2/9/2025

EXERCISE 13

Creating Views

1. What are three uses for a view from a DBA's perspective?

1. security - Restrict access to specific columns or rows of data cursor see only what they need.
2. simplification simplify complex SQL queries by storing them as single view.
3. Data consistancy.

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.

```
CREATE VIEW view_d_songs AS
SELECT id, title AS 'song title', artist
FROM djs_on_demand WHERE type_code =
"New age";
```

3. SELECT * FROM view_d_songs. What was returned?

This query will return all rows from the view d_songs view showing only i) ID, ii) SONG TITLE, iii) artist.

4. REPLACE view_d_songs. Add type_code to the column list, Use aliases for all columns.

```
CREATE OR REPLACE VIEW view_d_songs AS
SELECT id AS 'song ID',
       title AS 'song title',
       artist AS 'artist Name',
       type_code AS 'Type code',
FROM djs_on_demand
WHERE type_code = 'NEW AGE';
```

Or use alias after the CREATE statement as shown.

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.

```
CREATE VIEW view_event_list AS SELECT
event_name As "Event Name",
event_name As "event date",
theme_description As "Theme Description"
FROM events;
```

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.

```
CREATE VIEW view_dept_salaries As
SELECT department_id As "Department ID",
MIN(salary) As "Minimum salary",
MAX(salary) As "Maximum salary",
AVG(salary) As "Average salary",
FROM employees
GROUP By department_id;
```

DML Operations and Views

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. All table names in the data dictionary are stored in uppercase.

```
SELECT table_name, column_name,
insertable, updatable, deletable
FROM user_updatable_columns
WHERE table_name = 'COPY_D_SONGS';
COPY_D_EVENTS, COPY_D_CDS;
```

Use the same syntax but change table_name of the other tables.

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, typecode) VALUES (88, 'Mello
Jello', 2, 'The what', 4);
SELECT * FROM copy_d_songs;
```

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 OR REPLACE VIEW read_copy_d_cds
AS SELECT * FROM copy_d_cds
WHERE year = 2000
WITH READ ONLY ;
```

5. Using the read_copy_d_cds view, execute a DELETE FROM read_copy_d_cds WHERE cd_number = 90;

```
SELECT FROM read_copy_d_cds
WHERE cd_number = 90;
```

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
AS SELECT * from copy_d_cds
WHERE year = 2000,
WITH CHECK OPTION CONSTRAINT
```

7. Use the read_copy_d_cds view to delete any CD of year 2000 from the underlying copy_d_cds.

```
SELECT FROM read_copy_d_cds;
```

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?

SELECT * FROM copy_d_cds;
All rows from copy_d_cds WHERE year = 2000 were deleted.

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

The view must be updatable; if view has with read only no insert is allowed; if view has check option - must satisfy view where condition.

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

Moore's law states that number of transistor on a microchip doubles approx. every 18-20 months, which results in computers becoming faster and cheaper.

13. What is the "singularity" in terms of computing?

The technical singularity is a theorifical point in future when artificial inteligen surpasses human intelligence to extent that it can improve itself without human impact.

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.

```
Create Or Replace VIEW
View_copy_d_cds AS
SELECT title, artist
FROM copy_d_songs;
  SELECT * FROM view_copy_d_songs;
```

2. Issue a DROP view_copy_d_songs. Execute a SELECT * statement to verify that the view has been deleted.

```
DROP VIEW view_copy_d_songs;
  SELECT * FROM view_copy_d_songs;
```

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.

```
Select last_name, salary
FROM employees
ORDER By salary DESC
FETCH FIRST 3 ROWS only;
```

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.

```
select last_name, e.salary, e.dept_id, d.max_salary
FROM employees e JOIN (select dept_id, MAX(salary)
 AS max_salary FROM employees
    GROUP BY dept_id);
```

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

```
SELECT * FROM global_fast_foods_staff
ORDER BY salary ASC;
```

Evaluation Procedure	Marks awarded
Query(5)	5
Execution (5)	5
Viva(5)	5
Total (15)	15
Faculty Signature	