J2EE Training Syllabus

Java EE Introduction

- Java EE Overview
- Java EE Technologies
- Java EE Architecture
- MVC

Servlets and JSP with the JSP Standard Tag Library (JSTL)

- Web Application Basics
  - How the Web works, Thin Clients, TCP/IP
  - HTTP overview, Brief HTML review
  - Overview of Java EE, servlets & Web applications.
- Servlet Basics
- Servlet API
  - HTML Forms
  - HTTP: Request-response, headers, GET, POST
  - Overview: How Servlets Work
    - Servlet Lifecycle: init(), service(), destroy()
    - Requests and responses
  - Core Servlet API: GenericServlet, ServletRequest, and ServletResponse
  - HTTP Servlets: HttpServletRequest, HttpServletResponse and HttpServlet
  - Accessing Parameters
- Additional Servlet Capabilities
  - HTTP headers and MIME types
  - RequestDispatcher: Including and forwarding
  - Sharing data with the request object attributes
  - Sharing data with ServletContext attributes
  - Error Handling
- JavaServer Pages
  - Basics and Overview
    - JSP architecture
    - JSP tags and JSP expressions
    - Fixed Template Data
    - Lifecycle of a JSP
  - Model View Controller (MVC)
    - Model 1/Model 2 Architecture

*Syllabus prepared by experts*
- Data Sharing among servlets & JSP
  - Object scopes or “buckets”
  - Request, application, session and page scope
  - Predefined JSP implicit objects (request, session, application, page)
  - <jsp:useBean/>
  - <jsp:getProperty>, <jsp:setProperty>
  - <jsp:include>, <jsp:forward>

- Using Custom Tags
  - Custom tags overview
  - Reducing JSP complexity
  - Tag Libraries
    - Tag Library Descriptor (TLD)
    - Loading a tag library in a web app
  - The JSTL
  - JSP Expression Language (EL)
    - Using custom tags
      - The c:url, c:param, c:forEach, c:out tags

- More JSP Capabilities and Session Management
  - HTTP as a stateless protocol
  - Hidden form fields
  - Cookies: Overview, API, Using cookies
  - Session overview: Cookies and session tracking
  - HttpSession
    - Putting data into a session object
    - Retrieving data from a session object
  - Using session data in servlets and JSPs
  - Additional JSP Capabilities
    - Exception handling and error pages
    - Directives (page, include, others)
  - Import declarations
  - Multithreading considerations and data safety
    - SingleThreadModel interface

- Additional JSP Capabilities
  - JSP Directives
  - JSP Error Pages
  - JSP and Java
    - Declarations, Scriptlet overview, Scriptlet syntax

- More JSTL
  - Overview of JSTL libraries
  - The JSTL Expression Language
    - Expressions, Type Coercion, Operators, String concatenation, Implicit Objects
  - The Core JSTL Library
  - General Purpose: c:out, c:set, c:catch

*Syllabus prepared by experts*
• Conditional: c:if, c:choose,
• Overview of other capabilities
• Additional Topics
• Servlet Filter overview
• Filtering examples, lifecycle, & filter chains
• Filter API, Modifying a request, Modifying a response

JDBC

• Introduction
  • Relational Database and JDBC Overview
    • Overview, Table Relationships, Web Based Data Access, JDBC Characteristics
  • JDBC Architecture, JDBC API Overview
    • DriverManager, JDBC Drivers
    • Naming databases with JDBC URLs
  • Connecting to a database
    • Connection interface, Establishing a connection
  • DataBaseMetaData
  • Handling Database Exceptions

• Data Access
  • DAO – Data Access Objects, O-R Mapping, Value Objects
  • Processing Database Data
    • Executing statements, precompiled statements and stored procedures
    • Processing ResultSets,
    • Dealing with Null data
    • Updating, inserting, retrieving data
    • Controlling Transactions
  • JDBC Driver Types
  • DataSource
    • Java EE and DataSource, Using JNDI
  • Connection Pooling
    • Overview, Usage, Advantages