



## Core Java Course Modules

### Getting start with Java

- Understanding scope and purpose of java
- Why java
- What is platform independence
- Understanding oops concepts
- Java Virtual Machine(JVM)
- Java Runtime Environment(JRE)

### Java Basics

- Java keywords
- Operators
- Control and conditional statements
- Looping control Statements

### Constructors

- Default constructor
- Parameterized constructor
- Constructor overloading

### Inheritance

### Interfaces

### Abstract classes and methods

### Packages

### I/O streams

### Exception handling

- Try
- Catch
- Finally
- Throw
- Throws

### Threading

- Thread class
- Runnable interface
- Multi threading concept using synchronization



## **Collections**

- List
- ArrayList
- Set
- Map

## **Advanced Java (J2EE)**

### **JDBC**

- Introduction to JDBC
- Types of drivers and its pros and cons
- Statement Example
- PreparedStatement Example
- ResultSet Example
- CallableStatement Example

### **Servlets**

- Introduction to Servlets
- Life cycle of servlets
- Tomcat Server introduction
- Servlet Methods
- Request
- Response
- Understanding directory structure of servlets
- Reading values from web.xml
- Redirect
- Forward
- Cookie
- Session
- Database connectivity from servlets

### **JSP (Java Server Pages)**

- Introduction to JSP
- Life cycle of jsp
- Understanding implicit objects in jsp
- Declarative
- Scriplet
- Expression
- Page Directive
- Database communication
- Understanding JSTL



## JAVA / J2EE TRAINING COURSE MODULES

### **JAVA ENTERPRISE EDITION**

#### **Java Web Development Boot Camp**

Learn the fundamentals of Java, HTML, and JSP development required to build Java Web Applications.

- Introduction to Java for Procedural Programmers
- Introduction to HTML
- Introduction to CSS
- Introduction to JSP
- Advanced JSP Development using JSTL

#### **Java EE Boot Camp**

Learn the key components of Java EE required to build an enterprise-class Java applications.

**The Java EE Boot Camp covers many of the topics found in the following courses:**

- Introduction to JSP
- Introduction to JSF
- Introduction to EJB 3
- Introduction to JPA

#### **J2EE for Managers**

Learn how Java EE (Java Enterprise Edition) can be used to build business applications via our Software Development Manager training

#### **Java Web Development Workshop**

Migrate legacy developers to Java web developers in a practical, coached setting

- Introduction to HTML
- Introduction to CSS
- Introduction to JavaScript
- Introduction to Java for Procedural Programmers
- Introduction to JSP
- Effective Web Application Development with Java

#### **Introduction to JSP**

Learn how to create basic web applications using HTML, CSS, and JSP

**In the Introduction to JSP training course you'll learn:**

- What is Java EE?
- Examination of web development roles and processes
- Review of web development concepts: HTML/XHTML, CSS, and JavaScript
- History and Evolution of to server-side (back-end) development
- Hello World JSP



## JAVA / J2EE TRAINING COURSE MODULES

- Core JSP Syyntax: Expressions, Scriptlets, XML-syntax, Standard Actions, etc.
- JSP request / response processing using implicit variables
- Retrieving, validating, transforming, encapsulating, and manipulating request data with JavaBeans
- Managing application and user state data with Sessions and Cookies
- Processing application and HTTP-level errors
- Creating a database driven website using JDBC

### **Advanced JSP Development using JSTL**

Learn how to build a complex enterprise-class web application with JSP, JSTL, and Custom Tag Libraries

#### **In the Advanced JSP Development using JSTL training course you'll learn:**

- Review of JSP concepts and syntax
- Web application design principles and patterns like: MVC (Model-View-Controller), Front Controller, Business Delegate, etc.
- Web application and resource configuration using web.xml and properties files
- Creating a secure web site using user authentication and authorization and SSL / HTTPS
- Role-based provisioning of interactions and content within a web application
- Managing application and session lifecycles through events
- Simplified view development using JSTL and the unified expression language (EL)
- Internationalizing a website using JSTL
- Reusable component development with custom tag libraries
- Testing and validating a web application for deployment
- Packaging a web application for production deployment

### **Java Servlet Programming**

Learn how to extend web server capabilities using Servlets and Filters

#### **In the Java Servlet Programming training course you'll learn:**

- Review of Java EE Web Application Development concepts
- Web application design principles and patterns like: MVC (Model-View-Controller), Front Controller, Business Delegate, etc.
- Web application and resource configuration using web.xml and properties files
- Choosing the correct Controller implementation strategy: Servlet, GenericServlet, HttpServlet, or Filter
- Creating a Front-Controller using a GenericServlet
- Creating a Front-Controller using an HttpServlet



## JAVA / J2EE TRAINING COURSE MODULES

- Working with and enhancing the servlet lifecycle
- Filtering request with Filters and FilterChains
- Configuring a FilterChain and Servlet Mappings
- Working with Asynchronous Servlets
- Making a Servlet function as a web service endpoint
- Testing and validating a web application for deployment
- Packaging a web application for production deployment

### **Introduction to JSF**

Learn how to build component architecture based websites with JSF.

#### **In the Introduction to JSF training course you'll learn:**

- What is Java EE?
- Examination of web development roles and processes
- Review of web development concepts: HTML/XHTML, CSS, and JavaScript
- What is JSF?
- Hello World JSF
- Core JSF Concepts: JSF components, JSF tags, Unified Expression Language, JSF Managed Beans, and FacesServlet
- JSF Lifecycle: JSF request processing, JSF response processing, event and validation
- Retrieving, validating, transforming application data with JSF Converters and Validators
- Interacting with the JSF event lifecycle
- Processing application and HTTP-level errors
- Packaging and configuring a JSF application

### **Advanced JSF**

Learn how to build reusable custom JSF components

#### **In the Advanced JSF training course you'll learn:**

- Review of core JSF components: JSF tags, EL, JSF Managed Beans, FacesServlet, Events, etc.
- What are custom JSF components?
- How do I build a custom JSF components?
- Working with Custom Components
- Developing Custom Components
- Building Component Composites (components containing components)
- JSF and AJAX: Building Rich user interfaces
- Packaging and configuring a JSF application



## JAVA / J2EE TRAINING COURSE MODULES

### **Using AJAX with JSF**

Learn how to build Web 2.0 applications using JSF and Ajax (JSF and Asynchronous JavaScript and XML) via our JSF training

#### **In the Using AJAX with JSF training course you'll learn:**

- Review of core JSF components: JSF Pages, EL, Managed Beans, FacesServlet, Events, etc.
- What are custom JSF components?
- How do JSF and Ajax fit together?
- Examination of common JSF component libraries: Sun RI, Apache MyFaces, Oracle ADF, Facelets
- Examination of common Ajax Libraries: DoJo, Prototype, script.aculo.us, Rico, etc.
- Integrating JSF and AJAX: Out of the box solutions
- Integrating JSF and AJAX: Custom integration solutions
- Understanding Ajax interactions with the JSF event lifecycle
- Developing, testing, and packaging JSF applications
- Packaging and configuring a JSF application

### **Introduction to JPA**

Learn how to build Java EE and Java SE database driven applications using the Java Persistence Architecture (JPA)

#### **In the Introduction to JPA training course you'll learn:**

- Designing Database Driven Applications
- Review of database design concepts and terminologies
- Introduction to Java Persistence Architecture
- Choosing a JPA provider
- Using JPA in Java SE
- Using an ORM (object-relation-mapping) framework over JDBC
- Key concepts in JPA: Entity, EntityManager, Persistence Unit, Persistence Context, etc.
- Creating a basic JPA solution
- Using JPA with complex schemas: Modelling associations, Dealing with Inheritance, Embedded and composite keys, etc.
- Database Queries using JPA Query Language (JPA QL)
- Performing and managing transactions
- Database locking
- Advanced JPA concepts: using collections, optimizing database access, batch processing, etc.



## JAVA / J2EE TRAINING COURSE MODULES

- Using JPA in a Java EE container

### **Advanced JPA Programming**

Learn the knowledge and skills required for developers to use JPA to its fullest

### **Introduction to EJB 3**

Learn how to build enterprise application using Enterprise Java Beans

#### **In the Introduction to EJB 3 training course you'll learn:**

- What is Java EE?
- What are Enterprise Java Beans?
- Extending the end-user into the Enterprise Java Beans
- Implementing Stateless and Stateful Session Beans
- Advanced Session Bean concepts (lifecycle call backs, contexts, etc.) and Design Patterns
- Developing EJB applications with Message Driven Beans
- Converting EJBs into web service endpoints
- Implementing Entity Beans using Java Persistence Architecture
- EJB Transactions and Security
- Working with the Timing Service
- Packaging and Deploying EJB applications

### **JMS Training**

Learn how to use the Java Messaging Systems and Message Driven Beans to build workflows

#### **In the JMS Training training course you'll learn:**

- What is Java EE?
- What is JMS?
- Key messaging concepts: Message, Message Producer, Message Consumer, Message Bus, Topic, Queue
- Writing a JMS producer as a stand-alone Java application
- Writing a JMS consumer as a Message Driven Bean
- Using Stateless Session Beans a JMS producer
- Using Message Driven Beans as a web service endpoint
- Writing a JMS producer and consumer as a Message Driven Bean
- Asynchronous processing design strategies
- Packaging and deploying a JMS application



### **XML Programming with Java**

Learn how to create Java applications that read, manipulate, and write XML.

**In the XML Programming with Java training course we'll cover the following topics:**

- Java API for XML Processing (JAXP)
- Simple API for XML Processing
- The Document Object Model (DOM)
- Manipulating XML using DOM
- Using JAXP for XML / XSL Transformations
- Working with XPath
- Creating and using Templates
- The Java API for XML Binding (JAXB)

### **Developing Java Web Services**

Learn how to create web-service enabled applications using Java

**In the Developing Java Web Services training course you'll learn:**

- History, Motivations, and Overview of Web Services
- Understanding key web services components: XML, XSL, HTTP, WSDL, SOAP
- The Java Web Services Landscape
- Building web services with Java EE
- Working with JAXB
- Using Java API for XML-based Web Services
- Web Services Design Strategies: Contract First v. Contract Last
- Java Web Services best practices
- Other ways to build JWS: Apache Axis, Servlets, Spring
- Heterogenous web service development: making JWS work with .NET and PHP

### **Securing Java Web Services**

Learn how to secure Java-based web services.

**In the Securing Java Web Services training course you'll learn:**

- The challenges, pitfalls, and best-practices required to secure XML-based services
- How to apply W3C standards to digitally sign and encrypt XML fragments and documents
- The importance of the WS-Security specification and how it applies to your solution
- How to use emerging Java APIs to configure, implement, encrypt various WS-Security header content
- Exchange security information between servers, applications, and components



### **Developing Web Services with Java EE 6**

Learn how to build web services using the Java EE 6 platform

#### **In the Developing Web Services with Java EE 6 training course you'll learn:**

- What are Web Services?
- Types of Web Services – SOAP v. REST
- Key components and technologies for Web Services
- WS-I Basic Profile
- Building Web Services using Java EE 6
- Working with JAX-WS and JAXB
- Using JAX-RS for RESTful services
- Other Java XML and Web Services APIs

### **Developing RESTful Web Services in Java**

Learn how to build RESTful web services using Java.

#### **In the Developing RESTful Web Services in Java training course you'll learn:**

- Review of Web Service concepts
- Review of key web services components, such as: HTTP, XML, SOAP, WSDL, UDDI and WS-I Basic Profile
- Introduction to RESTful services and comparison to other web service architectural approaches
- Working with Web Services in a Java EE environment
- Key Java EE Web Service related APIs, such as: JAX-WS, JAXB, SAAJ, JAXP, and JAX-RS
- Using JAXB for Schema and DTD based bindings
- Dispatching Requests to Methods
- Working with Entities and complex content
- Using Contexts and Lifecycles effectively

**Effective Web Application Development with Java** Learn the software architecture principles, web application development best practices, and common design patterns used to structure and build web applications for extensibility and scalability

### **J2EE Design Patterns**

Learn the best-practices, principles, and patterns used to design scalable and extensible Java EE applications

#### **In the J2EE Design Patterns training course you'll learn:**

- History, Motivations, and Overview of Design Pattern Principles
- Understanding how and where design patterns fit into Java Enterprise Edition



## JAVA / J2EE TRAINING COURSE MODULES

- Presentation-tier design patterns: Intercepting Filter, Front Controller, Application Controller, Composite View, View Helper, Dispatcher View, Service to Worker
- Business-tier design patterns: Application Service, Business Delegate, Service Locator, Session \* Facade, Transfer Object, Business Object, Value List Handler, Composite Entity, Transfer Object Assembler
- Integration-tier design patterns: Service Activator, Domain Store, Web Service Broker, Data Access Object
- Applicability of design patterns in Java EE 5 and Java EE 6
- Java EE Case-study: refactoring into Java EE patterns (included as part of workshop)

### **Secure Coding in Java EE**

Learn how to build secure and robust Java web-based and EJB applications

### **Effective Java EE Development**

Learn how to architect and design enterprise-class Java EE applications.

**The Effective Java EE Development covers the following courses:**

- Effective Web Application Development with Java
- Advanced JPA Programming
- J2EE Design Patterns