

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

Bachelor of Engineering (Computer Science & Engineering)

Advanced Database Management System

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**DISCOVER. LEARN. EMPOWER** 



# **Course Objectives**

CO	Course Objective	Level
Number		
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





- \* 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

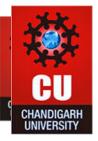
CREATE VIEW WORKS\_ON\_NEW AS

SELECT FNAME, LNAME, PNAME, HOURS

FROM EMPLOYEE, PROJECT, WORKS\_ON

WHERE SSN=ESSN AND PNO=PNUMBER

GROUP BY PNAME;



• 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;





- 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.





❖ 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;





- ❖A way to define the meaning of views defined in terms of other views.
- **\star**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.





- ❖ 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.





- 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 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/







