

Mastering Hibernate 3.6 for Persistence in Java Course Summary

Description

Hibernate is a powerful enabler that addresses object/relational persistence in the Java world. Hibernate offers all the advantages of developing in Java plus a comprehensive suite of capabilities for mapping object-oriented features to the relational model. This course tells you what you need to know to design and build your own Hibernate-enabled applications. You'll learn the details of the key Hibernate capabilities and how to leverage their strengths, with a special focus on using Hibernate with other technologies and frameworks. At the same time, you'll be learning about the big picture of Hibernate and how to design applications to use Hibernate in a robust, efficient, secure, and maintainable fashion. If you want to deliver an application using Hibernate, you'll find this course essential.

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Objectives

At the end of this course, students will be able to:

- Explain how the issues associated with object persistence in a relational model are addressed by Hibernate
- Understand the relationships between SQL, Java, JDBC, Spring, Java Persistence API, EJB 3.0, and Hibernate
- Discuss the challenges to adopting Hibernate in the enterprise
- Write applications that take advantage of the Hibernate Persistence Manager.
- Map Java classes to relational tables.
- Capture both relational and inheritance associations in metadata using either XML or the Java 5 Annotations mechanism.
- Create and use mappings between Java classes and relational databases.
- Understand how identity and keys are handled in Hibernate.
- Understand the persistent object lifecycle and how that relates to transactions and concurrency.
- Take advantage of Hibernate's data filtering and interception.

Topics

- Introduction to Hibernate
- Getting Started with Hibernate
- Basic ORM in Hibernate
- Value-Type Collections and Components
- Entity Associations (Relations)
- Mapping Inheritance
- Hibernate Annotations
- Hibernate and JPA
- Working with Persistent Objects
- Transactions
- Querying for Objects

Audience

This is an intermediate level and beyond Java / Hibernate training course, designed for developers who need to understand how and when to use Hibernate in Java or JavaEE / J2EE applications.

Prerequisites

Students should have practical basic Java development experience or have taken an introductory-level Java course.

Duration

Five days

Mastering Hibernate 3.6 for Persistence in Java Course Outline

I. Introduction to Hibernate

- A. ORM Mapping Issues
- B. Hibernate Architecture
- C. Persistence, Identity, and Equality in Hibernate
- D. Domain Models and Metadata Options
- E. Options for Representing Persistence

II. Getting Started with Hibernate

- A. Basic Mapping
- B. Class/properties to Table/Columns
- C. Basic Configuration
- D. Mapping a POJO to a Database
- E. Syntax of mapping file
- F. Basics of Hibernate Session
- G. Working with Persisted Objects

III. Basic ORM in Hibernate

- A. Configuring persistence
- B. Object Identity in Hibernate
- C. Generating Unique Keys
- D. Mapping Classes to Multiple Tables

IV. Value-Type Collections and Components

- A. Element Types
- B. Mapping Compositions
- C. Mapping Java Collections
- D. Bags and Dynamic Components

V. Entity Associations (Relations)

- A. Types of Associations
- B. Uni- and Bi-Directional Associations
- C. Using Join Tables
- D. Many-to-Many Associations
- E. Cascading Over Associations

VI. Mapping Inheritance

- A. Strategies for Inheritance ORM
- B. Single, Class, and Concrete Table Patterns
- C. Discriminators

VII. Hibernate Annotations

- A. Working with Hibernate Annotations
- B. Annotation-Capable Sessions
- C. Annotations and Persistence
- D. Annotations, Mapping, and Relationships

VIII. Hibernate and JPA

- A. Java Persistence API
- B. Entities and Metadata
- C. Entity Manager
- D. Finding Entities
- E. Implementation Options
- F. Hibernate as a JPA Option
- G. Mechanics of using Hibernate for JPA

IX. Working with Persistent Objects

- A. Transient, Persistent, and Detached
- B. Transitioning Between States
- C. Options for Retrieving Objects
- D. Attached and Detached States
- E. Update, Merge, and Cascade

X. Transactions

- A. Transaction Control and Isolation Levels
- B. Options for Demarcating Transactions
- C. Using a Contextual Session
- D. Correctly Handling Exceptions
- E. Optimistic and Pessimistic Locking in Hibernate
- F. Lock Scopes and Cascading

XI. Querying for Objects

- A. Hibernate Query API
- B. Hibernate Query Language (HQL)
- C. HQL Syntax and Usage
- D. Criteria