

JDBC - Java Database Connectivity

Course Summary

Description

JDBC is a Java technology for accessing SQL databases. It is a core part of J2EE, and it works with every major database product. This hands-on course covers all the details that you will need to use JDBC to access the information in your databases using Java. It also talks about real world issues in using JDBC.

All labs can be done with the **Eclipse IDE** or a simple editor, and the lab instructions include detailed directions on both environments.

Objectives

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

- Understand the JDBC architecture
- Connect to different databases with JDBC
- Understand the JDBC API
- Execute SQL statements using JDBC, and retrieve results
- Call stored procedures from JDBC
- Understand and control transactions with JDBC
- Retrieve information about database structure using DatabaseMetaData
- Use Advanced JDBC features

Topics

- Relational Database and JDBC Overview
- JDBC Architecture, JDBC API Overview
- Connecting to a database
- DataBaseMetaData
- Handling Database Exceptions
- DAO – Data Access Objects, O-R Mapping, Value Objects
- Processing Database Data
- JDBC Driver Types
- DataSource
- Connection Pooling
- Other Database Access Technologies
- Advanced JDBC Features

Prerequisites

Students should have basic knowledge of Java and SQL.

Duration

One day

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Course Outline

I. Introduction

- A. Relational Database and JDBC Overview
 - 1. Overview, Table Relationships, Web Based Data Access, JDBC Characteristics
- B. JDBC Architecture, JDBC API Overview
 - 1. DriverManager, JDBC Drivers
 - 2. Naming databases with JDBC URLs
- C. Connecting to a database
 - 1. Connection interface, Establishing a connection
- D. DataBaseMetaData
- E. Handling Database Exceptions

II. Data Access

- A. DAO – Data Access Objects, O-R Mapping, Value Objects
- B. Processing Database Data
 - 1. Executing statements, precompiled statements and stored procedures
 - 2. Processing ResultSets,
 - 3. Dealing with Null data
 - 4. Updating, inserting, retrieving data
 - 5. Controlling Transactions
- C. JDBC Driver Types
- D. DataSource
 - 1. J2EE and DataSource
 - 2. Using JNDI
- E. Connection Pooling
 - 1. Overview, Usage, Advantages, Statement Pooling

III. Advanced Topics

- A. Other Database Access Technologies
 - 1. SQLJ, O-R Mapping Tools, JDO (Java Data Objects), EJB Entity Beans
- B. Advanced JDBC Features
 - 1. Batch Updates, Scrollable Result Sets, Rowsets, User Defined Types, BLOBS, CLOB