

# Japan Communication India Skill Development Center

## Java Application System Developer Course Detail

Track 2b

## Java Application Software Developer: Phase1

Course Details	Hours of Study
<p><b>SQL Overview</b></p> <ul style="list-style-type: none"> <li>➤ Introduction</li> <li>➤ Database, DB Server &amp; DB Language</li> <li>➤ What is SQL?</li> <li>➤ Categories of SQL Applications</li> <li>➤ Monolithic vs. Client/Server to the Internet</li> <li>➤ Querying &amp; Updating Data</li> </ul> <p>SELECT Statement: Common Elements            SELECT Statements, Table Expressions and sub-queries            SELECT Statement: The FROM Clause            SELECT Statement: The WHERE Clause            SELECT Statement: SELECT Clause &amp; Aggregation Functions</p> <ul style="list-style-type: none"> <li>➤ Creating Database Objects</li> </ul> <p>Creating Tables, Specifying Integrity Constraints, Character Sets &amp; Collating Sequences, Designing Tables, Views, Creating Databases, Users &amp; Data Security</p> <ul style="list-style-type: none"> <li>➤ Introduction of ODBC               <ul style="list-style-type: none"> <li>Introduction, how does ODBC work, simple example of ODBC</li> </ul> </li> <li>➤ Transaction and Multi user Usage (Overview)</li> </ul> <ul style="list-style-type: none"> <li>➤ Programming with SQL</li> </ul> <p>Introduction with embedded SQL            Optimization of Statements</p> <ul style="list-style-type: none"> <li>➤ Procedural Database Objects               <ul style="list-style-type: none"> <li>Stored Procedures</li> <li>Stored Functions</li> <li>Triggers</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>➤ OR Concepts</li> </ul> <p>User Defined data types, Inheritance, reference &amp; Collections</p>	70

## Java Application Software Developer: Phase 1

Course Details	Hours of Study
<p><b>Java Programming</b></p> <ul style="list-style-type: none"><li>➤ Breaking the Surface <b>The Way Java Works, Code Structure in Java, Anatomy of a Class, Writing a class with a Main, Look into the Main Method, Looping, Conditional branching, Exercises.</b></li><li>➤ A Trip to Objectville <b>Introduction, Making your first object, Movie Objects, Quick! Get out of Main Method, knowing Object better, Exercises</b></li><li>➤ Know your variables <b>What are variables, declaring a variable, ways of assigning values to variables, back away from that Keyword!, reserved Keywords, controlling your object, Object Reference, Java Exposed, Garbage Collection, Heap, Arrays, Exercises.</b></li><li>➤ How Objects behave <b>Who knows abt Objects?, Size Effects, Sending things to method, get back things from method, Java cares about Types, Cool things to do with parameters and return types, encapsulation, declaring and initializing instance variables, difference between instance and local variables, exercises.</b></li><li>➤ Extra-Strength methods <b>A Simple DOT COM game, Developing a Class, BRAIN POWER (know which class to develop first and which the next)</b></li><li>➤ Using Java Library <b>Java pre-built classes, Wake up &amp; smell the library, things you can do with Array List, Java Exposed, comparing Array List to regular Array, Lets fix the Dotcom code, Lets build a REAL game, What needs to change, final version of Dotcom class, Boolean Expressions, Ready-Bake Code, the JAVA API, Exercises.</b></li></ul>	70

## Java Application Software Developer: Phase 1

Course Details	Hours of Study
<p><b>Java Programming Contd.</b></p> <ul style="list-style-type: none"> <li>➤ Better living in Objectville  <b>Plan your JAVA Code with Future in mind, Serious Polymorphism, Life and Death of an Object</b></li> <li>➤ Numbers Matter  <b>Global, Non-static, Static Methods, difference between non-static and static method, What does it mean to have a class with static methods, static variables, Initialing Static variables, Number formatting, Wrapping a primitive, Exercises.</b></li> <li>➤ Risky Behavior  <b>Exceptions, Exception in an object, Flow control try/catch block, Exceptions are Polymorphic, Java cross 7.0, Exercises.</b></li> <li>➤ A Very Graphic  <b>Your first GUI, working with SWING, JFC/SWING, SWING Frameworks, Exercises.</b></li> <li>➤ Working more with Objects  <b>saving objects, serialization, De-serialization, Exercises</b></li> <li>➤ Making a Connection  <b>Connecting, sending &amp; receiving, TCP port, read &amp; write data to socket, about Java threads, Thread life cycle, Multi-threading programming, Exercises</b></li> <li>➤ Interacting with DB: JDBC  <b>Overview, JDBC drivers, step-by-step usage of JDBC API, seven basic steps in using JDBC, handling JDBC exceptions.</b></li> <li>➤ Data Structure &amp; Release Code  <b>Using Sort, Generic means for safety, Using Generic Classes, Using Generic Methods, Interfaces, extends &amp; implements, using Polymorphic arguments and generics, deploying your solution, separate source code and class files, compiling and running packages, Steps for making and deploying a Java Web Start Aps.</b></li> </ul>	

## Java Application Software Developer: Phase 1

Course Details	Hours of Study
<b>Multi-threaded Programming with Java Technology</b> <ul style="list-style-type: none"><li>➤ Concepts</li><li>➤ Foundations</li><li>➤ Life Cycle—Thread Life Cycle</li><li>➤ Scheduling</li><li>➤ Synchronization</li><li>➤ Complexities</li><li>➤ Thread Specific Data (TSD)</li><li>➤ Details</li><li>➤ Libraries</li><li>➤ RMI</li><li>➤ Performance</li><li>➤ SWING and Multi-threaded programming</li><li>➤ Examples</li></ul>	30

*Assessment of Phase 1: (a) Objective & Subjective Test (b) Interview (c) Grading & Evaluation. : 5 hrs*

## Java Application Software Developer: Phase 2

Course Details	Hours of Study
<b>Web Component Development</b> <ul style="list-style-type: none"><li>➤ Developing a View Component</li><li>➤ Developing a Controller Component</li><li>➤ Developing Dynamic Forms</li><li>➤ Sharing Application Resources Using the Servlet Context</li><li>➤ Designing the Business tier</li><li>➤ Developing Web Applications Using Session Management</li><li>➤ Integrating Web Applications with Databases</li><li>➤ Developing JSP Pages</li><li>➤ Developing JSP pages Using Custom Tags</li><li>➤ Developing Web Applications Using Struts Action Forms</li><li>➤ Building Reusable Web Presentation Components</li></ul>	30
<b>Web Component Model</b> <ul style="list-style-type: none"><li>➤ Developing Servlets</li><li>➤ Developing with Java Server Pages Technology</li><li>➤ Using Web-tier Design Patterns</li><li>➤ Implementing a Transaction and Security Policy</li></ul>	30
<b>MVC Architecture</b> <ul style="list-style-type: none"><li>➤ Introduction of MVC pattern</li><li>➤ Evolution of Web Application design architecture<ul style="list-style-type: none"><li>- Model 1</li><li>- Model 2</li><li>- Application frameworks</li></ul></li></ul>	10

## Java Application Software Developer: Phase 2

Course Details	Hours of Study
<p><b>Web Development---Servlets</b></p> <ul style="list-style-type: none"> <li>➤ Servlet in big picture of J2EE</li> <li>➤ Servlet request &amp; response model</li> <li>➤ Servlet life cycle</li> <li>➤ Servlet scope objects</li> <li>➤ Servlet request</li> <li>➤ Servlet response: Status, Header, Body</li> <li>➤ Error Handling</li> <li>➤ Deploying Application onto Tomcat Web Server</li> </ul>	50
<p><b>Web Development---Session Tracking (insight)</b></p> <ul style="list-style-type: none"> <li>➤ Underlying mechanisms</li> <li>➤ Why do we need Session Tracking feature of Servlet</li> <li>➤ Servlet Session Tracking Programming APIs</li> <li>➤ Session timeout and invalidation</li> </ul>	10
<p><b>Web Development---STRUTS</b></p> <ul style="list-style-type: none"> <li>➤ Using JavaBeans Components in JSP Pages</li> <li>➤ Overview of MVC Architecture--Revisit</li> <li>➤ Simplifying Access to MVC Results: the JSP 2.0 Expression Language</li> <li>➤ Overview and Motivation</li> <li>➤ Setting up and Configuring Struts</li> <li>➤ Processing requests with Action Objects</li> <li>➤ Handling request params with Form Beans</li> <li>➤ Prepopulating and redisplaying HTML forms</li> <li>➤ Sample Application Development with STRUTS</li> </ul>	40

*Assessment of Phase 2: (a) Objective & Subjective Test (b) Interview (c) Grading & Evaluation: 5 hrs*

## Java Application Software Developer: Round-Up

<b>Course Details</b>	<b>Hours of Study</b>
<b>Application Development</b> ➤ Working with Tomcat Web Server ➤ Working with ANT Tool ➤ Working with JUnit ➤ Working with Eclipse	50
<b>Project Work &amp; Work Shop</b>	130
<b>FINAL SKILL ASSESSMENT &amp; TRAINING REPORT</b>	10

<b>Training Tack</b>	<b>Total Hours</b>
Track 1: JASD	520 ~ 550
Doubt Clearing Session	50
Total Hours	~ 600