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Accessing Databases with JDBC: Solutions

It is a capital mistake to theorize before one has data.
—Arthur Conan Doyle

Now go, write it before them in a table, and note it in a book, that it may be for the time to come for ever and ever.
—The Holy Bible, Isaiah 30:8

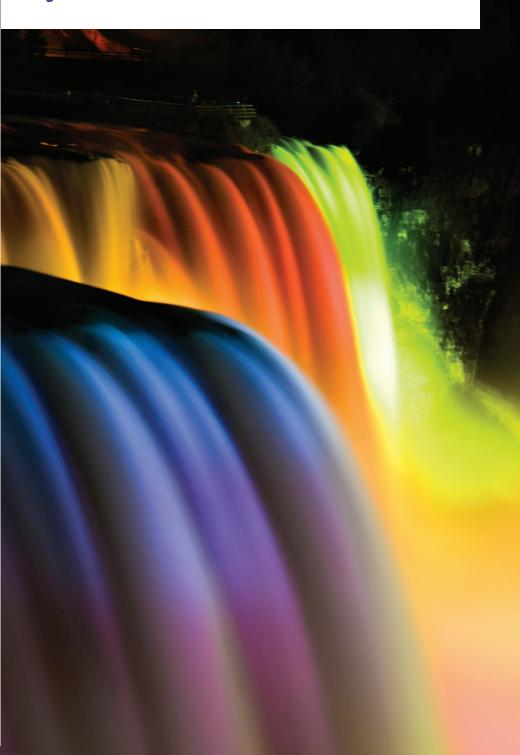*Get your facts first, and then you can distort them as much as you please.*
—Mark Twain

I like two kinds of men: domestic and foreign.
—Mae West

Objectives

In this chapter you'll learn:

- Relational database concepts.
- To use Structured Query Language (SQL) to retrieve data from and manipulate data in a database.
- To use the JDBC™ API to access databases.
- To use the `RowSet` interface from package `javax.sql` to manipulate databases.
- To use JDBC 4's automatic JDBC driver discovery.
- To create precompiled SQL statements with parameters via `PreparedStatement`s.
- How transaction processing makes database applications more robust.

Self-Review Exercise

28.1   Fill in the blanks in each of the following statements:
   a)   The international standard database language is _____.
   b)   A table in a database consists of _____ and _____.
   c)   Statement objects return SQL query results as _____ objects.
   d)   The _____ uniquely identifies each row in a table.
   e)   SQL keyword _____ is followed by the selection criteria that specify the rows to se-
        lect in a query.
   f)   SQL keywords _____ specify the order in which rows are sorted in a query.
   g)   Merging rows from multiple database tables is called _____ the tables.
   h)   A(n) _____ is an organized collection of data.
   i)   A(n) _____ is a set of columns whose values match the primary-key values of an-
        other table.
   j)   _____ method _____ is used to obtain a `Connection` to a database.
   k)   Interface _____ helps manage the connection between a Java program and a data-
        base.
   l)   A(n) _____ object is used to submit a query to a database.
   m)   Unlike a `ResultSet` object, _____ and _____ objects are scrollable and updat-
        able by default.
   n)   _____, a disconnected `RowSet`, caches the data of a `ResultSet` in memory.

Answers to Self-Review Exercise

28.1   a) SQL. b) rows, columns. c) `ResultSet`. d) primary key. e) `WHERE`. f) `ORDER BY`.
g) joining. h) database. i) foreign key. j) `DriverManager`, `getConnection`. k) `Connection`. l) `State-
ment`.  m) `JdbcRowSet`, `CachedRowSet`  n) `CachedRowSet`.

Exercises

NOTE: Solutions to the programming exercises are located in the `ch28solutions` fold-
er. Each exercise has its own folder named `Ex28_##` where `##` is a two-digit number rep-
resenting the exercise number. For example, exercise 28.3's solution is located in the
folder `Ex28_03`.