## Database Programming with SQL

## 15-1: Creating Views

- 1. What are three uses for a view from a DBA's perspective?
  - Data Security and Access Control
  - Simplifying Complex Queries
  - Data Abstraction and Consistency
- 2. Create a simple view called view\_d\_songs that contains the ID, title, and artist from the DJs on Demand table for each "New Age" type code. In the subquery, use the alias "Song Title" for the title column.



3. SELECT \* FROM view d songs. What was returned?



4. REPLACE view d songs. Add type code to the column list. Use aliases for all columns.

5. Jason Tsang, the disk jockey for DJs on Demand, needs a list of the past events and those planned for the coming months so he can make arrangements for each event's equipment setup. As the company manager, you do not want him to have access to the price that clients paid for their events. Create a view for Jason to use that displays the name of the event, the event date, and the theme description. Use aliases for each column name.



6. It is company policy that only upper-level management be allowed access to individual employee salaries. The department managers, however, need to know the minimum, maximum, and average salaries, grouped by department. Use the Oracle database to prepare a view that displays the needed information for department managers.

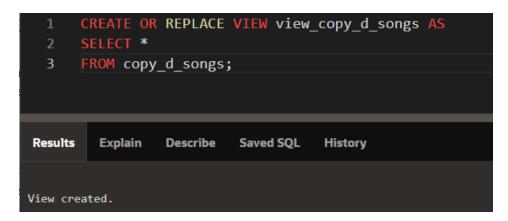


## 15-2: DML Operations and Views

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.

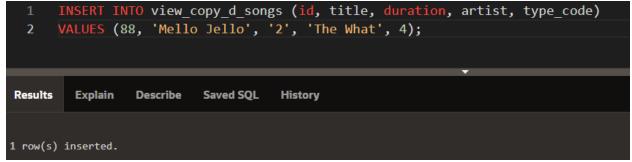


2. Use the CREATE or REPLACE option to create a view of all the columns in the copy\_d\_songs table called view\_copy\_d\_songs.

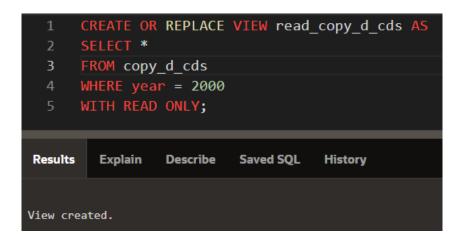


3. Use view\_copy\_d\_songs to INSERT the following data into the underlying copy\_d\_songs table. Execute a SELECT \* from copy\_d\_songs to verify your DML command. See the graphic.

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



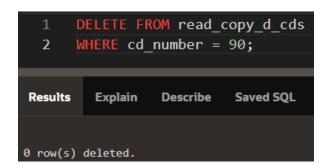
4. Create a view based on the DJs on Demand COPY\_D\_CDS table. Name the view read\_copy\_d\_cds. Select all columns to be included in the view. Add a WHERE clause to restrict the year to 2000. Add the WITH READ ONLY option.



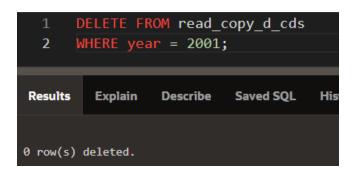
- 5. Using the read\_copy\_d\_cds view, execute a DELETE FROM read\_copy\_d\_cds WHERE cd number = 90;
  - Error at line 1/13: ORA-42399: cannot perform a DML operation on a readonly view
- 6. Use REPLACE to modify read\_copy\_d\_cds. Replace the READ ONLY option with WITH CHECK OPTION CONSTRAINT ck\_read\_copy\_d\_cds. Execute a SELECT \* statement to verify that the view exists.
  - Table View was created but no results were found since there are no records from year 2000.
- 7. Use the read\_copy\_d\_cds view to delete any CD of year 2000 from the underlying copy\_d\_cds.



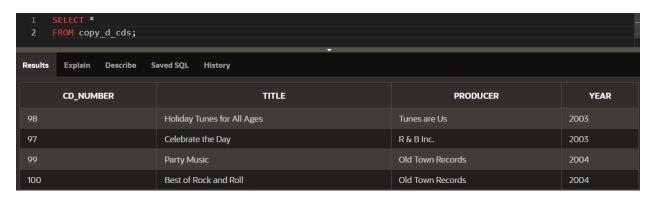
8. Use the read\_copy\_d\_cds view to delete cd\_number 90 from the underlying copy\_d\_cds table.



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?
  - Read-only Views: No DML operations are allowed.
  - With Check Option: Ensure that modifications via the view adhere to the view's WHERE clause conditions.
- 12. What is Moore's Law? Do you consider that it will continue to apply indefinitely?
  - According to Gordon Moore's Law, computer power will increase expone
    ntially as the number of transistors on a chip doubles roughly every two ye
    ars.

Moore's Law is challenged by physical and quantum constraints, such as t ransistor downsizing approaching atomic scale.

Though not in the conventional sense, performance gains may be maintain ed by recent advancements in parallel computing, AI accelerators and alternative materials.

- 13. What is the "singularity" in terms of computing?
  - The term "Singularity" describes a speculative future in which advances in technology, especially artificial intelligence (AI), become unstoppable an d irreversible, causing significant disruptions to civilization.

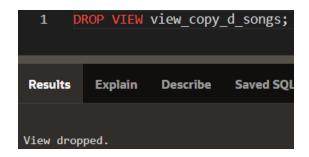
This idea frequently corresponds with AI.

## 15-3: Managing Views

1. Create a view from the copy\_d\_songs table called view\_copy\_d\_songs that includes only the title and artist. Execute a SELECT \* statement to verify that the view exists.



2. Issue a DROP view\_copy\_d\_songs. Execute a SELECT \* statement to verify that the view has been deleted.



3. Create a query that selects the last name and salary from the Oracle database. Rank the salaries from highest to lowest for the top three employees.



4. Construct an inline view from the Oracle database that lists the last name, salary, department ID, and maximum salary for each department. Hint: One query will need to calculate maximum salary by department ID.



5. Create a query that will return the staff members of Global Fast Foods ranked by salary from lowest to highest.

