



Connecting Engineers and Developers with Practical Skills and the Latest Technologies

The Course at Glance

Course Contents

Core Java

- Java Architecture
- Data Types
- OOPS
- Interfaces
- Packages
- Exception Handling
- Threads
- Wrapper Classes
- File Handling
- GUI (AWT)
- Image & Animation
- Networking
- **Project Work**

Advance Java

JDBC - Java Database Connectivity

- Introduction
- JDBC Architecture
- JDBC driver's classification
- 4 types of driver architecture
- advantages & disadvantages
- example and context to use
- about Connection
- Using Statement
- Prepared Statement
- Callable Statement
- Result Set
- Database Metadata
- Result Set Metadata
- Batch Updates Using Statement & Prepared Statement.



Nurture
Technologies

New Features

- Scrollable Result Set
- Updatable Result Set
- Row Set
- Cursor's
- Using Array
- Using Struct
- Using Ref
- Creating new SQL User-Defined Types (UDT's)
- JDBC Connection pool.

JDBC 3.0 Features

- Save points
- Parameter Metadata
- New Data types and other changes.

Transactions

- ACID (Atomicity, Consistency, Isolation, Durability) properties
- JDBC Drivers Transactional Support
- Local Transactions
- examples on local transactions
- Distributed Transactions

- Flat Transactions
- Nested Transactions
- Isolation Levels
- Setting Isolation Levels.

Servlets

- Introduction
- Necessity of Server side programming
- CGI concepts & there problems
- Servlet API & Servlet Life Cycle
- Passing request parameters
- about Servlet Config
- Servlet Context
- Http Servlet
- Need of Http Servlet & there advantages
- Http Servlet Life Cycle
- Using get, post, Request Dispatcher, send Redirect
- about different scopes (Page, Request, Session, Application)
- Authentication
- Passing init-parameters to Servlet
- Internationalization

Session Tracking

- Purpose of session tracking
- URL Rewriting (concept & example)



- Hidden Form fields (concept & example)
- Cookies (concept & example)
- Http Session (concept & example).

Servlets 2.3 Features

- Filters
- Event Listeners (Session Listeners, Context Listeners) and Request & Response Wrappers.
- Configuring Servlets with Tomcat 5.x, BEA Web logic 7.0/8.1, IBM Web sphere 5.1 , JBOSS app servers.

JSP – Java Server Pages

- JSP Architecture
- need of JSP in n-tire application architectures
- JSP tags
- Scripting Elements (Declaration element, expression element and script let)
- Directive Elements (Page Directive, include and tag lib)
- Action Tags (include, forward, use Bean, get Property, set Property, plug in, param, params)
- Implicit objects (request, response, page, out, config, application, page Context, exception)
- Using XML syntax for JSP Pages
- Validating an XML view of a JSP Page.

Custom Tags

- writing JSP custom tags
- Tag Library Descriptor (TLD)
- declaring attributes in custom tags
- writing nested tags
- Iteration tags.

New JSP Features

- JSTL (JSP Standard Tag Library)
- Expression Language (EL)
- Simple Tag Extensions.

XML - Xtensible Markup Language

- Introduction
- Need of XML in application architectures
- DTD (Document Type Definition)
- XML Parsers – SAX (Simple API for XML)
- DOM (Document Object Model) using IBM's XML4J parser
- XML Schemas
- XML DB Utility (XML SQL Utility).



Java Beans

- Using bean API
- instantiating bean
- invoking methods in bean through bean API

RMI – Remote Method Invocation

- Distributed System Architecture
- Java Distributed Technology
- RMI Architecture, Dynamic / Bootstrap Clients
- Object Passing in RMI
- DGC
- Activation
- RMI-IIOP
- Leasing
- Transactions in RMI

- Security Policies

CORBA – Common Object Request Broker Architecture

- ORB (Object Request Broker)
- IDL (Interface Definition Language)
- IDL-Java mappings
- Naming Service.

➤ **Project Work**



J2EE – Java 2 Enterprise Edition

Introduction

- Introduction,
- J2EE Architecture,
- Comparison between J2EE & .NET,
- J2EE Application development roles

EJB - Enterprise Java Beans

- Introduction
- Comparison between different Distributed tech (EJB, CORBA, COM/DCOM)
- EJB Architecture
- EJB Container, Stateless Session Bean
- Stateful Session Bean
- Bean Managed Entity Bean
- Container Managed Entity Bean
- Bean Managed Security
- Container Managed Security
- Bean Managed Transactions
- Container Managed Transactions

- Clusters
- Using JDBC Connection Pool in EJB

EJB 2.0

- Local Enterprise Beans,
- CMP2.0 model – Container Managed Persistency,
- EJBQL – EJB Query Language,
- EJB Select Methods, Finder Methods with EJBQL,
- CMR - Container Managed Relationships,
- MDB – Message Driven Bean.

EJB 2.1

- Enhancements to EJB-QL,
- Timer Service,
- Web services Support to SLSB

JNDI - Java Naming & Directory Interface

- JNDI Architecture,
- Programming with JNDI,
- JNDI Security

JTS/JTA - Java Transaction Service/ Java Transaction API

- ACID (Atomicity, Consistency, Isolation, Durability) properties,
- When to use Transactions,
- Local Transactions,
- Distributed Transactions,
- Flat Transactions,
- Nested Transactions,
- Chained Transactions,

- Two-phase Commit Protocol

JAAS (Java Authentication and Authorization Service)

JMS 1.1 (Java Messaging Service)

XML (extensible Markup Language)

JAXP 1.2 (Java API for XML Processing)

Java Mail 1.3 & J2EE Design Patterns

Struts

