



Suite T113 – T114, 3rd Floor, Centrepoint, Lebuh Bandar Utama Bandar Utama, 47800 Petaling Jaya, Selangor Darul Ehsan

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Course Outline :: Spring-MVC Web Applications::

Module Title : Spring-MVC Web Applications

Duration: 5 days

Outline

1. Overview of Spring

A. Java EE: The Good, The Bad, and the Ugly

- B. Enter the Framework
- C. Spring Value Proposition
- D. The Spring Container
- E. Web Applications
- F. Persistence Support
- G. Aspect-Oriented Programming
- H. The Java EE Module(s)

2. The Container

- . JavaBeans, Reconsidered
- A. The Factory Pattern
- B. Inversion of Control
- C. XML View: Declaring Beans
- D. Java View: Using Beans
- E. Singletons and Prototypes

3. Instantiation and Configuration

- . Configuring Through Properties
- A. Configuration Namespaces
- B. The p: Notation
- C. Bean (Configuration) Inheritance
- D. Configuring Through Constructors
- E. Bean Post-Processors
- F. Lifecycle Hooks
- G. Integrating Existing Factory Code
- H. Awareness Interfaces

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4. Dependency Injection

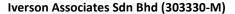
- . Assembling Object Graphs
- A. Dependency Injection
- B. Single and Multiple Relationships
- C. The Utility Schema
- D. Using Spring Expression Language (SpEL)
- E. Inner Beans
- F. Autowiring
- G. @Component, @Service, & Company
- H. @Autowired Properties
- I. Best Practices with Spring Annotations
- J. Java Classes as @Configurations
- K. AnnotationConfigApplicationContext
- L. Capabilities and Limitations
- M. Mixing and Importing XML and Java Configurations

5. Assembling Object Models

- . Collections and Maps
- A. Support for Generics
- B. The Spring Utility Schema (util:)
- C. Autowiring to Multiple Beans
- D. Order of Instantiation
- E. Bean Factory vs. Application Context

6. The Web Module

- . Servlets and JSPs: What's Missing
- A. The MVC Pattern
- B. The Front Controller Pattern
- C. DispatcherServlet
- D. A Request/Response Cycle
- E. The Strategy Pattern
- F. Web Application Contexts
- G. Annotation-Based Handler Mappings
- H. @Controller and @RequestMapping





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1	"Creating" a Model
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J. Views and View Resolvers

7. Handling Requests

- . Matching URLs
- A. Identifying Views
- B. Request Parameters
- C. Injectable Parameters
- D. Command Objects
- E. Return Types
- F. HTTP Methods
- G. Path Variables
- H. Scope and Granularity of Command Objects
- I. Headers and Cookies
- J. RESTful Web Services

8. Working with Forms

- . Form Processing in Spring MVC
- A. Command Objects in Request Methods
- B. Spring Custom Tags
- C. <form:form> and Friends
- D. Text Fields, Check Boxes, and Buttons
- E. Radio Buttons and Select/Option Lists
- F. Command objects at Session Scope
- G. Limitations of @SessionAttributes

9. Data Binding

- . A Consolidated Process
- A. Property Editors
- B. DataBinder and @InitBinder Methods
- C. Converters and Formatters
- D. Using <mvc:annotation-driven/>
- E. Custom Formatters

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10. Validation

- . Validating Form Input
- A. Spring Validators
- B. Deriving a Validator Reference
- C. Applying a Validator
- D. <form:errors>
- E. Bean Validation, a/k/a JSR-303
- F. Configuring Bean-Validation Support
- G. Automatic Support with @Valid

11. Configuring Spring MVC

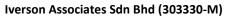
- . Configuring Message Sources
- A. Resolving Error Codes
- B. Codes for Bean Validation
- C. HandlerExceptionResolver
- D. @ExceptionHandler
- E. @ControllerAdvice for Global Error Handling

12. Interceptors

- . Interceptors
- A. Configuring Interceptors
- B. Filters in the Request-Handling Cycle

13. Persistence with JDBC

- . Reducing Code Complexity
- A. The DataAccessException Hierarchy
- B. JdbcTemplate
- C. RowMapper<T> and ResultSetExtractor<T>
- D. The DaoSupport Hierarchy
- E. Capturing Generated Keys
- F. Transaction Control
- G. TransactionTemplate
- H. Isolation Levels
- I. Transaction Propagation





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14. Persistence with JPA

- . Object/Relational Mapping
- A. The Java Persistence API
- B. JpaDaoSupport and JpaTemplate
- C. @PersistenceUnit and @PersistenceContext
- D. Shared Entity Managers
- E. Using <tx:annotation-driven>
- F. The @Transaction Annotation
- G. Isolation and Propagation
- H. A Limitation of @Transactional
- I. Understanding Entity States
- J. Bean Validation in JPA
- K. Optimistic Locking