

# Core JAVA

**Prerequisite: Knowledge of OOP**

**Duration: 45 Days**

<p>1)The Java Language          What is JAVA?          Features of JAVA              Simple              Object –Oriented                  Object                  Class                  Inheritance                  Abstraction                  Polymorphism                  Encapsulation                  Dynamic Binding                  Message Passing              Robust              Multithreaded              Interpreted and high              Performance              Distributed              Dynamic          Java’s Magic              The Byte code          Importance of JAVA in internet              Java applet and application              Security              Portability</p> <p>2)An Overview of JAVA              A First Program                  Path setting                  Compiling the program                  Execution of the program                  A closer look at the first Program              Comment              JAVA keyword</p> <p>3) Data Types, Variables ,and Arrays              Integers                  Bytes                  Shorts                  Int                  Long              Floating – Point types                  Float                  Double              Characters              Boolean</p>	<p>Literals              Integers literals              Floating –point literals              Boolean Literals              Character literal              String literals</p> <p>Variable              Declaring a variable              The scope of Variable              Type conversion              Java’s automation conversion</p> <p>Casting              Incomputable type              The type promotion rule</p> <p>Array              One Dimensional array              Multi dimensional array              Alternative array declaration syntax</p> <p>4)Operator              Arithmetic operator              The Basic operator              The modulus operator              Arithmetic assignment operator              Increment and decrement Operator              The Bit-wise Operator                  Bitwise logical operator                  Left shift                  Right shift              Relational operator              Boolean Logical operator</p> <p>5) Control statement              JAVA ‘S selection statement                  If                  If –else                  Else- If                  Switch              Iteration statement                  For                  While                  Do-while                  Nested loop              Jump statement                  Using break                  Using continue</p>	<p>6)Introducing Classes              Class Fundamental                  A simple Class                  Declaring Object                  A closer look at new                  Assigning Object                  Reference variable              Introducing method                  Adding method to the class                  Returning a value                  Adding method that takes                  parameter              Constructor                  Parameterized constructor                  This keyword garbage                  collection                  Finalize method</p> <p>7) A closer look at method and classes              Method Overloading              Constructor overloading              Using object as a parameter              Returning object              Recursion              Understanding static              Introducing final</p> <p>8)Inheritance              Member basic                  Single inheritance                  A super class variable can                  reference a sub class object              Using super                  Using super to call super              class                  Constructor                  A second use of super              Creating a multilevel              Hierarchical              When constructor calling              Method overloading              Using abstract classes              Using final with inheritance</p>
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<p>9)Package and interfaces</p> <ul style="list-style-type: none"> <li>Interfaces               <ul style="list-style-type: none"> <li>Defining an interfaces</li> <li>Implementing</li> </ul> </li> <li>Interfaces               <ul style="list-style-type: none"> <li>Applying interfaces</li> <li>Variable in interfaces</li> <li>Interfaces can be extended</li> </ul> </li> <li>Package               <ul style="list-style-type: none"> <li>Defining a package</li> <li>Finding package and</li> </ul> </li> </ul> <p>CLASSPATH</p> <ul style="list-style-type: none"> <li>A short package</li> </ul> <p>Example</p> <ul style="list-style-type: none"> <li>Access protection</li> <li>Importing packages</li> </ul> <p>10) Exception handling</p> <ul style="list-style-type: none"> <li>Exception handling</li> </ul> <p>Fundamentals</p> <ul style="list-style-type: none"> <li>Exception type</li> <li>Uncaught exception</li> <li>Using try and catch</li> <li>Multiple catch clauses</li> <li>Nested try catch</li> <li>Throw</li> <li>Throws</li> <li>Finally</li> </ul> <p>11) Multithreaded Programming</p> <ul style="list-style-type: none"> <li>What is thread</li> <li>Creating thread               <ul style="list-style-type: none"> <li>Extending thread</li> <li>Implementing run able</li> </ul> </li> <li>Creating multiple thread</li> <li>Using is Alive and join</li> <li>Thread property</li> </ul> <p>12) I/O</p> <ul style="list-style-type: none"> <li>I/O Basic               <ul style="list-style-type: none"> <li>Streams</li> <li>Byte Streams and</li> <li>Character Streams</li> </ul> </li> </ul>	<p>Reading Console Input</p> <ul style="list-style-type: none"> <li>Reading Characters</li> <li>Reading Strings</li> </ul> <p>Writing console output</p> <ul style="list-style-type: none"> <li>The print writer class</li> </ul> <p>Reading and writing files</p> <ul style="list-style-type: none"> <li>File writer</li> <li>File reader</li> </ul> <p>File Output Stream Reader</p> <p>File Input Stream Reader</p> <p>13) The Applet</p> <ul style="list-style-type: none"> <li>Apple basic               <ul style="list-style-type: none"> <li>The applet class</li> </ul> </li> <li>Applet architecture</li> <li>Paint and repaint method in applet</li> <li>HTML APPLET tag</li> <li>Get Document Base ()and get</li> <li>Code Base()</li> </ul> <p>14)Event handling</p> <ul style="list-style-type: none"> <li>Introduction of event handling</li> <li>Event listener interface</li> <li>The action listener interface</li> <li>The mouse listener interface</li> <li>The mouse motion listener</li> <li>interface</li> <li>The mouse wheel listener</li> <li>interface</li> <li>The Window focus listener</li> <li>interface</li> <li>Adapter classes</li> </ul> <p>15)Introducing the AWT</p> <ul style="list-style-type: none"> <li>AWT classes</li> <li>Windows fundamentals               <ul style="list-style-type: none"> <li>Component</li> <li>Container</li> <li>Panel</li> <li>Frame</li> </ul> </li> <li>Working with frame windows               <ul style="list-style-type: none"> <li>Setting the window's</li> <li>dimension</li> </ul> </li> </ul>	<p>Hiding and showing window</p> <ul style="list-style-type: none"> <li>Setting window the closing</li> <li>a frame</li> </ul> <p>Working with graphics</p> <ul style="list-style-type: none"> <li>Drawing lines</li> <li>Drawing rectangle</li> <li>Drawing ellipse and circles</li> <li>Drawing arc</li> <li>Drawing polygons</li> </ul> <p>Working with color</p> <ul style="list-style-type: none"> <li>Setting the color</li> </ul> <p>Working with fonts</p> <ul style="list-style-type: none"> <li>Setting fonts</li> </ul> <p>16)Using AWT controls , layouts</p> <ul style="list-style-type: none"> <li>Managers and Menus</li> <li>Labels</li> <li>Using BUTTONS</li> <li>Applying Checkboxes</li> <li>Checkbox group</li> <li>Choice controls</li> <li>Using List</li> <li>Using text field</li> <li>Using text area</li> <li>Understanding Layouts Managers</li> <li>Flow layout</li> <li>Border layout</li> <li>Grid layout</li> <li>Menu Bars and Menus</li> <li>File dialog</li> </ul> <p>17)Introduction to swing</p> <ul style="list-style-type: none"> <li>Programming</li> <li>Swing and AWT Comparison</li> <li>Swing component               <ul style="list-style-type: none"> <li>Label</li> <li>Applet</li> <li>Button</li> <li>Text field</li> <li>Text Area</li> <li>Radio Button</li> <li>Check Box</li> <li>Checkbox group</li> </ul> </li> </ul>
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# Mobile Application Development using Android

Prerequisite: Knowledge of Android

Duration: 45 Days

<p><b>Introduction to Android</b></p> <ul style="list-style-type: none"><li>● Android Overview and History</li><li>● How it all got started</li><li>● Why Android is different (and important)</li></ul> <p><b>Android Stack</b></p> <ul style="list-style-type: none"><li>● Overview of the stack</li><li>● Linux Kernel</li><li>● Native Library</li><li>● Dalvik</li></ul> <p><b>Development Tools</b></p> <ul style="list-style-type: none"><li>● Hierarchy Viewer</li><li>● DDMS and log result</li><li>● DDMS and simulating calls</li><li>● DDMS and file upload and Download</li><li>● DDMS and screenshots</li><li>● Making and using SD card image</li></ul> <p><b>Hello World App</b></p> <ul style="list-style-type: none"><li>● Creating your first project</li><li>● The manifest file</li><li>● Layout resources</li><li>● Running your app on Emulator</li></ul> <p><b>Main Building Blocks</b></p> <ul style="list-style-type: none"><li>● Activities</li><li>● Activity Life Cycle</li><li>● Intents, services</li><li>● Content Providers</li></ul> <p><b>Basic Android User Interface</b></p> <ul style="list-style-type: none"><li>● Using XML for UI layout</li><li>● Basic Widgets</li><li>● Linear Layout</li><li>● Relative Layout</li><li>● Table Layout</li></ul> <p><b>Selection Widgets</b></p> <ul style="list-style-type: none"><li>● The Role and use of adapters</li><li>● Lists, Spinners, Grids</li><li>● Auto completion Fields</li></ul>	<p><b>Resources</b></p> <ul style="list-style-type: none"><li>● Drawables</li><li>● Value, XML</li></ul> <p><b>Advanced UI</b></p> <ul style="list-style-type: none"><li>● Complex UI Components</li><li>● Building UI for performances</li><li>● Menus and dialogs</li><li>● Graphics and animation</li></ul> <p><b>Android system Overview</b></p> <ul style="list-style-type: none"><li>● File Systems, Preferences</li><li>● Notifications, security Modal</li></ul> <p><b>Services</b></p> <ul style="list-style-type: none"><li>● Overview of services in android</li><li>● Implementing a Service</li><li>● Service Life Cycle</li></ul> <p><b>Multimedia in Android</b></p> <ul style="list-style-type: none"><li>● Multimedia Supported audio Formats</li><li>● Simple Media playbacks</li><li>● Simple video formats</li></ul> <p><b>SQL Database</b></p> <ul style="list-style-type: none"><li>● Introduction SQLite</li><li>● SQLite Open Helper and creating Database</li><li>● Opening and closing database</li><li>● Working with cursors inserts, Updates and deletes</li></ul> <p><b>Location Services</b></p> <ul style="list-style-type: none"><li>● Working with the location manager</li><li>● Working with Google Maps Extensions</li></ul> <p><b>Broadcast Receivers</b></p> <ul style="list-style-type: none"><li>● What are Broadcast Receivers</li><li>● Implementing broadcast and how To use them</li></ul> <p><b>Intent Filters</b></p> <ul style="list-style-type: none"><li>● Role of filters</li><li>● Intent Matching Rules</li></ul>	<ul style="list-style-type: none"><li>● Filters in your manifest</li><li>● Filters in dynamic broadcast Receivers</li></ul> <p><b>Networking</b></p> <ul style="list-style-type: none"><li>● Working with HTTP Client</li><li>● HTTP request and response</li><li>● Posting forms</li><li>● Cookies</li></ul> <p><b>Telephony</b></p> <ul style="list-style-type: none"><li>● Making calls</li><li>● Making Data connectivity and Activity</li><li>● Accessing phone properties and Status</li><li>● Controlling the phone</li></ul> <p><b>Camera</b></p> <ul style="list-style-type: none"><li>● Taking picture</li><li>● Rendering previews</li></ul> <p><b>Bluetooth</b></p> <ul style="list-style-type: none"><li>● Controlling Local Bluetooth devices</li><li>● Discovering and bonding with Bluetooth devices</li><li>● Managing Bluetooth connection</li><li>● Communication with Bluetooth</li></ul> <p><b>Advances Programming</b></p> <ul style="list-style-type: none"><li>● SMS</li><li>● Alarm Manager</li><li>● System Event</li><li>● Text To Speech</li><li>● Google Chart</li></ul>
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