Key Java Language Features and Libraries

The past two major releases of the JDK have seen some significant changes. JDK 5 introduced new features at the language level, something that has not happened since Java was first released. Some of the most significant features added to the language are generics (parameterized types), enumerations, and metadata. With JDK 6, one of the biggest changes is the inclusion of a lightweight database known as Derby, which is from the Apache Database project.

The first half of this chapter introduces Derby and reviews the new language features from JDK 5. The second half of this chapter details certain key utility packages in the `java.util` branch of the class library that are useful for professional programming in Java.

Introducing Derby

New to Java 6 is a lightweight database called Derby, a product of the Apache Database project. Derby is a transactional, relational database and provides a small footprint on disk. As of the July 13, 2006 release of the Java 6 JDK, Derby is installed (by default) in `C:\Program Files\Java\jdk1.6.0\db` and includes the core libraries, demonstration programs, and an example database. Derby started its life as CloudScape, a product IBM acquired with Informix. In 2004, IBM decided to open source CloudScape and it became an incubator project under the Apache Software Foundation with the name Derby. The real benefits to using Derby are that it has minimal administration needs and a small footprint. The databases are small on disk, roughly 2MB for a basic database. The fact that administration is minimal allows you, as a developer, to easily create and use databases in code. This speeds up development. Deployment is made that much easier because Derby supports storage of a database archived in a JAR file, allowing you to simply distribute the JAR file.

Because Derby is an involved topic, this section serves only to introduce Derby and its features, using the included command-line tool and a brief exploration of using the JDBC driver. Derby is revisited later in this book.