



# Information Booklet

**Course Name:**  
**Course in JSP**  
**Course Code: P5**



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## Course in JSP

### 1. Introduction:

This course teaches in detail the advanced components of the Java Programming Language.

### 2. Eligibility:

XII th & above

### 3. Duration:

80 Hours. Two and half hours each day

- Theory            20        hours
- Practical        60        hours

### 4. Course Details:

Type of course	Professional IT Course
Syllabus	<p><b>Programming Concepts</b></p> <ul style="list-style-type: none"> <li>○ Flowcharts</li> <li>○ Algorithms</li> <li>○ Data Flow Diagrams</li> <li>○ Software Life Cycle</li> </ul> <p><b>Introduction to Web Application Technologies</b></p> <p>Web Application Technologies</p> <ul style="list-style-type: none"> <li>HTTP Client-Server Architecture</li> <li>Web Site Structure</li> </ul> <p>Web Sites and Web Applications</p> <ul style="list-style-type: none"> <li>Execution of CGI Programs</li> <li>Advantages and Disadvantages of CGI Programs</li> <li>Execution of Java Servlets</li> <li>Advantages and Disadvantages of Java Servlets</li> <li>Using Separate Processes or Using Threads</li> </ul> <p>Java Servlets</p> <p>JavaServer</p> <p>Web Application — Three—Tier Architecture</p> <p>Model-View—Controller (MVC) Architecture in a Web Application</p> <ul style="list-style-type: none"> <li>Model 2 Architecture</li> <li>Model 2 Frameworks</li> <li>Java EE Containers</li> <li>Java EE Architecture Example</li> <li>Job Roles</li> <li>Web Application Migration</li> </ul> <p><b>Developing a View Component</b></p> <p>Designing a View Component</p>

	<ul style="list-style-type: none"><li>Types of View Components</li><li>Soccer League Case Study</li><li>List Leagues Analysis Model</li><li>List Leagues Page Flow</li><li>HTTP Revisited<ul style="list-style-type: none"><li>Hypertext Transfer Protocol</li><li>HTTP GET Method</li><li>HTTP Request</li><li>HTTP Request Headers</li><li>HTTP Response</li><li>HTTP Response Headers</li></ul></li><li>Web Container Architecture<ul style="list-style-type: none"><li>Request and Response Process</li><li>Sequence Diagram of an HTTP GET Request</li></ul></li><li>Developing a Simple HTTP Servlet<ul style="list-style-type: none"><li>List Leagues Architecture Model</li><li>The HttpServlet API</li><li>The ListLeaguesServlet Class</li></ul></li><li>Configuring and Deploying a Servlet<ul style="list-style-type: none"><li>Soccer League Web Application Structure</li><li>Configuring a Servlet Definition</li><li>Configuring a Servlet Mapping</li><li>Complete Deployment Descriptor</li><li>Web Application Context Root</li><li>Sun Java™ System Application Server Deployment</li><li>WAR Files for Deployment</li><li>Activating the Servlet in a Web Browser</li></ul></li><li><b>Developing a Controller Component</b></li><li>Designing Controller Components<ul style="list-style-type: none"><li>Types of Controller Components</li><li>Add a New League Analysis Model</li><li>Add a New League Page Flow</li><li>Form Verification</li><li>Soccer League Web Structure</li></ul></li><li>Creating an HTML Form<ul style="list-style-type: none"><li>Add a New League Web Form</li><li>The form Tag</li><li>Textfield Component</li><li>Drop-Down List Component</li><li>Submit Button</li><li>Complete HTML Form</li></ul></li><li>How Form Data Is Sent in an HTTP Request<ul style="list-style-type: none"><li>Form Data in the HTTP Request</li><li>HTTP GET Method Request</li><li>HTTP POST Method Request</li><li>HTTP GET and POST Methods</li></ul></li><li>Developing a Controller Servlet<ul style="list-style-type: none"><li>Add a New League Use Case Revisited</li><li>Servlet API to Retrieve Form Parameters</li><li>Developing the AddLeagueServlet Servlet</li></ul></li><li>Dispatching From the Controller to a View<ul style="list-style-type: none"><li>Add a New League Use Case</li><li>Request Scope</li></ul></li></ul>
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Using a Request Dispatcher  
Developing the AddLeagueservlet Code  
Developing the SuccessServlet Code

### **Developing Dynamic Forms**

Servlet Life Cycle Overview  
Servlet Class Loading  
One Instance Per Servlet Definition  
The init Life Cycle Method  
The service Life Cycle Method  
The destroy Life Cycle Method  
Using Initialization Parameter to Customize the Add a New League Form  
Handling Errors in a Web Form  
Repopulating Web Forms

### **Sharing Application Resources Using the Servlet Context**

Purpose of the Servlet Context  
Soccer League Demonstration  
Servlet Context  
Developing a Servlet Context Listener

### **Designing the Business Tier**

Describing the Analysis Model  
Domain Entities  
Designing a Service Component  
Entity Service  
Facade Service

### **Developing Web Applications Using Struts**

Struts Framework  
Model-View-Controller Pattern  
Front Controller Pattern  
Struts MVC Framework  
Developing a Struts Action Class  
Struts Action Class API  
Creating an Action Class  
Configuring the Struts Action Mappings  
Configuring the Infrastructure Controller  
Configuring Action Mappings  
Installing the Struts Library Files

### **Developing Web Applications Using Session Management**

HTTP and Session Management  
Designing Web Applications to Use Session Management  
Using Session Management in a Web Application  
Using Cookies for Session Management  
Using URL-Rewriting for Session Management

### **Using Filters in Web Applications**

Web Container Request Cycle  
Web Container Request Processing  
Applying Filters to an Incoming Request  
Applying Filters to a Dispatched Request  
Filter API

**Developing a Filter Class**

- The PerformanceFilter: Class
- The init Method
- The doFilter Method
- The destroy Method

**Configuring the Filter**

- Declaring a Filter in the web .xml File
- Declaring a Filter Mapping in the web .xml File

**Integrating Web Applications With Databases**

- Mapping Sample Data Structures into Database Entities

**Designing a Web Application**

- Domain Objects
- Database Tables
- Data Access Object (DAO) Pattern
- DAO Pattern Advantages
- JDBC™ API

**Developing a Web Application Using a Database**

- Traditional Approaches to Database Connections
- Using a DataSource and the JNDI API
- Configuring a DataSource and the JNDI API

**Developing JSP Pages****JavaServer Pages Technology**

- How a JSP Page Is Processed
- Developing and Deploying JSP Pages

**Writing JSP Scripting Elements**

- Comments
- Directive Tag
- Declaration Tag
- Scriptlet Tag
- Expression Tag
- Implicit Variables

**Using the page Directive****Using Standard Tags****Using Expression Language (EL) Elements****Configuring the JSP Environment****Developing JSP Pages Using Custom Tags**

- The Java EE Job Roles Involved in Web Application Development

**Designing JSP Pages with Custom Tag Libraries**

- Contrasting Custom Tags and Scriptlet Code
- Developing JSP Pages Using Custom Tags
- Custom Tag Library Overview
- Custom Tag Syntax Rules
- JSTL Sample Tags

**Using a Custom Tag Library in JSP Pages**

- Using an Empty Custom Tag
- Using a Conditional Custom Tag
- Using an Iterative Custom Tag
- JSTL Tags

**Developing Web Applications Using Struts Action Forms**

- Struts Application Components

Model Elements Review  
Control Elements Review  
View Elements Review  
Developing an ActionForm Class  
    The Add a New League Form  
    The AddLeagueForm Class  
    Data Conversion  
    Writing the validate Method  
    Struts ActionError Class  
    How the Controller Uses the Form Bean  
Developing the JSP Code for a View Form  
Configuring the View Forms  
    Configuring the Form Beans  
    Configuring the View Aspects of the Actions

### **Building Reusable Web Presentation Components**

Complex Page Layouts  
    Presentation Segment Overview  
    Organizing Presentation Segments  
Including JSP Page Segments  
    Using the include Directive  
    Using the jsp : include Standard Action  
    Using the jsp : param Standard Action  
Developing Layouts Using Struts Tiles  
    Layout JSP File  
    Tiles Layout  
    Content Body

### **Introducing JavaServer™ Faces Technology**

Introducing JavaServer Faces Technology  
Components of a JavaServer Faces Technology-Based Web Application  
Comparison of JavaServer Faces Technology With Struts Framework  
Key JavaServer Faces Concepts  
UI Component Model  
UI Component Classes

### **Quick Reference for HTML**

HTML and Markup Languages  
    Creating an HTML Document  
    Tag Syntax  
    Comments  
    Spaces, Tabs, and New Lines Within Text  
    Character and Entity References  
Creating Links and Media Tags  
    The A Element and the HREF Attribute  
    The IMG Element and the SRC Attribute  
    The APPLET Element  
    The OBJECT Element  
Text Structure and Highlighting  
HTML Forms  
The FORM Tag  
    HTML Form Components  
    Input Tags

Text Fields  
Submit Buttons  
Reset Button  
Checkboxes  
Radio Buttons  
Password  
Hidden Fields  
The SELECT Tag  
The TEXTAREA Tag  
Creating HTML Tables  
Advanced HTML  
JavaScript™ Programming Language  
CSS  
Frames

**Quick Reference for HTTP**

HTTP Overview  
Request Structure  
    HTTP Methods  
    Request Headers  
Response Structure  
    Response Headers  
    Status Codes  
CGI Overview  
    Environment Variables Set  
    Data Formatting

**Quick Reference for the Sun Java System Application Server**

Sun Java System Application Server Overview  
Installing the Sun Java System Application Server  
Starting and Stopping the Application Server  
Application Configuration  
Logging and Log Files

**Quick Reference for the Ant Tool**

Ant Overview  
Build File Structure  
    Projects  
    Targets  
    Tasks  
    Properties  
Ant Special Features  
    Patterns  
    The fileset Element  
    Filtering  
    The filter Task  
Basic Built-in Ant Tasks  
    The copy Task  
    The delete Task  
    The mkdir Task  
    The echo Task  
    The javac Task  
    The javadoc Task  
    The jar Task

	<p>Complete Ant Build File Executing Ant Installing Ant</p> <p><b>Quick Reference for UML</b> UML Fundamentals General Elements     Packages     Stereotypes     Annotation     Constraints     Tagged Values Use Case Diagrams Class Diagrams     Class Nodes     Inheritance     Interface Implementation     Association, Roles, and Multiplicity     Aggregation and Composition     Association Classes     Other Association Elements Object Diagrams Collaboration Diagrams Sequence Diagrams Statechart Diagrams Transitions Activity Diagrams Component Diagrams Deployment Diagrams</p> <p><b>Quick Reference for XML</b> Introduction to XML Basic Syntax     Well-Formed XML Documents     Validity and DTDs     DTD-specific Information Schemas</p> <p><b>Project Work</b></p>
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**5. Fee:**

Rs. 4000/- (exclusive of all taxes)