



## **Advance JAVA Modules:-**

### Part 1 – Introduction - DBMS, RDBMS, ORDBMS

- Introduction to databases
- Difference between DBMS, RDBMS and ORBBMS
- About 4-5 more subtopics needed.

### Part 2 – SQL, PL/SQL & T/SQL

- Writing SQL queries
- Writing PL/SQL queries
- Writing T/SQL queries
- About 4-5 more subtopics needed.

### Part 3 – WebServers& Application Servers (Weblogic, Websphere, Tomcat)

- What are web servers and application servers?
- How to do initial Server configurations?
- How to install/uninstall applications?

### Part 4 – Eclipse

- Eclipse Introduction
- Project definition and configurations
- Creating Projects (Java, J2EE) in Eclipse
- Importing/Exporting Existing Projects
- Server Configuration
- Execution and debugging
- Advance features

### Part 5 – Hibernate

- Hibernate Introduction
- Object-Relational Persistence and ORM
- Entity definitions
- Hibernate Configuration
- Hibernate Mapping
- Working with Persistent Classes/Objects
- Hibernate Query Language
- Hibernate Caching

- Advanced Concepts

## Part 6 – JUnit

- Unit Testing
- Unit Testing with JUnit
- Create a JUnit test
- Run your test via Eclipse
- Run your test via code
- Annotations
- Assert statements
- Mocking
- Life cycle, Test execution and Debugging

## Part 7 – Log4J

- Installation
- Architecture
- Configuration
- Sample Program
- Logging Methods
- Logging Levels
- Log Formatting
- Logging in Files
- Logging in Database
- Case study
- Implementation Strategies

## Part 8 – Ant

- Ant Introduction
- Installation of Ant
- Preparing Ant project
- Creating build xml
- Run your Ant build from Eclipse
- Run your Ant build from the command line
- Case study and configurations
- Script definitions and executions
- Application deployment

## Part 9 – Servlet

- Developing Web Application
- History of Web programming
- Web Infrastructure setup
- Purpose of Servlet in J2EE
- Servlet life cycle
- Servlet Basics
- Servlet API
- HTTP Basics

- Session management mechanisms
- Servlet context and Servlet config
- Redirecting web application using Servlet
- Advance Servlet features (Forward, Include, Redirect)

#### Part 10 – JSP

- JSP Introduction
- How to write & deploy JSP
- Advantages of JSP over Servlet
- JSP Elements (Directives, Declaration, Scriptlets, Actions)
- Implicit objects in JSP
- Custom tags
- JSP and JavaBeans

#### Part 11 – Struts

- MVC Architecture
- Struts Framework
- Struts Controller Components
- Struts View Components
- Struts Model Components
- Struts Tag Libraries
- Exception Handling in Struts

#### Part 12 – JNDI

- Naming and Directory Concepts
- JNDI Overview
- Examples
- Common Problems (and Their Solutions)
- Context lookups and Bindings

#### Part 13 – EJB

- Stateless and Stateful Session EJB
- Session EJB Life Cycle
- Entity EJB and Life Cycle
- EJB Queries
- JTA and Transaction management

#### Part 14 – JMS

- Architecture
- Message Delivery Models
- MDB life cycles
- The JMS Programming Model
- Producing and Consuming Messages
- Client to Produce Messages
- Client to Consume Messages
- Synchronous and Asynchronous Message Consumption

## Part 15 – Spring Framework

- Introduction to spring framework
- Environment setup
- Wiring beans
- Minimizing XML configurations
- AOP
- Dependency Injection and Inversion of control
- Bean Managed container and its configurations
- Bean definitions and their usage
- Hibernate Integration
- Struts Integration
- Developing Applications with spring

## Part 16 – Design Patterns

- Why to use Patterns?
- Popular J2EE Patterns
- MVC-II
- Front Controller
- Composite Views
- Intercepting Filter
- Business Delegate
- Service Locator
- Session Façade
- Transfer Objects
- DAO
- DAO Factories

## Part 17 – SCWCD/OCP-WCD

- SCWCD/OCP-WCD Certification
- Exam pattern
- Comment Questions
- Exam Preparation

## Part 18 – JAXP

- Introduction to JAXP
- Simple API for XML
- Document Object Model
- XML Document Structure
- Parsing Techniques
- DOM and SAX parsing

## Part 19 – JAAS

- Core fundamentals
- Authentication
- Authorization