 



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.

|  |  |
| --- | --- |
| ROWNUM | A pseudocolumn which assigns a sequential value starting with 1 to each of the rows returned from the subquery |
| WITH CHECK CONSTRAINT | Specifies that INSERTS and UPDATES performed through the view can’t create rows which the view cannot select |
| WITH READ ONLY | 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 or the Browse Data Dictionary feature in HTML DB. All table names in the data dictionary are stored in uppercase.

SELECT table\_name, column\_name, updatable, insertable, deletable

FROM user\_updatable\_columns

WHERE table\_name = 'COPY\_D\_SONGS';

SELECT table\_name, column\_name, updatable, insertable, deletable

FROM user\_updatable\_columns

WHERE table\_name = 'COPY\_D\_EVENTS';

SELECT table\_name, column\_name, updatable, insertable, deletable

FROM user\_updatable\_columns

WHERE table\_name = 'COPY\_D\_CDS';

SELECT table\_name, column\_name, updatable, insertable, deletable

FROM user\_updatable\_columns

WHERE table\_name = 'COPY\_D\_CLIENTS';

1. 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.

CREATE OR REPLACE VIEW view\_copy\_d\_songs

AS SELECT \*

FROM copy\_d\_songs;

SELECT \*

FROM view\_copy\_d\_songs;

1. 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 |

INSERT INTO view\_copy\_d\_songs

(id, title, duration, artist, type\_code)

VALUES

(88, 'Mello Jello', 2, 'The What', 4)

1. 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.

CREATE OR REPLACE VIEW read\_copy\_d\_cds

AS SELECT \*

FROM copy\_d\_cds

WHERE year = 2000

WITH READ ONLY

1. Using the read\_copy\_d\_cds view, execute a DELETE FROM read\_copy\_d\_cds WHERE cd\_number = 90;

DELETE FROM read\_copy\_d\_cds

WHERE cd\_number = 90; 🡪 **cannot perform a DML operation on a read-only view**

1. 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.

CREATE OR REPLACE VIEW read\_copy\_d\_cds

AS SELECT \*

FROM copy\_d\_cds

WHERE year = 2000

WITH CHECK OPTION CONSTRAINT ck\_read\_copy\_d\_cds

SELECT \*

FROM read\_copy\_d\_cds

1. Use the read\_copy\_d\_cds view to delete any CD of year 2000 from the underlying copy\_d\_cds.

DELETE FROM read\_copy\_d\_cds

WHERE year = 2000;

1. Use the read\_copy\_d\_cds view to delete cd\_number 90 from the underlying copy\_d\_cds table.

DELETE FROM read\_copy\_d\_cds

WHERE cd\_number = 90;

1. Use the read\_copy\_d\_cds view to delete year 2001 records.

DELETE FROM read\_copy\_d\_cds

WHERE year = 2001;

1. Execute a SELECT \* statement for the base table copy\_d\_cds. What rows were deleted?

2 linii sterse

1. What are the restrictions on modifying data through a view?

Nu putem modifica date daca view-ul contine group functions, o clauza group by, cuvantul DISTINCT,

Pseudocoloana ROWNUM, coloane definite de expresii

1. What is Moore’s Law? Do you consider that it will continue to apply indefinitely? Support your opinion with research from the internet.

Legea lui Moore afirma ca nr de tranzistoare din circuitele integrate se dubleaza anual de la inventia circuitului integrat incoace. Cercetarile mai recente vorbesc despre o dublare la 18 luni, dar o cercetare din anul 2013 afirma ca nr de componente se va dubla doar la 3 ani. Se estimeaza ca finalul acestei legi va avea loc in jurul anului 2025.

1. What is the “singularity” in terms of computing?

Singularitatea in termeni computationali este o ipoteza conform careia la un anumit moment de timp dezvoltarea tehnologiei va deveni incontrolabila si ireversibila rezultand schimbari neasteptate in civilizatia umana.

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