

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 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.

CREATE TABLE copy\_d\_songs

AS ( SELECT \* FROM d\_songs);

DESCRIBE copy\_d\_songs;

DESCRIBE d\_songs;

SELECT \* FROM d\_songs;

SELECT \* FROM copy\_d\_songs;

CREATE TABLE copy\_d\_events

AS ( SELECT \* FROM d\_events);

DESCRIBE copy\_d\_events ;

DESCRIBE d\_events;

SELECT \* FROM d\_events ;

SELECT \* FROM copy\_d\_events ;

CREATE TABLE copy\_d\_cds

AS ( SELECT \* FROM d\_cds);

DESCRIBE copy\_d\_cds;

DESCRIBE d\_cds;

SELECT \* FROM d\_cds;

SELECT \* FROM copy\_d\_cds ;

CREATE TABLE copy\_d\_clients

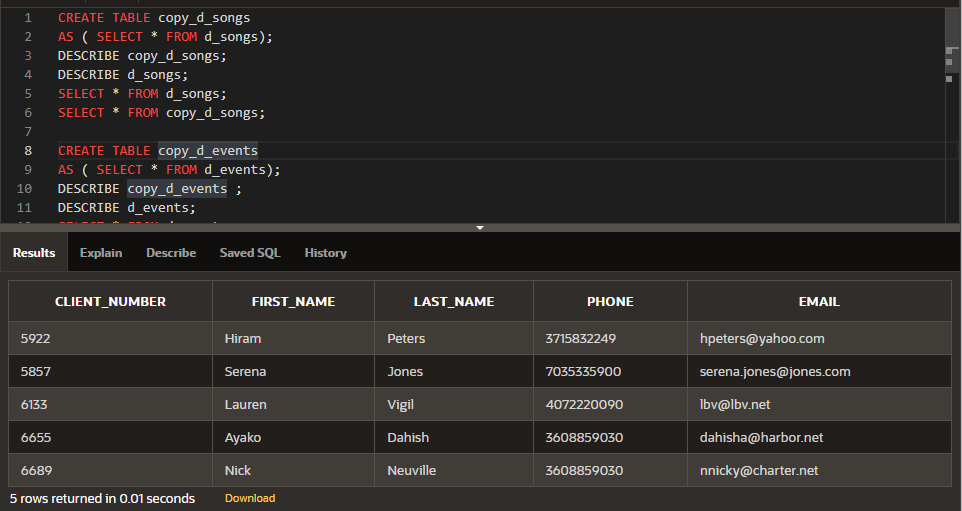
AS ( SELECT \* FROM d\_clients);

DESCRIBE copy\_d\_clients ;

DESCRIBE d\_clients;

SELECT \* FROM d\_clients ;

SELECT \* FROM copy\_d\_clients ;



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

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

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

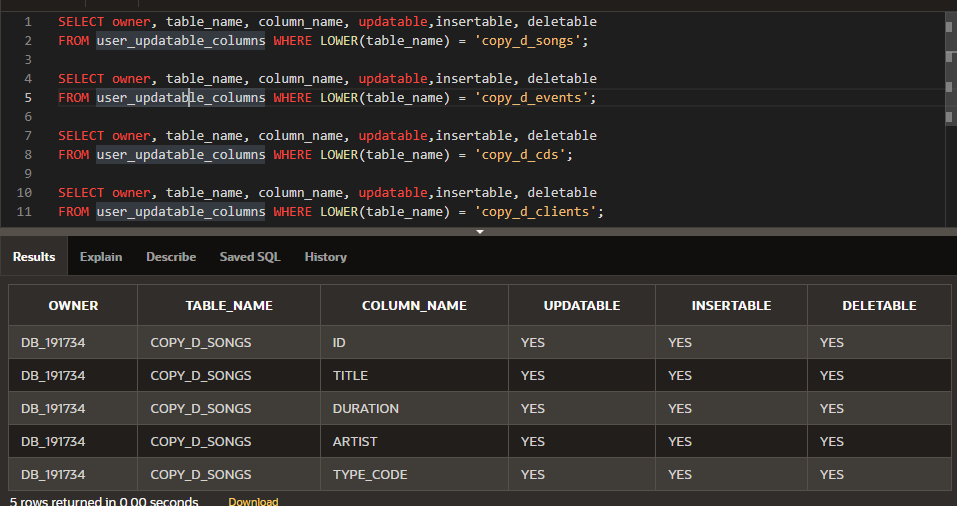
FROM user\_updatable\_columns WHERE LOWER(table\_name) = 'copy\_d\_events';

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

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

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

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



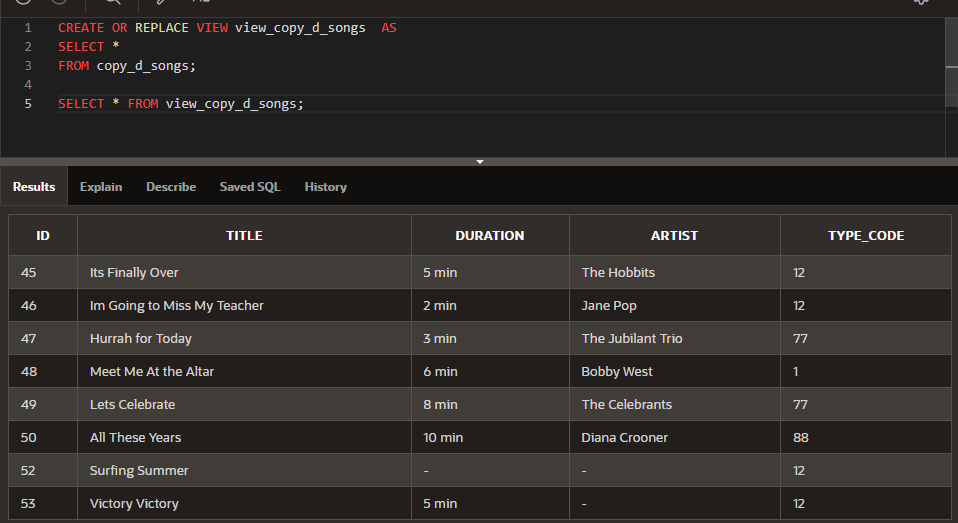
1. Use the CREATE or REPLACE option to create a view of *all* the columns in the copy\_d\_songs table called view\_copy\_d\_songs.

CREATE OR REPLACE VIEW view\_copy\_d\_songs AS

SELECT \*

FROM copy\_d\_songs;

SELECT \* FROM view\_copy\_d\_songs;



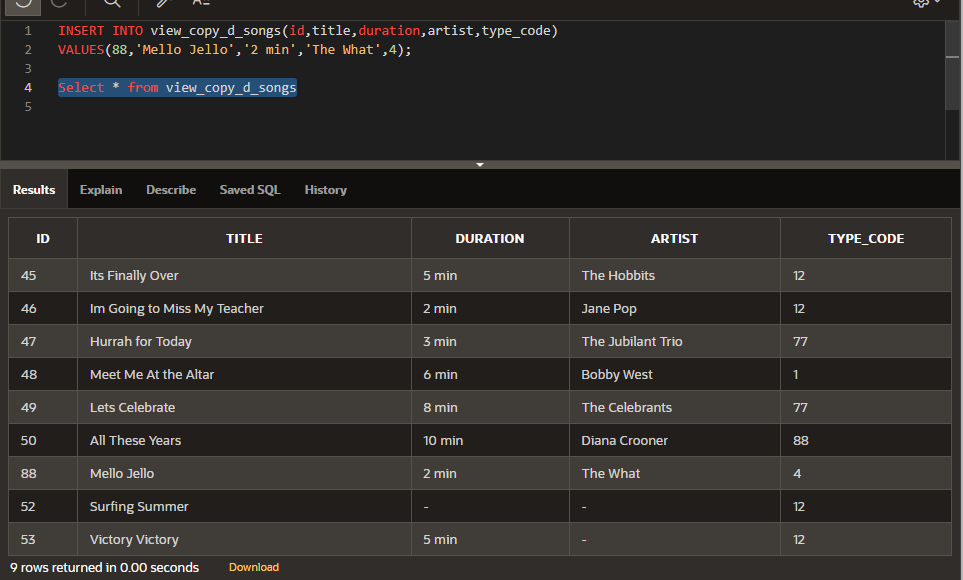
1. Use view\_copy\_d\_songs to INSERT the following data into the underlying copy\_d\_songs table. Execute a SELECT \* from copy\_d\_songs to verify your DML command. See the graphic.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 min','The What',4);

Select \* from view\_copy\_d\_songs



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

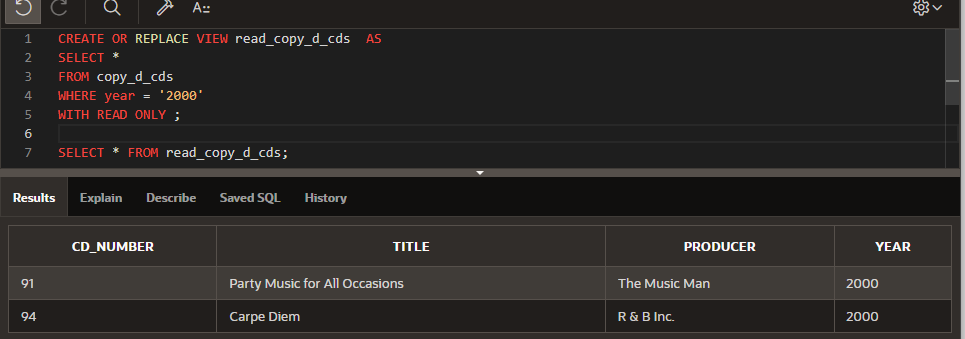
SELECT \*

FROM copy\_d\_cds

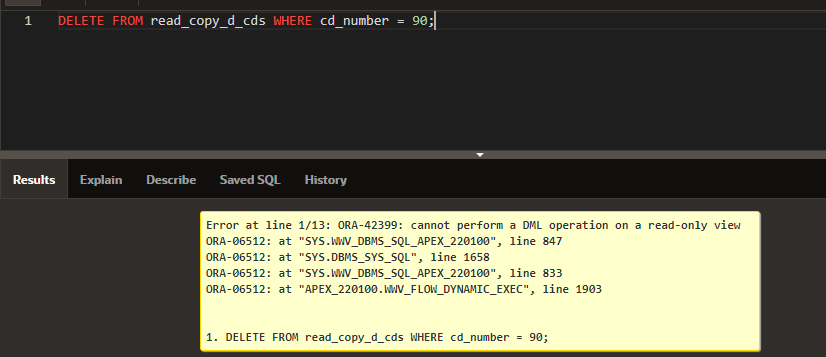
WHERE year = '2000'

WITH READ ONLY ;

SELECT \* FROM read\_copy\_d\_cds;



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



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

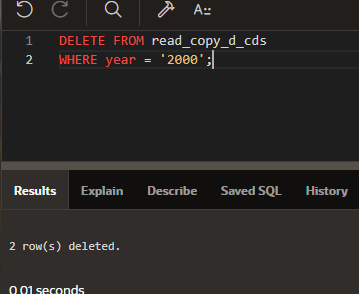
WHERE year = '2000'

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

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

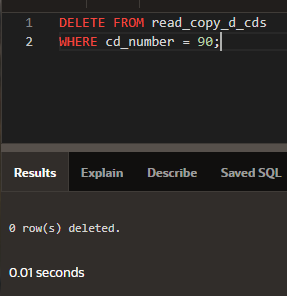
WHERE year = '2000';



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

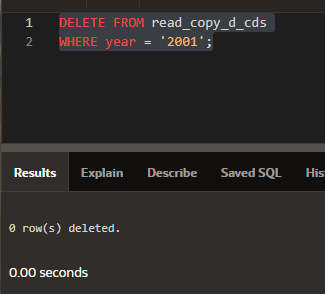
WHERE cd\_number = 90;



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

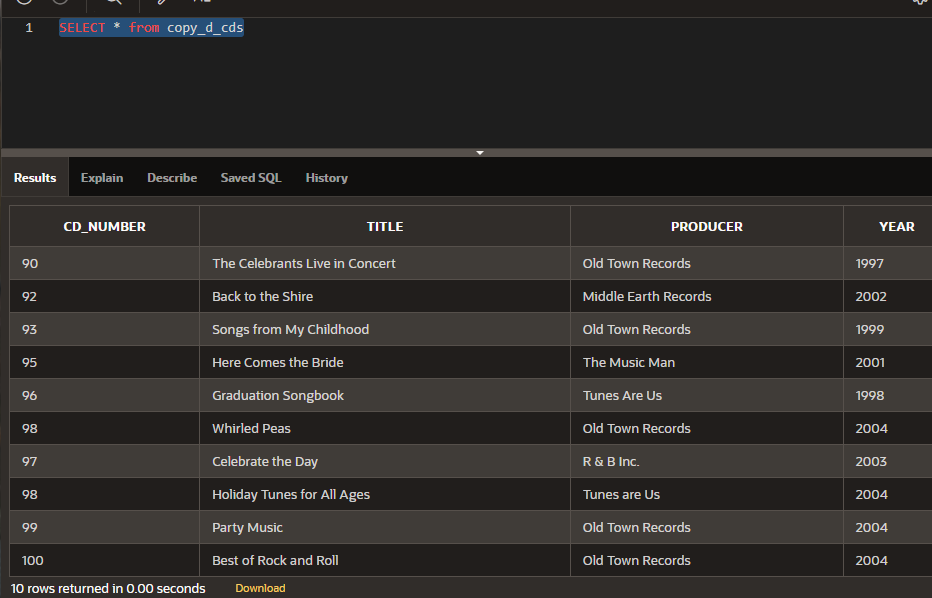
DELETE FROM read\_copy\_d\_cds

WHERE year = '2001';



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

SELECT \* from copy\_d\_cds



Только строки под запрос из 7 задания были удалены

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

**Delete ограничения следующие**

Group functions

GROUP BY CLAUSE

DISTINCT

pseudocolumn ROWNUM  Keyword

**Modify ограничения следующие**

Group functions

GROUP BY CLAUSE

DISTINCT

pseudocolumn ROWNUM Keyword

*Column defined by expressions*

**INSERT ограничения следующие**

Group functions

GROUP BY CLAUSE

DISTINCT

pseudocolumn ROWNUM Keyword

Column defined by expressions

*Does not include NOT NULL columns in the base table.*

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

Мур предполагал, что вычислительные мощности удваиваются каждый год, но учитывая особенность экспоненциальной функции это не будет продолжаться вечно.

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

Это гипотеза о том, что искусственный интеллект резко приведет к росту технологического прогресса, что отразится в глобальных изменениях жизнедеятельности человека.

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