

Updated 05/07/2023

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Java Persistence API training

3 days (21 hours)

Presentation

The Java Persistence API provides a POJO persistence model for object-relational mapping. The Java Persistence API was developed by the EJB 3.0 software as part of JSR 220, but its use is not limited to EJB software components. It can also be used directly by Web applications and application clients, and even outside the Java EE platform, for example, in Java SE applications. See JSR 220.

The use of O/R mapping for persistence provides a higher level of abstraction than the simple use of JDBC: this mapping enables the transformation of objects into the database and vice versa, whether for reads or updates (creation, modification or deletion).

Developed as part of EJB version 3.0, this API is not limited to EJBs, as it can also be implemented in Java SE applications.

Use of the API does not require any lines of code implementing the JDBC API.

The API offers a query language similar to SQL, but using objects rather than relational database entities.

The Java Persistence API is based on entities, which are simple annotated POJOs, and on a manager for these entities (EntityManager) that provides functions for manipulating them (add, modify, delete, search). This manager is responsible for managing the state of entities and their persistence in the database.

In this training, as in all our training courses, we will be using the [latest stable version 5.5](#) of Hibernate and [version 2.2 of JPA](#).

Objectives

- understanding JPA architecture
- set up and manage persistent objects
- map persistent objects in the database
- Transaction management

Target audience

Developer

Prerequisites

Java development skills

Java Persistence API training program

Introduction

- Persistence in the Web Tier
- Persistence in the EJB Tier
- Java Persistence Query language

Services

- Security in the Java EE platform
- Securing Java EE applications
- Securing Web applications
- Java Message Service API
- Transaction
- Locking
- Connector architecture

Bottom entity mapping

- Types
- IDS
- Constraints
- Associations
- Data recovery
- Cascade operation

Advanced mapping

- Inlay
- Valuable objects as integrable objects
- Dial keys
- The mapping between the entity bean and the table
- Complex property mapping
- Mapping an entity to several tables
- The use of embedded objects in entities

Using Entity Manager

- Introducing EntityManager
- Lifecycle
- EntityManager API
- Extended mode
- Obtaining an instance of the EntityManager class
- Using the EntityManager class

Optimized queries

- JPQL
- API criteria
- Performance problems

Annotations

- The @Inheritance annotation
- The @DiscriminatorColumn annotation
- The @DiscriminatorValue annotation

Advanced topics

- Callbacks
- Listeners
- Hibernate Shreads
- Searching for hibernation - Lucene
- Hibernation session

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Teaching methods

Practical training: 60% Practical, 40% Theory. Training material distributed in

to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.