SELECT Statements in Transactions

In the categories of different SQL statements, the SELECT statement can be classified in its own separate category of *data query language*, or DQL. Alternatively, some people group the SELECT command together with INSERT, UPDATE, and DELETE in the *data manipulation language*, or DML category. It is true that SQL provides a seamless combination of all the different kinds of statements, but there is an important way that SELECT statements interact with DML statements: in transactions. Transactions let you combine multiple INSERT, UPDATE, and DELETE statements in a single atomic action. You can also have a SELECT statement participating in and informing a transaction. For example, a transaction can UPDATE a row, then run a SELECT to check the resulting provisional state of the database, then COMMIT or ROLLBACK depending on the result of the SELECT. The pending database change provided in the UPDATE—while isolated from other user sessions—is reported to your own transaction. This ability to *see* changes in the database *while they are still pending* is one way that SELECT statements may be considered part of DML.

The emphasis here is that ACID-compliant systems let you combine SELECT with INSERT, UPDATE, and DELETE statements in a transaction. A number of the features in relational systems depend upon this combination of statements for their implementation.