

1. Advanced JSP - 3 hours

* Topics

- o JSP 2.0 Custom Tags (1 hour lecture + 1 hour lab)
- o Tiles (1 hour lecture + 1 hour lab)) - day 1

2. Struts 2 - 3 hours

* Topics

- o Struts 2 (1 hour lecture + 1 hour lab)) - day 1
 - + Overview
 - + Configuration
 - + Validation
 - + Type conversion
 - + Interceptors
 - + Actions
 - + Results
 - + Ajax

3. Ajax - 3 hours

* Abstract

o The Web is going through the second wave of its evolution and some people call it Web 2.0. Whether Web 2.0 is considered a hype or not, there are indeed a set of concrete technologies such as AJAX (Asynchronous JavaScript + XML) that make the Web of today a lot more interactive, responsive, exciting and useful than it used to be. This seminar starts with a brief lecture and a hands-on lab in which the basic concept of AJAX and the core technologies - JavaScript, CSS, DOM, and XMLHttpRequest - that make up the AJAX are discussed and exercised. The workflow of AJAX operation is also discussed in detail using an example code. In production environment, it is likely that you would use one or combination of various AJAX toolkits and frameworks. The majority part of the seminar is dedicated to discussing and learning key frameworks and toolkits that are available today for building AJAX applications. These include Dojo Toolkit, Direct Web Remoting, Google Web Toolkit, and jMaki. Every topic has a corresponding hands-on lab.

* Topics

- o Ajax Basics and development tools (0.5 hour lecture + 0.5 hour lab) - day 2
 - + Rich Internet Application (RIA) technologies
 - + Ajax real-life examples and usage cases
 - + What is and Why Ajax?
 - + Technologies used in Ajax
 - + Anatomy of Ajax operation
 - + XMLHttpRequest methods and properties
 - + DOM APIs and InnerHTML
 - + Ajax security
 - + Debugging tools
- o Dojo Toolkit (1.5 hour lecture + 1.5 hour lab) - day 2
 - + What is and Why Dojo toolkit?
 - + Dojo toolkit package system
 - + Remoting via dojo.io.bind

- + Backward/forward buttons
- + Dojo event system
- + Widgets
- o Direct Web Remoting (1 hour lecture + 1 hour lab) - day 2
 - + What is and Why DWR?
 - + Steps for building DWR-based Ajax application
 - + Callback functions
 - + Utility functions
 - + Engine functions
 - + Error handling
 - + Security
 - + DWR and Web application frameworks
- o Google Web Toolkit (1 hour lecture + 1 hour lab) - day 2
 - + What is and Why GWT?
 - + GWT Widgets
 - + Event handling
 - + Styling
 - + Remote Procedure Call (RPC)
- o jMaki (0.5 hour lecture + 0.5 hour lab) - day1
 - + What is and Why jMaki?
 - + jMaki widgets
 - + Event model

4. Hibernate - 1 day

1. Abstract

* Hibernate is one of the most popular O/R frameworks. In this seminar, attendees build a simple application that performs persistence operations through Hibernate. They are then exposed to the basic concept and architecture of the Hibernate framework such as DAO design pattern. The mapping techniques for domain model objects which are related through cardinality or inheritance are then explored. The query capabilities of the Hibernate, Criteria API and HQL, are also discussed. Caching technologies are then explained. Finally, how Spring framework and Hibernate are used together is explained. Every topic has a corresponding hands-on lab.

2. Topics

- * Hibernate Step by Step (0.5 hour lecture + 0.5 hour lab) - day 2
 - o Creating POJO class
 - o Creating mapping files
 - o Creating Hibernate configuration file
- * Hibernate Basics (0.5 hour lecture + 0.5 hour lab) - day 2
 - o Why use O/R mapper?
 - o Hibernate architecture
 - o Instance states
 - o Persistence life-cycle operations
 - o DAO
 - o Transaction
- * Hibernate Mapping (0.5 hour lecture + 0.5 hour lab) - day 2
 - o Mapping cardinality relationships
 - o Mapping inheritance relationships
- * Hibernate Query Language (0.5 hour lecture + 0.5 hour lab) - day 2

- o Criteria API
- o Hibernate Query Language (HQL)
- o Native SQL Query
- * Hibernate Caching (0.5 hour lecture _ 0.5 hour lab) - day 2
 - o What is Caching?
 - o Caching implementations
 - o Caching strategies
- * Spring framework and Hibernate (0.5 hour lecture + 0.5 hour lab) - day 2
- * Spring Sample applications - Pet Clinic (0.5 hour lecture + 0.5 hour lab) - day 2

5. Spring framework - 1 day

* Spring framework basics

- * Refactoring HelloWorld application using Spring framework (0.5 hour lecture + 0.5 hour lab)
- * Spring framework Dependency Injection Basics (0.5 hour lecture + 0.5 hour lab)
- * Spring framework Dependency Injection Advanced (0.5 hour lecture + 0.5 hour lab)

* Spring framework and persistence

- * Spring framework and Hibernate (1 hour lecture + 1 hour lab) homework)

* Spring framework Web-tier technologies

- * Spring MVC (1 hour lecture + 1 hour lab)
- * Spring Web Flow (0.5 hour lecture + 0.5 hour lab)

* Spring AOP

- * Spring AOP Basics (0.5 hour lecture + 0.5 hour lab)