchExceptions</b></li> <li>- When to Use Exception Handling</li> </ul>	Deitel - C 13
29.	Formatted Output	<ul style="list-style-type: none"> <li>- Formatting Output with <b>printf</b></li> <li>- Printing Integers</li> <li>- Printing Floating-Point Numbers</li> <li>- Printing Strings and Characters</li> </ul>	Deitel - C 28

		<ul style="list-style-type: none"> <li>- Printing with Field Widths and Precisions</li> <li>- Using Flags in the <b>printf</b> Format String</li> </ul>	
30.	Database Concepts	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Relational Databases</li> <li>- The <b>books</b> Database</li> <li>- Entity-relationship (ER) diagram</li> </ul>	Deitel - C 25
31.	Microsoft Access 2007	<ul style="list-style-type: none"> <li>- Database Design</li> <li>- Starting Microsoft Access</li> <li>- Tables</li> <li>- Queries</li> <li>- Forms</li> <li>- Reports</li> </ul>	
32.	SQL	<ul style="list-style-type: none"> <li>- SQL query keywords</li> <li>- Basic <b>SELECT</b> Query</li> <li>- <b>WHERE</b> Clause</li> <li>- <b>ORDER BY</b> Clause</li> <li>- <b>INNER JOIN</b> Clause</li> <li>- <b>INSERT</b> Statement</li> <li>- <b>UPDATE</b> Statement</li> <li>- <b>DELETE</b> Statement</li> </ul>	Deitel - C 25
33.	Accessing Databases with JDBC	<ul style="list-style-type: none"> <li>- JDBC-ODBC driver</li> <li>- Creating an ODBC Data Source</li> <li>- Connecting to a Database</li> <li>- Querying a Database</li> <li>- Retrieving Metadata</li> <li>- Updating a Database</li> </ul>	Deitel - C 25 & Liang - C 32
34.	Recursion	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Example: Factorials</li> <li>- Example: Fibonacci Numbers</li> <li>- Recursion vs. Iteration</li> </ul>	Liang - C 19 & Deitel - C 15
35.	Data Structures	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Lists</li> <li>- Linked Lists</li> <li>- Stacks</li> <li>- Queues</li> <li>- Trees</li> </ul>	Deitel - C 17
36.	Collections	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- <b>Arrays</b> Class</li> <li>- Interface <b>Collection</b> and Class <b>Collections</b></li> <li>- <b>ArrayList</b> Class</li> <li>- Generics</li> <li>- <b>LinkedList</b> Class</li> <li>- <b>Collections</b> Algorithms</li> <li>- <b>Stack</b> Class</li> <li>- Class <b>PriorityQueue</b> and Interface <b>Queue</b></li> <li>- <b>Sets</b> Class</li> <li>- <b>Maps</b> Class</li> </ul>	Deitel - C 19