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# Introduction to Data Persistence with Hibernate

## Description

Hibernate provides an elegant and robust solution to the problem of persisting Java objects. Its tremendous success with the developer community has made this library essential and has inspired new standards (J2EE and EJB3 Java Persistence API to J2EE5). The course covers all aspects of the Object Relational Mapping and the solutions provided by Hibernate.

### Classroom Registration Price (CHF)

2300

### Virtual Classroom Registration Price (CHF)

2150

## Course Content

### Module 1: Understanding object/relational persistence

- Lesson 1: What is persistence?
- Lesson 2: The paradigm mismatch
- Lesson 3: Persistence layers and alternatives
- Lesson 4: Object/relational mapping

### Module 2: Starting a project

- Lesson 1: Starting a Hibernate project
- Lesson 2: Starting a Java Persistence project
- Lesson 3: Reverse engineering a legacy database
- Lesson 4: Integration with Java EE services

### Module 3: Domain models and metadata

- Lesson 1: Implementing the domain model
- Lesson 2: Object/relational mapping metadata
- Lesson 3: Alternative entity representation

### Module 4: Mapping persistent classes

- Lesson 1: Understanding entities and value types
- Lesson 2: Fine-grained domain models
- Lesson 3: Mapping entities with identity
- Lesson 4: Class mapping options
- Lesson 5: Fine-grained models and mappings

### Module 5: Inheritance and custom types

- Lesson 1: Mapping class inheritance
- Lesson 2: The Hibernate type system Built-in mapping types
- Lesson 3: Creating custom mapping types

### Module 6: Mapping collections and entity associations

- Lesson 1: Sets, bags, lists, and maps of value types

- Lesson 2: Collections of components
- Lesson 3: Mapping collections with annotations
- Lesson 4: Mapping a parent/children relationship

### **Module 7: Advanced entity association mappings**

- Lesson 1: Single-valued entity associations
- Lesson 2: Many-valued entity associations
- Lesson 3: One-to-many associations
- Lesson 4: Polymorphic many-to-one associations

### **Module 8: Legacy databases and custom SQL**

- Lesson 1: Integrating legacy databases
- Lesson 2: Customizing SQL
- Lesson 3: Improving schema DDL

### **Module 9 : Working with objects**

- Lesson 1: The persistence lifecycle
- Lesson 2: Object identity and equality
- Lesson 3: The Hibernate interfaces
- Lesson 4: The Java Persistence API
- Lesson 5: Using Java Persistence in EJB components

### **Module 10: Transactions and concurrency**

- Lesson 1: Transaction essentials
- Lesson 2: Controlling concurrent access
- Lesson 3: Understanding database-level concurrency
- Lesson 4: Nontransactional data access

### **Module 11: Implementing conversations**

- Lesson 1: Propagating the Hibernate Session through thread-local
- Lesson 2: Conversations with Hibernate
- Lesson 3: Conversations with JPA
- Lesson 4: Conversations with EJB

### **Module 12: Modifying objects efficiently**

- Lesson 1: Transitive persistence
- Lesson 2: Bulk and batch operations
- Lesson 3: Data filtering and interception

### **Module 13 : Optimizing fetching and caching**

- Lesson 1: Defining the global fetch plan
- Lesson 2: The object-retrieval options
- Lesson 3: Selecting a fetch strategy
- Lesson 4: Caching fundamentals
- Lesson 5: Caching in practice

## Module 14 : Querying with HQL and JPA QL

- Lesson 1: Creating and running queries
- Lesson 2: Basic HQL and JPA QL queries
- Lesson 3: Joins, reporting queries, and subselects

## Module 15: Advanced query options

- Lesson 1: Querying with criteria and example
- Lesson 2: Using native SQL queries
- Lesson 3: Filtering collections
- Lesson 4: Caching query results

## Module 16: Creating and testing layered applications

- Lesson 1: Hibernate in a web application
- Lesson 2: Creating a persistence layer
- Lesson 3: A generic data-access object pattern
- Lesson 4: Introducing the Command pattern
- Lesson 5: Designing applications with EJB
- Lesson 6: Testing

## Module 17 : Introducing JBoss Seam

- Lesson 1: The Java EE programming model
- Lesson 2: Improving the application with Seam
- Lesson 3: Understanding contextual components
- Lesson 4: Validating user input
- Lesson 5: Simplifying persistence with Seam

## Documentation

- Digital courseware included

## Participant profiles

- Programmers, developers and project managers wishing to acquire the necessary foundation for development with Hibernate

## Prerequisites

- Knowledge in Java

## Objectives

- Implement Object-Relational persistence in your application
- Master the Hibernate features which make your applications successful

## Niveau

Fondamental

## Duration (in Days)

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## Reference

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