

# Java Frameworks

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**Duration: 40-45 Hours**

**Prerequisites**

- Knowledge of Core & Adv Java Programming

**Course Contents**

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**1. Hibernate 4.X**

- Overview Of Hibernate
- Hibernate Environment Setup
- Object Relational Mapping (ORM)
- Features Of Hibernate
- Overview Of Hibernate Architecture
- Understanding Different Components Of Hibernate
- Create Persistent Java Objects
- Mapping POJO With Persistence Layer Using
- Hibernate Mapping Document
- Hibernate Configuration File
- Hibernate Mapping Elements
- Class Element, Id Element
- Generator Element
- Property Element
- Hibernate Object States
- Modifying Persistent Objects
- Modifying Detached Objects
- Deleting Persistent Objects
- Loading an Object
- Automatic State Detection
- Flushing The Session
- Collection and Component Mapping
- Inheritance Mapping Strategies
- Table Per Concrete Class
- Table Per Subclass
- Table Per Hierarchy
- Hibernate Mapping Associations
- Many-To-One
- Bidirectional Many-To-One
- One-To-One
- Bidirectional One-To-One
- Many-To-Many
- Bidirectional Many-To-Many
- Querying With HQL
- Named and Native Queries
- Working With Criteria Interface
- Query By Example – QBE
- Projections, Aggregation And Grouping
- Narrowing the Result Set
- Ordering the Results
- Hibernate Filters and Caching
- Hibernate In Web Application

**2. Spring 3.X**

- Introduction To Spring Framework
  - Spring - Environment Setup
  - Steps To Use Spring Framework In Applications
  - Understanding IOC And Dependency Injection
  - Understanding The Bean Life-Cycle – Auto Wiring And Bean Scopes
  - Annotation-Based Dependency Injection
  - Adding Behavior To An Application Using Aspects – AOP
  - Creating And Applying Aspects
  - Introducing Data Access With Spring – JDBC Through Spring
  - Transactions Management In Spring.
  - Hibernate With Spring
  - Working With Spring MVC
  - Spring MVC Form Handling
  - Creating Views In Spring MVC
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### 3. **Struts 2.X**

- Introduction to MVC Architecture
  - Struts2 Architecture
  - Struts2 Components
  - Controller & Actions
  - Interceptors
  - Result and View Components
  - Value stack And OGNL
  - Struts Tag Library
  - Control Tags, Data Tags, UI Tags
  - Understanding Actioncontext and Action Invocation
  - Implementing Custom Interceptors
  - Implementing Custom Result
  - Use of Common Predefined Interceptors
  - Params
  - Exception
  - I18N
  - Exec and wait
  - ServletConfig
  - Validation
  - Workflow
  - Modeldriven
  - Custom & Predefined Validations
  - Validatable&Validationaware
  - Required
  - Requiredstring
  - Int, Double & Date
  - Email
  - Stringlength
  - Regex
  - Internationalization
  - Generating Composite Views Using Tiles
  - Tiles Configuration
  - Tiles Tag Library
  - Tiles Result
  - Tiles Layout
  - Using Zero Configuration Plug In
  - Struts2 Conventions
  - Annotation Based Configuration
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