

## Database Programming with SQL 15-2: DML Operations and Views Practice Activities

## Objectives

- Write and execute a query that performs DML operations on a simple view
- Name the conditions that restrict modifying a view using DML operations
- Write and execute a query using the WITH CHECK OPTION clause
- Explain the use of WITH CHECK OPTION as it applies to integrity constraints and data validation
- Apply the WITH READ ONLY option to a view to restrict DML operations

## Vocabulary

Identify the vocabulary word for each definition below.

| A pseudocolumn which assigns a sequential value starting with 1 |
|---|
| to each of the rows returned from the subquery                  |
| Specifies that INSERTS and UPDATES performed through the        |
| view can't create rows which the view cannot select             |
| Ensures that no DML operations can be performed on this view    |
| ·   |

## Try It / Solve It

Use the DESCRIBE statement to verify that you have tables named copy\_d\_songs, copy\_d\_events, copy\_d\_cds, and copy\_d\_clients in your schema. If you don't, write a query to create a copy of each.

- 1. Query the data dictionary USER\_UPDATABLE\_COLUMNS to make sure the columns in the base tables will allow UPDATE, INSERT, or DELETE. Use a SELECT statement. All table names in the data dictionary are stored in uppercase.
- 2. Use the CREATE or REPLACE option to create a view of *all* the columns in the copy\_d\_songs table called view\_copy\_d\_songs.

3. Use view\_copy\_d\_songs to INSERT the following data into the underlying copy\_d\_songs table. Execute a SELECT \* from copy\_d\_songs to verify your DML command. See the graphic.

| ID | TITLE       | DURATION | ARTIST   | TYPE_CODE |
|----|-------------|----------|----------|-----------|
| 88 | Mello Jello | 2        | The What | 4         |

- 4. Create a view based on the DJs on Demand COPY\_D\_CDS table. Name the view read\_copy\_d\_cds. Select all columns to be included in the view. Add a WHERE clause to restrict the year to 2000. Add the WITH READ ONLY option.
- 5. Using the read\_copy\_d\_cds view, execute a DELETE FROM read\_copy\_d\_cds WHERE cd\_number = 90;
- Use REPLACE to modify read\_copy\_d\_cds. Replace the READ ONLY option with WITH CHECK OPTION CONSTRAINT ck\_read\_copy\_d\_cds. Execute a SELECT \* statement to verify that the view exists.
- 7. Use the read\_copy\_d\_cds view to delete any CD of year 2000 from the underlying copy\_d\_cds.
- 8. Use the read\_copy\_d\_cds view to delete cd\_number 90 from the underlying copy\_d\_cds table.
- 9. Use the read\_copy\_d\_cds view to delete year 2001 records.
- 10. Execute a SELECT \* statement for the base table copy\_d\_cds. What rows were deleted?
- 11. What are the restrictions on modifying data through a view?
- 12. What is Moore's Law? Do you consider that it will continue to apply indefinitely? Support your opinion with research from the internet.
- 13. What is the "singularity" in terms of computing?