Developing Applications with Java Persistence API (JPA)

Duration: 3 Days  Course Code: WD160G

Overview:
This 2-day instructor-led course teaches you how to build, develop and run Java applications that use the Java Persistence API (JPA). You will use IBM Rational Application Developer V7.5, which provides complete support for the JPA specification, to develop the JPA-based applications in this course.

JPA provides a mechanism for managing persistence and object-relational mapping. It represents a significant evolution over previous persistence techniques, such as Java Database Connectivity (JDBC) and EJB 2.0 Container-Managed Persistence (CMP) and it can be used in both Java Standard Edition (Java SE) and Java Enterprise Edition (Java EE) applications.

This course begins with an overview of persistence and the JPA specification, including features of the Java Platform that support JPA and JPA architecture. Subsequent topics include creating JPA entities, using Java Persistence Query Language (JPQL) and performing object-to-relational mappings (ORM) for persistent data. You will also learn how the use of JPA in applications differs between the Java SE and Java EE environments.

Hands-on exercises throughout this course give you practical experience developing JPA-based applications with IBM Rational Application Developer V7.5. JPA development skills covered in the exercises include creating entity classes, developing a Java SE application to perform database operations, mapping entities to single and multiple tables and working with JQL queries.

Note: This course covers the use of JPA in Java Standard Edition and Java Enterprise Edition Web container environments. It does not specifically address the use of JPA with Enterprise JavaBeans (EJBs). To learn how to use JPA entities running in an EJB container, you should attend one of the following courses:
- Developing EJB 3 Applications for WebSphere Application Server V7 (WD352)
- Developing EJB 3 Applications for WebSphere Application Server V7 (Remote Class) (VD352)

For information on other related WebSphere courses, visit the WebSphere Education Training Paths Web site: http://www.ibm.com/software/websphere/education/paths/

Target Audience:
This course is designed for experienced Java application developers who want to learn how to develop Java SE or Java EE applications that access relational data using JPA.

Objectives:
- Use the Java Persistence API to develop and run JPA entities
- Develop JPA applications for the Java SE environment
- Use Java Persistence Query Language (JPQL)
- Code JPA applications for the Java EE Web environment
- Perform object-to-relational mappings (ORM) for persistent data
- Develop and test JPA code using IBM Rational Application Developer V7.5
- Implement persistent entities and embedded objects

Prerequisites:
You should have practical experience with the Java programming language. This knowledge can be gained by successfully completing one of the following courses:
- Java SE 5 Programming Fundamentals (WD152)
- Java SE 5 Programming Fundamentals (Remote Classroom) (VD152)
- Java SE 5 Programming Fundamentals (Self-Paced) (ZD152)

You should also have knowledge of database concepts such as SQL, primary and foreign keys, joins, and referential integrity.

Some knowledge of Java EE Web development and experience using Rational Application Developer or another Eclipse-based development environment are also beneficial.
In addition, the following are beneficial, but not required:

- Experience using JDBC
- Some knowledge of Java EE Web development
- Experience using Rational Application Developer or another Eclipse-based development environment

Content:

- Course introduction
- The role of persistence and the Java Persistence API
- Features of the Java platform that support JPA
- The architecture of JPA
- Exercise: Creating the first JPA entity bean
- Entity life cycle states
- Exercise: Writing a Java SE application to perform database operations
- Object-relational mapping for a single table
- Exercise: Running JPA entities in a Web container
- Object-relational mapping over multiple tables
- Exercise: JPA entities that map to multiple tables
- Entity life cycle methods and listeners
- Exercise: JPA callbacks and life cycle listeners
- Java Persistence Query Language (JPQL)
- Exercise: JPQL queries
- Course summary

Further Information:

For More information, or to book your course, please call us on 00 971 4 446 4987
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