CHANDIGARH UNIVERSITY

Discover. Learn. Empower.

INSTITUTE : UIE
DEPARTMENT : APEX INSTITUTE OF TECHNOLOGY(CSE) -AIML

Bachelor of Engineering (Computer Science & Engineering)

Advanced Database Management System

Er. Vishwa Deepak (E12867)

DISCOVER . LEARN . EMPOWER

Synonym and Views

Course Objectives

CO Number	Course Objective	Level
CO1	Develop understanding the advancement in SQL	Apply

Course Outcome

CO Number	Course Outcome	Level
CO2	Create views of data and Implement transaction control using locks.	Apply

LECTURE OUTCOMES

- Student will learn about the advances in SQL like Locks.
- Student will learn about Shared and Exclusive locks

VIEWS

- A view is a “virtual” table that is derived from other tables
- Allows for limited update operations
  - Since the table may not physically be stored
- Allows full query operations
- A convenience for expressing certain operations

EXAMPLE

- Specify a different WORKS_ON table

```
CREATE VIEW WORKS_ON_NEW AS
SELECT FNAME, LNAME, PNAME, HOURS
        FROM EMPLOYEE, PROJECT, WORKS_ON
WHERE SSN=ESSN AND PNO=PNUMBER
        GROUP BY PNAME;
```

VIEWS

- We can specify SQL queries on a newly create table (view):

  SELECT FNAME, LNAME

  FROM WORKS_ON_NEW

  WHERE PNAME=‘Seema’;

- When no longer needed, a view can be dropped:

  DROP WORKS_ON_NEW;

VIEWS

- In some cases, it is not desirable for all users to see the entire logical model (that is, all the actual relations stored in the database.)
- Consider a person who needs to know an instructors name and department, but not the salary. This person should see a relation described, in SQL, by

  select *ID*, *name*, *dept_name*
  from *instructor*

- Any relation that is not of the conceptual model but is made visible to a user as a "virtual relation" is called a **view**.

VIEWS VS. TABLES

View definition is not the same as creating a new relation by ***evaluating the query expression***

- Rather, a view definition causes the **saving of an expression**; the expression is substituted into queries using the view.

VIEWS

- A view of instructors without their salary
-

```
create view faculty as
select ID, name, dept_name
from instructor
```

- Create a view of department salary totals
-

```
create view departments_total_salary(dept_name, total_salary) as
select dept_name, sum (salary)
from instructor
group by dept_name;
```

VIEWS

- A way to define the meaning of views defined in terms of other views.
- Let view v_1 be defined by an expression e_1 that may itself contain uses of view relations.
- View expansion of an expression repeats the following replacement step:
  - **repeat**
    Find any view relation v_i in e_1
    Replace the view relation v_i by the expression defining v_i
    until no more view relations are present in e_1
- As long as the view definitions are not recursive, this loop will terminate
  - A view relation *v* is said to be *recursive* if it depends on itself.

VIEWS

- **create view** *instructor_info* **as**
  select *ID*, *name*, *building*
  from *instructor*, *department* ***//two or more tables (complex view)***
  where *instructor.dept_name= department.dept_name*;
- **insert into** *instructor_info* **values** ('69987', 'White', 'Taylor');

- Most SQL implementations allow updates only **on simple views**
  - The **from** clause has only one relation.
  - The **select** clause contains only attribute names of the relation, and **does not have any expressions, aggregates, or distinct** specification.
  - Any attribute not listed in the **select** clause can be set to null
  - The query does not have a **group** by or **having** clause.

VIEWS

- **Materializing a view**: create a physical table containing all the tuples in the result of the query defining the view
- If relations used in the query are updated, the materialized view result becomes out of date
  - Need to **maintain** the view, by updating the view whenever the underlying relations are updated.

VIEWS

- Views defined using groups and aggregate functions are not updateable
- Views defined on multiple tables using joins are generally not updateable
- **WITH CHECK OPTION**: must be added to the definition of a view if the view is to be updated
  - To allow check for updatability and to plan for an execution strategy

ALTER VIEWS

- You do not need to drop a view if you want to modify it. Instead, you can change a previously existing view with the ALTER VIEW statement. This statement has the same design as CREATE VIEW statement, except that it modifies a previously existing view. An ALTER VIEW statement can be as simple as the following one.

alter view Myview

as

select my_select_list from my_data_source

NOTE:

The ALTER VIEW statement requires a previously existing view with the same name in order to succeed, but the CREATE VIEW statement fails if there is a previously existing view with the same name.

SUMMARY

Explained Views

Explained Creation and alteration of views

HOME WORK

- Write SQL state to create views?
- Write SQL state to alter views?

REFERENCES

Text Book:

1. Database Systems Concepts, design and Applications, S. K. SIngh

Reference book:

1. An Introduction to Database Systems, C.J. Date

2. Database System Concepts, Korth, Henry

Web References:

1. https://www.mssqltips.com/sqlservertip/6219/create-alter-drop-and-query-sql-server-views/

THANK YOU

Mail at: Vishwa.e12867@cumail.in