

Java J2EE Course Content:35-40hours

Course Outline

Java

- Introduction to Java Declarations and access control
- Declaring classes, methods, instance variables, static variables
- Constructors
- Flow control and exception handling
 - Loops/If-then-else/Switch
 - Try-catch
 - Assertions
- Abstract classes/ Interfaces/Packages/Inheritance
- Overloading, Overriding and runtime behavior
- Object casting (assignments)
- Garbage Collection
- Threads
- Collections

Servlets

- Servlet technology overview (cgi, Servlets)
- Servlet Life cycle
- Single thread model (vs) Multi thread servlet model
- Servlet chaining, RequestDispatcher
- Deployment of web applications
- Session management

JSP

- JSP technology overview (MVC overview)
- Building jsp's with scriptlets
- Static (vs) dynamic includes, includes (vs) forwards
- Java beans overview
- Scopes overview

JDBC

- JDBC overview

- Createstatement/Preparestatements/Resultsets overview
- Callable statements
- Connection Pooling
- Building a sample web application with backend database.

Design Patterns

- Singleton
- Facade
- Factory
- DAO
- Observer
- Proxy
- Adapter
- Value objects

XML

- Overview of XML
- Xerces Parser
- SAX and DOM API
- XML document parsing, generation
- **Struts**
- Overview of Struts framework components
- Using Struts HTML Tag libraries
- Using Forms - Submission, Navigation and Pre-population
- Actions Overview - Using Built-in Struts Actions
- Using Html, Bean Tags
- Validation with Commons Validator
- Using Tiles with Struts

Web Services

- Web services overview
- SOAP
- Creating Web Services
- Describing Web Services with WSDL
- Building synchronous Web Services (JAX-RPC Service architecture)
- Accessing services with JAX-RPC
- Asynchronous Web Services operations
- Querying service registries

Hibernate

- Hibernate Architecture
- Overview of Hibernate Configuration files and mapping files
- Hibernate Key Interfaces

- HQL
- Mapping relationships
- Mapping inheritance and polymorphism
- Hibernate (vs) JDBC

Spring MVC

- Spring MVC Overview
- Dispatcher Servlet overview
- Controllers overview
- View Resolvers
- Spring Hibernate/JDBC Templates
- Spring DAO Exception Hierarchy
- Building a sample Spring MVC application

Ajax

- Ajax Basics
- Hidden Frames
- Ajax Patterns
- Handling XMLHttpRequest events
- Synchronous and Asynchronous requests
- XML DOM via Javascript

Enterprise Java Beans

- What are Enterprise Java Beans
- Should you use EJBs?
- The EJB Architecture
- Types of Beans
- Session Beans
- EJB Transaction Management
- Creating EJBs
- Compiling and Deploying
- Developing Clients
- Bean or Container Managed Persistence