



**J2I Study Abroad Training Program**  
**オブジェクト指向プログラミングコース (Fundamental\_IT)**

Softbridge Solutions Japan Co.,Ltd.  
 TEL: 03-5280-7818  
 FAX: 03-5280-0503  
 URL: <http://www.j2i.jp>

| ITコース                 |  |                |      |                            |
|-----------------------|--|----------------|------|----------------------------|
| No                    | Module   | Duration (hrs) | Days | Comment                    |
| 9                     | OOPs Concepts & UML Design                             | 24             | 6    | Understanding OOPs &       |
| 10                    | Fundamentals of Java Programming Language (Core Java)  | 40             | 10   | Basic JAVA Programming     |
| 11                    | Java Programming Language (Advanced Java)              | 88             | 22   | J2EE / JSP included        |
| 12                    | Oracle 9i Application Developer                        | 72             | 18   | Database Programming       |
| 13                    | Oracle 9i DBA  | 16             | 4    | Intro to Database          |
| 14                    | Mini Project (Java + Oracle 9i)                        | 40             | 10   | Application Devepolment    |
| 14A                   | Preparation & Submission of Assignments & Case Studies | 20             | 5    | Assignment & Exam Schedule |
|                       | Term End Study Leave                                   | 12             | 3    |                            |
|                       | Oral / Practical Exams                                 | 4              | 1    |                            |
|                       | Theory Exams   | 4              | 1    |                            |
| Total IT Hours / Days |  | 320            | 80   |                            |



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| No  | Module   | Duration (hrs) |
|---|--|----------------|
| 9   | <b>OOPs Concepts &amp; UML Design</b>  | 24             |
| Pre-requisites :  |  |                |
| <ul style="list-style-type: none"> <li>- Basic understanding of OOPs</li> <li>- Strong Programming Logic</li> <li>- Good Implementation Knowledge of any Programming Language</li> </ul>  |  |                |
| Objective :   |  |                |
| <ul style="list-style-type: none"> <li>- Develop Strong Fundamentals of Software Development Life Cycle (SDLC)</li> <li>- Develop Practical skills in the latest OO analysis and design methods</li> <li>- Learn how a consistent use of OO techniques leads to shorter development life cycles, increased productivity and reduced system maintenance costs</li> </ul> |  |                |
| <b>Topics</b>   |  |                |
| 1   | <b>Introducing the UML</b><br>Relationships<br>Interactions<br>Patterns and Frameworks<br>Rational Unified Process<br>Case studies   |                |
| 2   | <b>Introducing the UML</b><br>Review of SDLC<br>Why we Model<br>Introducing the UML  |                |
| 3   | <b>Relationships</b><br>Classes<br>Relationships<br>Common mechanisms<br>Diagrams<br>Class diagrams<br>Advanced classes<br>Advanced Relationships  |                |
| 4   | <b>Interactions</b><br>Interfaces<br>Types and Roles<br>Packages<br>Instances<br>Object Diagrams<br>Interactions<br>Use Cases<br>Use Case diagrams<br>Interaction Diagrams<br>Activity Diagrams                    |                |
| 5   | <b>Patterns and Frameworks</b><br>Events and Signals<br>State Machines<br>Processes and Threads<br>Time and Space<br>State chart Diagrams<br>Components<br>Deployment<br>Collaborations<br>Patterns and Frameworks |                |
| 6   | <b>Rational Unified Process</b><br>Component Diagrams<br>Deployment Diagrams<br>Systems and Models<br>Applying UML<br>Rational Unified Process   |                |
| 7   | <b>Case Studies</b><br>Gather requirement through UML tech.<br>Provident fund calculation<br>Food order automation<br>Network based common mailing system<br>Digital library for research papers                   |                |



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| No  | Module   | Duration (hrs) |
|---|--|----------------|
| 10  | <b>Fundamentals of Java Programming Language(Core Java)</b>  | 40             |
| Pre-requisites :<br>- Create and edit text files using a text editor<br>- Use a World Wide Web (WWW) browser<br>- Solve mathematical or logic problems<br>- Define common computer terminology<br>- Understand the concept of a variable<br>- Develop simple scripts or programs using a scripting or third-generation language   |  |                |
| Objective :<br>Understand the following thoroughly;<br>- fundamentals of the Java language (using JDK 1.4)<br>- Java language and it relation to OO programming and the Object Model<br>- how to use Java multi-threading and exception handling features<br>- Understand and use classes, inheritance, polymorphism<br>- Understand the use of packages to organize code<br>- Create well structured Java programs<br>- Able to Compile and execute programs with the JDK 2<br>- Use the core Java libraries (java.lang, java.util packages)<br>- Use Swing and the Java event delegation model to create well structured graphical user interfaces<br>- Understand exceptions and use them for error handling<br>- Understand and use basic I/O streams<br>- Understand the basics of using JDBC (Java Database Connectivity) to access databases from Java<br>- Develop GUI applications using AWT and Swing |  |                |
| <b>Topics</b>   |  |                |
| 1   | <b>Object Oriented Programming Concepts</b><br>Conventional vs. Object Oriented Programming<br>Inheritance, Encapsulation and Polymorphism                       |                |
| 2   | <b>Getting Started with Java™</b><br>Writing a Simple Class<br>Adding Methods to the Class<br>Language Statements<br>Using Strings<br>Specializing in a Subclass |                |
| 3   | <b>Essential Java™ Programming</b><br>Fields and Variables<br>Using Arrays<br>Static Methods and Fields<br>Java Packages<br>Using the JDK                        |                |
| 4   | <b>Advanced Java™ Programming</b><br>Inheritance and Polymorphism<br>Interfaces and Abstract Classes<br>Exception s<br>Multithreading<br>Programming JavaBeans™  |                |



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|   |  |
|---|--|
| 5 | <b>Java Developer's Toolbox</b><br>Utility Classes<br>Vector and Hashtable<br>Collections<br>Inner Classes<br>Java I/O   |
| 6 | <b>Writing Graphical User Interfaces</b><br>Containers and Layout Managers<br>Writing Simple Graphical Applications<br>Writing Complete Graphical Applications |
| 7 | <b>Java™ Application Development</b><br>File System Access<br>Networking<br>Java Database Connectivity (JDBC)<br>Writing Java Applets                          |
| 8 | <b>Enterprise Java Overview</b><br>Developing Java Servlets<br>Introduction to Java Server Pages (JSPs)<br>Java for the Enterprise                             |



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| No  | Module  | Duration (hrs) |
|---|---|----------------|
| 11  | <b>Java Programming Language (Advanced Java)</b>  | <b>88</b>      |
| Pre-requisites :  |   |                |
| <ul style="list-style-type: none"> <li>- Basic Knowledge of OOPS</li> <li>- Strong Programming Logic</li> <li>- Good Implementation Knowledge of simple Java programs</li> </ul>  |   |                |
| Objective :   |   |                |
| <ul style="list-style-type: none"> <li>- Develop confidence &amp; the steps required to design, develop and test Java programs</li> <li>- Develop Web based Applications Using JAVA</li> <li>- Develop confidence to appear for SCJP Exams</li> </ul> |   |                |
| <b>Topics</b>   |   |                |
| 1   | <b>The java.sql package</b><br>Driver Manager, Driver, Connection, Statement, Result Set<br>Writing database applications<br>Connector interface, creating new classes, applications  |                |
| 2   | <b>Java Beans : Component Technology in Java (BDK)</b><br>BeanBox concept<br>Creating Beans with simple properties and methods<br>Packaging Beans: Manifest files and jar files<br>Using JavaBeans in IDEs  |                |
| 3   | <b>Creating Beans with</b><br>Bound properties<br>Constrained properties<br>Indexed properties<br>Events<br>Property editors, Customizers   |                |
| 4   | <b>Servlets : Dynamic Content Generation</b><br>Advantages of Servlets over CGI<br>The Servlet interface<br>The HttpServlet, HttpServletRequest, HttpServletResponse classes  |                |
| 5   | <b>Session Tracking with Cookies &amp; HttpSession</b><br>JSP : Separating UI from Content generation code<br>MVC architecture<br>Life cycle of a JSP page<br>Directives, Implicit and Explicit Objects, Scriptlets, Expressions  |                |
| 6   | <b>Scope</b><br>Session Tracking<br>Custom Tag Libraries in JSP   |                |
| 7   | <b>EJB : Server side distributed component architecture</b><br>EJB containers<br>EJB Types : Session and Entity Beans<br>EJBObject, EJBHome   |                |
| 8   | <b>Life Cycle of a stateless session Bean &amp; stateful session bean</b><br>Creating Beans Stateless Session Beans & Stateful Session Beans<br>Deploying Beans : XML deployment descriptors<br>Writing bean client applications<br>Life Cycle of an Entity Bean  |                |
| 9   | <b>Enterprise Java Beans Query Language</b><br>Creating Entity Beans<br>Message driven beans<br>Calling EJBs from JSP pages<br>JSP, Servlets and EJB in J2EE<br>Java Security<br>Web-tier security<br>EJB-tier security<br>Application-tier-client security<br>Native Methods<br>Calling Win32 APIs from Java |                |



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| No   | Module   | Duration (hrs) |
|--|--|----------------|
| 12   | <b>Oracle 9i Application Developer</b>   | 72             |
| Pre-requisites :<br>- Basic Knowledge of Database<br>- Basic Programming Skills  |  |                |
| Objective :<br>- Understand & gain confidence using Oracle 9i<br>- Develop skills to work with DBA or Application Developers<br>- Develop confidence & prepare individuals to appear for OCP |  |                |
| <b>Topics</b>  |  |                |
| 1  | <b>SQL</b><br>Writing Basic SQL Select Statements<br>Restricting and Sorting Data<br>Single-Row Functions<br>Displaying Data from Multiple Tables<br>Aggregating Data using Group Functions<br>Identify the available group functions<br>Use group functions<br>Group data using the GROUP BY clause<br>Include or exclude grouped rows by using the HAVING clause |                |
| 2  | <b>Subqueries</b><br>Describe the types of problems that subqueries can solve<br>Define subqueries<br>List the types of subqueries<br>Write single-row and multiple-row subqueries   |                |
| 3  | <b>Producing Readable Output with iSQL*Plus</b><br>Produce queries that require a substitution variable<br>Produce more readable output<br>Create and execute script files   |                |
| 4  | <b>Manipulating Data</b><br>Describe each DML statement<br>Insert rows into a table<br>Update rows in a table<br>Delete rows from a table<br>Merge rows in a table<br>Control transactions   |                |
| 5  | <b>Creating and Managing Tables</b><br>Describe the main database objects<br>Create tables<br>Describe the datatypes that can be used when specifying column definition<br>Alter table definitions<br>Drop, rename and truncate tables<br>Including Constraints<br>Describe constraints<br>Create and maintain constraints   |                |
| 6  | <b>Creating Views</b><br>Describe a view<br>Create, alter the definition, and drop a view<br>Retrieve data through a view<br>Insert, update and delete data through a view   |                |
| 7  | <b>Creating Other Database Objects</b><br>Create, maintain and use sequences<br>Create and maintain indexes<br>Create private and public synonyms  |                |
| 8  | <b>Oracle Data Dictionary</b><br>Describe the data dictionary views a user may access<br>Query data from the data dictionary   |                |



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| 9  | <b>Writing Control Structures</b><br>Identify the uses and types of control structures<br>Construct an IF statement<br>Construct and identify different loop statements<br>Use logic tables<br>Control block flow using nested loops and labels                      |
| 10 | <b>Working with Composite Datatypes</b><br>Create user-defined PL/SQL records<br>Create a record with the % ROWTYPE attribute<br>Create a PL/SQL table<br>Create a PL/SQL table of records<br>Describe the difference between records, tables, and tables of records |
| 11 | <b>Overview of Relational Databases, SQL, and PL/SQL</b><br>Discuss the theoretical and physical aspects of a relational database<br>Describe the Oracle implementation of the RDBMS and ORDBMS<br>Describe the use and benefits of PL/SQL                           |
| 12 | <b>Aggregating Data using Group Functions</b><br>Identify the available group functions<br>Use group functions<br>Group data using the GROUP BY clause<br>Include or exclude grouped rows by using the HAVING clause   |
| 13 | <b>Views</b><br>Create and use an inline view<br>Perform Top 'N' Analysis  |
| 14 | <b>Other Database Objects</b><br>Describe database objects and their uses<br>Create, maintain, and use sequences<br>Create and maintain indexes<br>Create private and public synonyms  |
| 15 | <b>Controlling User Access</b><br>Create users<br>Create roles to ease setup and maintenance of the security model<br>Use the GRANT and REVOKE statements to grant and revoke object privileges  |
| 16 | <b>Declaring Variables</b><br>List the benefits of PL/SQL<br>Describe the basic PL/SQL block and its sections<br>Describe the significance of variables in PL/SQL<br>Declare PL/SQL variables<br>Execute a PL/SQL block  |
| 17 | <b>Writing Explicit Cursors</b><br>Distinguish between an implicit and an explicit cursor<br>Use a PL/SQL record variable<br>Write a cursor FOR loop   |
| 18 | <b>Advanced Explicit Cursor Concepts</b><br>Write a cursor that uses parameters<br>Determine when a FOR UPDATE clause in a cursor is required<br>Determine when to use the WHERE CURRENT OF clause<br>Write a cursor that uses a subquery                            |
| 19 | <b>Writing Basic SQL Statements</b><br>List the capabilities of SQL SELECT statements<br>Execute a basic SELECT statement<br>Differentiate between SQL statements and SQL*Plus commands  |
| 20 | <b>Restricting and Sorting Data</b><br>Limit the rows retrieved by a query<br>Sort the rows retrieved by a query   |



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| 21 | <b>Displaying Data from Multiple Tables</b><br>Write SELECT statements to access data from more than one table by using equality and nonequality joins<br>View data that generally does not meet a join condition by using outer joins<br>Join a table to itself                           |
| 22 | <b>Single Row Functions</b><br>Describe the various types of functions available in SQL<br>Use character, number, and date functions in SELECT statements<br>Describe the use of conversion functions  |
| 23 | <b>Writing Executable Statements</b><br>Describe the significance of the executable section<br>Write statements in the executable section<br>Describe the rules of nested blocks<br>Execute and test a PL/SQL block<br>Use coding conventions  |
| 24 | <b>Interacting with the Oracle Server</b><br>Write a successful SELECT statement in PL/SQL<br>Declare the datatype and size of a PL/SQL variable dynamically<br>Write DML statements in PL/SQL<br>Control transactions in PL/SQL<br>Determine the outcome of SQL DML statements            |
| 25 | <b>Handling Exceptions</b><br>Define PL/SQL exceptions<br>Recognize unhandled exceptions<br>List and use different types of PL/SQL exception handlers<br>Trap unanticipated errors<br>Describe the effect of exception propagation in nested blocks<br>Customize PL/SQL exception messages |
| 26 | <b>Subqueries</b><br>Describe the types of problems that subqueries can solve<br>Define subqueries<br>List the types of subqueries<br>Write single-row and multiple-row subqueries   |
| 27 | <b>Multiple-Column Subqueries</b><br>Write multiple-column subqueries<br>Describe and explain the behavior of subqueries when null values are retrieved<br>Write subqueries in a FROM clause   |
| 28 | <b>Producing Readable Output with iSQL*Plus</b><br>Produce queries that require a substitution variable<br>Produce more readable output<br>Create and execute script files   |
| 29 | <b>Manipulating Data</b><br>Describe each DML statement<br>Insert rows into a table<br>Update rows in a table<br>Delete rows from a table<br>Merge rows in a table<br>Control transactions   |
| 30 | <b>Including Constraints</b><br>Describe constraints<br>Create and maintain constraints  |



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|--|---|----------------|
| 13   | <b>Oracle 9i DBA</b>  | 16             |
| Pre-requisites :   |   |                |
| - Thorough knowledge of Oracle 9i                        |   |                |
| Objective :  |   |                |
| - To gain confidence as Oracle Database Administrator    |   |                |
| - To achieve Oracle Database Administrator Certification |   |                |
| <b>Topics</b>  |   |                |
| 1  | <b>Oracle Architectural Components</b><br>Describe the Oracle architecture and its main components<br>Describe the structures involved in connecting a user to an Oracle instance   |                |
| 2  | <b>Getting Started With the Oracle Server</b><br>Identify common database administrative tools available to a DBA<br>Identify the features of the Oracle Universal Installer<br>Explain the benefits of Optimal Flexible Architecture<br>Set up password file authentication<br>List the main components of the Oracle Enterprise Manager and their uses      |                |
| 3  | <b>Maintaining the Control File</b><br>Explain the uses of the control file<br>Describe the contents of the control file<br>Multiplex and manage the control file<br>Manage the control file with Oracle Managed Files<br>Obtain control file information   |                |
| 4  | <b>Managing Tablespaces and Data files</b><br>Describe the logical structure of tablespaces within the database<br>Create tablespaces<br>Change the size of the tablespace<br>Allocate space for temporary segments<br>Change the status of tablespaces<br>Change the storage settings of tablespaces<br>Implement Oracle Managed Files                       |                |
| 5  | <b>Managing Tables</b><br>Identify the various methods of storing data<br>Describe Oracle data types<br>Distinguish between an extended versus a restricted ROWID<br>Describe the structure of a row<br>Create regular and temporary tables<br>Manage storage structures within a table<br>Reorganize, truncate, drop a table<br>Drop a column within a table |                |
| 6  | <b>Managing an Oracle Instance</b><br>Create and manage initialization parameter files<br>Configure OMF<br>Start up and shut down an instance<br>Monitor the use of diagnostic files  |                |
| 7  | <b>Creating a Database</b><br>Describe the prerequisites necessary for database creation<br>Create a database using Oracle Database Configuration Assistant<br>Create a database manually   |                |
| 8  | <b>Maintaining Redo Log Files</b><br>Explain the purpose of online redo log files<br>Describe the structure of online redo log files<br>Control log switches and checkpoints<br>Multiplex and maintain online redo log files<br>Manage online redo log files with OMF   |                |



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| 9  | <b>Storage Structure and Relationships</b><br>Describe the logical structure of segments within the database<br>Describe the segment types and their uses<br>List the keywords that control block space usage<br>Obtain information about storage structures from the data dictionary   |
| 10 | <b>Managing Undo Data</b><br>Describe the purpose of undo data<br>Implement Automatic Undo Management   |
| 11 | <b>Managing Indexes</b><br>Describe the different types of indexes and their uses<br>Create various types of indexes<br>Reorganize indexes<br>Drop indexes<br>Get index information from the data dictionary<br>Monitor the usage of an index   |
| 12 | <b>Data Dictionary Content and Usage</b><br>Identify key data dictionary components<br>Identify the contents and uses of the data dictionary<br>Query the data dictionary   |
| 13 | <b>Managing Password Security and Resources</b><br>Manage passwords using profiles<br>Administer profiles<br>Control use of resources using profiles<br>Obtain information about profiles, password management and resources<br>Managing Users<br>Create new database users<br>Alter and drop existing database users<br>Monitor information about existing users<br>Managing Privileges<br>Identify system and object privileges<br>Grant and revoke privileges<br>Identify auditing capabilities<br>Managing Roles<br>Create and modify roles<br>Control availability of roles<br>Remove roles<br>Use predefined roles<br>Display role information from the data dictionary<br>Maintaining Data Integrity<br>Implement data integrity constraints<br>Maintain integrity constraints<br>Obtain constraint information from the data dictionary<br>Using Globalization Support<br>Choose database character set and national character set for a database<br>Specify the language- dependent behavior using initialization parameters, environment variables and the ALTER SESSION command<br>Use the different types of National Language Support (NLS) parameters<br>Explain the influence on language-dependent application behavior<br>Obtain information about Globalization Support usage |



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| 14 | <p><b>Oracle9i Performance Tuning</b><br/>         Describe the roles associated with the database tuning process<br/>         Describe the dependency between tuning in different development phases<br/>         Describe service level agreements<br/>         Describe appropriate tuning goals<br/>         Describe the most common tuning problems<br/>         Describe the tuning considerations during development and production<br/>         Describe performance and safety tradeoffs<br/>         Sizing the Buffer Cache<br/>         Describe how the buffer cache is used by different Oracle processes<br/>         Describe the tuning issues related to the buffer cache<br/>         Monitor the use of the buffer cache, also the different pools within the buffer cache<br/>         Implement dynamic SGA allocation<br/>         Set the DB_CACHE_ADVICE parameter<br/>         Create and size multiple buffer pools<br/>         Detect and resolve free list contention<br/>         Sizing other SGA Structures<br/>         Monitor and size the redo log buffer<br/>         Monitor and size the java pool<br/>         Control the amount of Java session memory used by a session</p> |
| 15 | <p><b>Oracle9i Performance Tuning</b><br/>         Configure the instance to use I/O Slaves<br/>         Configure and use multiple DBW processors<br/>         Monitoring and Detecting Lock Contention<br/>         Define levels of locking<br/>         Describe possible causes of contention<br/>         Use Oracle utilities to detect lock contention<br/>         Resolve contention in an emergency<br/>         Prevent locking problems<br/>         Recognize Oracle errors arising from deadlocks<br/>         Using Oracle Blocks Efficiently<br/>         Describe the correct usage of extents and Oracle blocks<br/>         Explain space usage and the high water mark<br/>         Determine the high water mark<br/>         Recover space from sparsely populated segments<br/>         Describe and detect chaining and migration of Oracle blocks<br/>         Perform index reorganization<br/>         Monitor indexes to determine usage<br/>         Diagnostic and Tuning Tools</p>   |
| 16 | <p><b>Explain how the alert.log file is used</b><br/>         Explain how background trace files are used<br/>         Explain how user trace files are used<br/>         Describe the statistics kept in the dynamic performance views<br/>         Explain how StatsPack collects statistics<br/>         Collect statistics using StatsPack<br/>         Collect statistics using Enterprise Manager<br/>         Use other tuning tools<br/>         Database Configuration and I/O Issues<br/>         Explain the advantages of distributing different Oracle file types<br/>         Describe reasons for partitioning data in tablespaces<br/>         Diagnose tablespace usage problems<br/>         Describe how checkpoints work<br/>         Monitor and tune checkpoints<br/>         Monitor and tune redo logs<br/>         Optimize Sort Operations<br/>         Describe how sorts are performed<br/>         Identify the SQL operations which require sorts<br/>         Differentiate between disk and memory sorts<br/>         Create and monitor temporary tablespaces</p>   |
| 17 | <p><b>Reduce total sorts and disk sorts</b><br/>         Determine the number of sorts performed in memory<br/>         Set old and new sort parameters</p>  |



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| 18 | <p><b>Tuning Oracle Shared Server</b></p> <ul style="list-style-type: none"> <li>Identify issues associated with managing users in a Shared Server environment</li> <li>Diagnose and resolve performance issues with Oracle Shared Server processes</li> <li>Configure the Oracle Shared Server environment to optimize performance</li> <li>Application Tuning</li> <li>Describe the role of the DBA in tuning Applications</li> <li>Explain different storage structures, and why one storage structure may be preferred over another</li> <li>Explain the different types of indexes</li> <li>Explain Index Organized Tables</li> <li>Describe partitioning methods</li> <li>Explain the use of the DBMS_STATS procedure</li> <li>Describe Materialized Views and use of Query Rewrites</li> <li>List requirements for OLTP, DSS and Hybrid Systems</li> <li>SQL Statement Tuning</li> <li>Describe how the Optimizer is used</li> <li>Explain the concept of plan stability</li> <li>Use stored outlines</li> <li>Describe how hints are used</li> <li>Use SQL Trace and TKPROF</li> <li>Collect statistics on indexes and tables</li> <li>Describe the use of histograms</li> <li>Copy statistics between databases</li> <li>Sizing the Shared Pool</li> </ul> |
| 19 | <p><b>Tuning Oracle Shared Server</b></p> <ul style="list-style-type: none"> <li>Measure and tune the library cache hit ratio</li> <li>Measure and tune the dictionary cache hit ratio</li> <li>Size and pin objects in the shared pool</li> <li>Tune the shared pool reserve space</li> <li>Describe the UGA and session memory considerations</li> <li>Explain other tuning issues related to the shared pool</li> <li>Set the large pool</li> <li>Diagnosing Contention For Latches</li> <li>Describe the purpose of latches</li> <li>Describe the different types of latch request</li> <li>Diagnose contention for latches</li> <li>Tune the appropriate resources to minimize latch contention</li> <li>Tuning the Operating System and Using Resource Manager</li> <li>Describe different system architectures</li> <li>Describe the primary steps of OS tuning</li> <li>Identify similarities between OS and DB tuning</li> <li>Understand virtual memory and paging</li> <li>Explain the difference between a process and a thread</li> <li>Set up Database Resource Manager</li> <li>Assign users to Resources Manager groups</li> <li>Create resource plans within groups</li> </ul>   |
| 20 | <p><b>Networking Overview</b></p> <ul style="list-style-type: none"> <li>Explain solutions included with Oracle9i for managing complex networks</li> <li>Describe Oracle networking add-on solutions</li> </ul>   |
| 21 | <p><b>Basic Oracle Net Architecture</b></p> <ul style="list-style-type: none"> <li>Explain the key components of the Oracle Net layered architecture</li> <li>Explain Oracle Net Services role in client server connections</li> <li>Describe how web client connections are established through Oracle networking products</li> </ul>  |
| 22 | <p><b>Backup and Recovery Overview</b></p> <ul style="list-style-type: none"> <li>Describe the basics of database backup, restore and recovery</li> <li>List the types of failure that may occur in an Oracle environment</li> <li>Define a backup and recovery strategy</li> </ul>   |
| 23 | <p><b>Instance and Media Recovery Structures</b></p> <ul style="list-style-type: none"> <li>Describe the Oracle processes, memory structures, and files relating to recovery</li> <li>Identify the importance of checkpoints, redo log files, and archived log files</li> <li>Describe ways to tune instance recovery</li> </ul>  |



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| 24 | <b>Oracle Recovery Manager Overview and Configuration</b><br>Identify the features and components of RMAN<br>Describe the RMAN repository and control file usage<br>Describe channel allocation<br>Describe the Media Management Library interface<br>Connect to RMAN without the recovery catalog<br>Configure the RMAN environment  |
| 25 | <b>User-Managed Complete Recovery</b><br>Describe media recovery<br>Perform recovery in Noarchivelog mode<br>Perform complete recovery in Archivelog mode<br>Restore datafiles to different locations<br>Relocate and recover a tablespace by using archived redo log files<br>Describe read-only tablespace recovery   |
| 26 | <b>Recovery Catalog Creation and Maintenance</b><br>Describe the contents of the recovery catalog<br>Create the recovery catalog<br>Maintain the recovery catalog by using RMAN commands<br>Use RMAN to register, resynchronize, and reset a database<br>Query the recovery catalog to generate reports and lists<br>Create, store, and run scripts<br>Describe methods for backing up and recovering the recovery catalog  |
| 27 | <b>Basic Net Server-Side Configuration</b><br>Identify how the listener responds to incoming connections<br>Configure the listener using Oracle Net Manager<br>Control the listener using the Listener Control Utility (lsnrctl)<br>Describe Dynamic Service Registration<br>Configure the listener for IIOP and HTTP connections   |
| 28 | <b>Basic Oracle Net Services Client-Side Configuration</b><br>Describe the difference between host naming and local service name resolution   |
| 29 | <b>Configuring the Database Archiving Mode</b><br>Describe the differences between Archivelog and Noarchivelog modes<br>Configure a database for Archivelog mode<br>Enable automatic archiving<br>Perform manual archiving of logs<br>Configure multiple archive processes  |
| 30 | <b>Configure multiple destinations, including remote destinations</b>   |
| 31 | <b>Oracle Recovery Manager Overview and Configuration</b><br>Identify the features and components of RMAN<br>Describe the RMAN repository and control file usage<br>Describe channel allocation<br>Describe the Media Management Library interface<br>Connect to RMAN without the recovery catalog<br>Configure the RMAN environment<br>Perform recovery in Noarchivelog mode<br>Perform complete recovery in Archivelog mode<br>Restore datafiles to different locations<br>Relocate and recover a tablespace by using archived redo log files |
| 32 | <b>Transporting Data Between Databases</b><br>Describe the uses of the Export and Import utilities<br>Describe Export and Import concepts and structures<br>Perform simple Export and Import operations<br>List guidelines for using Export and Import  |



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| 33 | <p><b>User-Managed Incomplete Recovery</b><br/>         Describe the steps of incomplete recovery<br/>         Perform an incomplete database recovery<br/>         Identify the loss of current online redo log files<br/>         Basic Oracle Net Services Client-Side Configuration<br/>         Describe the difference between host naming and local service name resolution<br/>         Use Oracle Net Configuration Assistant to configure: Host Naming, Local naming method, Net service names<br/>         Perform simple connection troubleshooting<br/>         Usage and Configuration of the Oracle Shared Server<br/>         Identify the components of the Oracle Shared Server<br/>         Describe the Oracle Shared Server architecture<br/>         Configure the Oracle Shared Server<br/>         Identify and explain usefulness of related dictionary views</p> |
| 34 | <p><b>RMAN Backups</b><br/>         Identify types of RMAN specific backups<br/>         Use the RMAN BACKUP command to create sets<br/>         Back up the control file<br/>         Back up the archived redo log files<br/>         Use the RMAN COPY command to create image copies</p>   |
| 35 | <p><b>RMAN Incomplete Recovery</b><br/>         Perform an incomplete database recovery using UNTIL TIME<br/>         Perform an incomplete database recovery using UNTIL SEQUENCE</p>   |
| 36 | <p><b>RMAN Maintenance</b><br/>         Perform cross checking of backups and copies<br/>         Update the repository when backups have been deleted<br/>         Change the availability status of backups and copies<br/>         Make a backup or copy exempt from the retention policy<br/>         Catalog backups made with operating system commands</p>  |
| 37 | <p><b>RMAN Complete Recovery</b><br/>         Describe the use of RMAN for restoration and recovery</p>  |
| 38 | <p><b>Loading Data into a Database</b><br/>         Demonstrate usage of direct-load insert operations<br/>         Describe the usage of SQL*Loader<br/>         Perform basic SQL*Loader operations<br/>         List guidelines for using SQL*Loader and direct-load insert</p>   |



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| No   | Module  | Duration (hrs) |
|--|---|----------------|
| 14   | <b>Project -Application Development J2EE / JSP / Struts</b>   | 40             |
| Pre-requisites :<br>- Knowledge of Java Programming Language<br>- Knowledge of Web based programming Architecture  |   |                |
| Objective :<br>- Develop skills to design and build scalable, secure, maintainable web applications<br>- Delivery of scalable enterprise applications with complex web interfaces based on J2EE technologies<br>- Knowledge of common web application design problems (J2EE Design patterns)<br>- Through knowledge for developing applications in J2EE and web technologies such as Servlets, JSPs, EJBs & Struts |   |                |
| <b>Topics</b>  |   |                |
| 1  | <b>J2EE Application Architecture</b><br>Technical Overview of J2EE<br>J2EE Application Architectures (Web based)  |                |
| 2  | <b>Servlets API Essentials</b><br>Servlets<br>Writing a Basic HttpServlet<br>Form Processing<br>Controlling Client Behavior<br>Sessions and Cookies                   |                |
| 3  | <b>Writing JavaServer™ Pages</b><br>Introduction to JavaServer™ Pages<br>Basic JSP Syntax<br>Implicit Objects<br>Actions and JavaBeans™<br>Brief Overview of JSTL     |                |
| 4  | <b>Web Applications</b><br>Understanding Web Applications<br>Configuring Web Applications<br>Application and Session Events   |                |
| 5  | <b>Security (Optional)</b><br>Overview of Security<br>Form Based Security<br>Basic Authentication<br>Programmatic Security  |                |
| 6  | <b>Writing Custom Tags</b><br>Introduction to Custom Tags<br>Developing Custom Tags<br>Developing Advanced Custom Tags (Optional)                                     |                |
| 7  | <b>Getting Started with Struts</b><br>Jakarta Struts Project<br>MVC and Struts<br>Review Servlets, JSP and Web Applications<br>Struts Controller, Views and Resources |                |



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| 8  | <b>Your First Struts Application</b><br>Configuring Struts applications<br>Defining views & actions<br>Defining FormBeans<br>Action Mappings             |
| 9  | <b>Mapping the Model to the View</b><br>Review of Using Custom Tags<br>Introducing Struts Tags<br>Using HTML Tags<br>Using Bean Tags<br>Using Logic Tags |
| 10 | <b>Project Work</b>  |
| 11 | <b>Uploading Files and I18N</b><br>Uploading Files<br>Internationalization   |
| 12 | <b>Advanced Form Management</b><br>DynaActionForms<br>The Validator Framework  |
| 13 | <b>Working with Tiles</b><br>Using Tiles<br>Advanced Tiles   |