

Advance JDBC Programming:

- Overview of Database Driver Architecture
- Introduction to JDBC Standard Extension API (javax.sql)
- Connection Pooling
- JDBC Programming with ORACLE, MYSQL, etc.
- Batch Processing
- Connecting to non-conventional databases
- Use of Excel API
- Database caching (case study with HSDb,CSQL)
- Working with Multiple Databases
- Handling SQL escape syntax
- Calling SQL functions, Database stored procedures
- Dealing with Database Metadata
- Handling Binary Data (Operation on Image File)
- Type mapping & SQL3 Data types

Introduction to J2EE

- J2EE Overview
- Why J2EE?
- J2EE Architecture
- J2EE APIs
- J2EE Containers

Java Server Technologies

Servlet

- Web Application Basics.
- Architecture and challenges of Web Application.
- Introduction to servlet
- Servlet life cycle
- Developing and Deploying Servlets
- Exploring Deployment Descriptor (web.xml).
- Handling Request and Response
- Initializing a Servlet
- Accessing Database
- Servlet Chaining
- Session Tracking & Management
- Dealing with cookies
- Transferring Request
- Accessing Web Context
- Passing INIT and CONTEXT Parameter
- Sharing information using scope object
- Controlling concurrent access
- User Authentication

- Filtering Request and Response
- Programming Filter
- Filter Mapping
- Servlet Listeners

Java Server Pages Technology:

- Basic JSP Architecture
- Life Cycle of JSP (Translation, compilation)
- JSP Tags and Expressions
- Role of JSP in MVC-2
- JSP with Database
- JSP Implicit Objects
- Tag Libraries
- JSP Expression Language (EL)
- Using Custom Tag
- JSP Capabilities:
 - Exception Handling
 - Session Management
 - Directives
- JSP with Java Bean

RMI (Remote Method Invocation)

RMI overview

RMI architecture

Example demonstrating RMI

Enterprise JAVA Beans

- Enterprise Bean overview
- Types of enterprise beans
- Advantages of enterprise beans
- The Life Cycles of Enterprise Beans
- Working with Session Beans
- Statefull vs. Stateless Session Beans
- Working with Entity Beans
- Message Driven Beans

JNDI (Java Naming and Directory Interface)

- JNDI overview
- JNDI API
- Context operations
- Using JNDI in J2EE applications

Struts Framework:

- What is Struts?
- Struts Architecture
- Struts classes - ActionForward, ActionForm, ActionServlet, Action classes
- Understanding struts-config.xml
- Understanding Action Mappings
- Struts flow with an example application
- Struts Tiles Framework.
- Struts Validation Framework
- Internationalizing Struts Application
- Struts with Message Resources

Awareness to Other J2EE Technologies:

- Java Mail
- JTA
- Web Services
- JMS
- ANT
- Log4J
- JSF
- Hibernate
- Spring Framework
- Design Pattern