kod szkolenia: JAVA_P_API / ENG DL 4d

Java Persistence API

Training recipients

The training is intended for:
– Java developers who want to learn JPA from the ground up or expand their knowledge
– Architects and technical leads designing business applications
– Application maintainers working with Java applications integrated with relational databases who want to gain a deeper understanding of the ORM layer
– Students and graduates of computer science preparing to work on commercial projects
– Professionals seeking to enhance their skills and improve efficiency when working with business applications based on JPA

Benefits

After completing the training, the participant will be able to:
– understand the principles of ORM and JPA
– map Java entity classes to relational databases
– work confidently with entities and manage their lifecycle
– write JPQL queries and use the Criteria API
– apply inheritance mechanisms, relationships, and collections
– use entity lifecycle events and cascading operations
– optimize queries and deliberately apply lazy relationships

Training program

1. INTRODUCTION
   – ORM definition
   – persistence technologies in Java
   – JPA history

- entity properties

2. ENTITY MANAGER
   - defining entities
   - entity manager
   - EM methods
   - transactions
3. OBJECT-RELATIONAL MAPPINGS
   - persistence annotations
   - access to entity state
   - mapping to tables
   - mapping data types
   - mapping to the primary key
   - primary key generation strategies
   - composite primary keys
4. RELATIONSHIP MAPPINGS
   - basic concepts and notations
   - unidirectional 1:1 relationship
   - bidirectional 1:1 relationship
   - unidirectional M:1 relationship
   - bidirectional 1:M / M:1 relationship
   - unidirectional 1:M relationship
   - bidirectional M:N relationship
   - lazy relationships
   - embedded objects
   - cascading operations
5. COLLECTION MAPPINGS
   - List collection mapping
   - collection ordering
   - Map collection mapping
6. OBJECT-ORIENTED CONCEPTS
   - inheritance
   - mapped superclasses
   - transient classes
   - inheritance strategies
   - single-table strategy
   - joined strategy
   - table-per-concrete-class strategy
7. JAKARTA PERSISTENCE QUERY LANGUAGE
   - SELECT query
   - FROM clause
   - INNER JOIN clause

– OUTER JOIN clause
– WHERE clause
– subqueries
– case expressions
– UPDATE statement
– DELETE statement

8. USING QUERIES
– defining queries
– dynamic queries
– named queries
– queries with parameters
– executing queries and retrieving results
– updating and deleting data

9. CRITERIA API
– what is Criteria API?
– defining queries
– creating queries
– basic clauses
– FROM clause
– SELECT clause
– JOIN clause
– WHERE clause
– ORDER BY, GROUP BY, HAVING clauses

10. CALLBACKS
– lifecycle events
– callback methods
– entity listener

Expected preparation of the participant

To fully benefit from the training, participants should have:
– knowledge of the Java language at least at a basic level – classes, interfaces, collections, exceptions
– a basic understanding of relational databases – concepts such as tables, primary and foreign keys, indexes, simple SQL queries
– experience working with Java SE and Java EE applications (servlets, JSP pages, EJB)
– the ability to use IntelliJ Ultimate IDE
– basic knowledge of Maven

Czas trwania

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Language

Language: English