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

|  |  |
| --- | --- |
| ROWNUM | A pseudocolumn which assigns a sequential value starting with 1 to each of the rows returned from the subquery |
| WITH CHECK OPTION | 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. All table names in the data dictionary are stored in uppercase.

SELECT \*

FROM user\_updatable\_columns WHERE LOWER(table\_name) = 'copy\_d\_songs';

SELECT \*

FROM user\_updatable\_columns WHERE LOWER(table\_name) = 'copy\_d\_events';

SELECT \*

FROM user\_updatable\_columns WHERE LOWER(table\_name) = 'copy\_d\_cds';

SELECT \*

FROM user\_updatable\_columns WHERE LOWER(table\_name) = 'copy\_d\_clients';

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.

Create or replace view view\_copy\_d\_songs as

select \* from 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 |

Insert into view\_copy\_d\_songs (ID, TITLE, DURATION, ARTIST, TYPE\_CODE)

values (88, ‘Mello Jello’, 2, ‘The What’, 2)

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.

Create view read\_copy\_d\_cds as

select \* from copy\_d\_cds

where year = 2000

with read only

select \* from read\_copy\_d\_cds

5. 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

Ceea ce noi tocmai am creat e un view de tip READ ONLY. Nu pot modifica datele din tabel.

6. 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;

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

DELETE FROM copy\_d\_cds

WHERE year = '2000'

8. 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

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

Delete from read\_copy\_d\_cds where year = 2001

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

Se poate face pe loc

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

|  |  |  |  |
| --- | --- | --- | --- |
| Nu poti face | Delete | Modify | Insert |
| Daca contine | Group functions  clauza GROUP BY  DISTINCT  keyword ROWNUM | Idem  coloane definite de expresii | Idem  idem  nu include coloane NOT NULL in tabelul de baza |

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?

In afara scopului lectiei noastre