

## COURSE CONTENTS

### Adv. JAVA

#### **Database Programming using JDBC**

- Introduction to JDBC
- JDBC Drivers & Architecture
- DriverManager, Connection, Statement, ResultSet
- CRUD Operation using JDBC
- Prepared Statement & CallableStatement
- ResultSetMetaData & DatabaseMetadata
- Connecting to non-conventional Databases
- JDBC Driver Types
- Batch Updates
- Scrollable & Updatable ResultSet
- Working with Rowsets
- Handling Binary Data(Operation on Image files)
- Type mapping & SQL3 Daa types
- ParameterMetaData
- Transaction Management
- Connection Pooling
- JDBC 4.0 Features

#### **HTML, CSS & Java Script**

##### **Servlets**

- Web Application Architecture
- Need of Server side Programming
- Comparison with CGI
- Http Protocol &Http Methods
- Introduction to Servlets
- Servlet Life Cycle
- Developing and Deploying Servlets
- Generic Servlets
- ServletConfig, ServletContext, ServletRequest, ServletResponse
- Database Operation Using Servlets
- Deploying Servlets in Apache Tomcat Server, Weblogic Server etc
- Exploring Deployment Descriptor(web.xml)
- HttpServlets
- Session Tracking & Management

- Transferring Request
- Accessing Web Context
- Passing INIT and CONTEXT Parameter
- Filtering Request and Response
- Filter Servlets
- Servlet Chaining
- Include & Forward Mechanism
- Internationalization using Servlets
- Event Listeners in Servlets
- ServletRequestWrapper
- ServletResponseWrapper
- Web Application Security

##### **Reflection API**

##### **Java Beans**

- Component Model Services
- Java Beans Properties
- Bean Persistence
- Introspection

##### **Java Server Pages**

- Basic JSP Architecture
- Life Cycle of JSP (Translation, compilation)
- JSP Tags and Expressions
- Comparison with Servlets & JSP
- Scripting Elements - Scriptlets, Declarations, Expressions
- Directive Elements. page, include & taglib
- XML Syntax for JSP elements
- Implicit elements & JSP elements
- JSP to Servlets & Servlets to JSP
- Java Beans in JSP
- JSP Session
- Custom Tags development in JSP
- Building war file & deployment
- JSTL
- MVC Architecture
- Tomcat
- ANT
- Log 4J
- WAR Creation & Deployment
- Resign

## Adv. JAVA & J2EE

- Maven
- Design Patterns

### IDE

- Net Beans
- Eclipse

### J2EE

#### Distributed Applications

- Introduction to Distributed Applications
- RPC
- Java Distributed Technology
- RMI overview
- RMI Architecture
- RMI Examples
- Working with Registries
- Dynamic Stub Loading & Bootstrapping
- Passing Objects in RMI
- Distributed Garbage Collection
- Java Naming and Directory Interface
- RMI over IIOP

#### Enterprise JAVA Beans

- Enterprise Bean overview
- Types of enterprise beans
- Advantages of enterprise beans
- The Life Cycle of Enterprise Beans
- Working with Session Beans
- Stateful vs. Stateless Session Beans
- Working with Entity Beans
- BMP Vs. CMP
- EJB QL
- Transaction in EJB
- Relationships in EJB
- Message Driven Beans
- EJB 3.X
- Connection Pooling & Data Sources

#### Java Messaging Service [JMS]

- Overview of Message Oriented Middleware
  - JMS Architecture
  - JMS Messaging Domains PTP & Pub/Sub
- Messaging

## ISS Galaxy Technologies & Services

- Message Driven Beans
- JAAS

### XML

- Why XML?
- DTD
- XML & XSL
- XML Schema

### Webservices

- Interoperability
- Service Oriented Architecture
- SOAP, UDDI, WSDL
- SAX & DOM
- JAXP, JAXRPC, JAXB, JAXR, JAXM, SAAL, JAXWS
- Apache AXIS
- RESTful Web Services
- WSI basic Profile
- Design Patterns in Web Services

### Java Mail API

- Internet Mail Protocols
- Architecture of Java MailAPI
- Send and Receive Mail
- Working with Mail Attachments
- Reply, Forward and Delete Mails

### AJAX

- Synchronous & Asynchronous Communications
- AJAX Introduction
- AJAX based Web Application Architecture
- AJAX XMLHttpRequest
- MSXMLDOM
- AJAX Examples

### HIBERNATE

### STRUTS

### SPRING

### ANT, Maven, JUnit, Log4J