NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCES

CL 203-Database Systems

Lab Session 08

Creating Views

View

A view is a logical table based on other tables or another view. A view contains no data of its own but is like a window through which data from tables can be viewed or changed. The tables in which a view is based are called *base tables*. The view is stored as a SELECT statement in the data dictionary.

Views are used for following reasons:-

- ✓ To restrict database access because the view can display a selective portion of the database.
- ✓ To make complex queries easy. For example, views allow users to query information from multiple tables without knowing how to write a join statement.
- ✓ To allow data independence for ad hoc users and application programs. One view can be used to retrieve data from several tables.
- ✓ To present different views of the same data to different users.

Simple and Complex Views

There are two classifications for views: simple and complex. The basic difference is related to the DML (insert, update and delete) operations.

Feature	Simple Views	Complex Views
Number of tables	One	One or more
Contain functions	No	Yes
Contain groups of data	No	Yes
DML through view	Yes	Not always

Creating a View

We can create a view by embedding a subquery within the CREATE VIEW statement. The syntax is as follows:-

```
CREATE [OR REPLACE] VIEW view
AS subquery;
```

For example, to create a view, EMPVU10, that contains the employee number, name and job title for all the employees in department 10.

```
CREATE VIEW empvu10
AS SELECT empno, ename, job
FROM emp
WHERE deptno = 10;
```

We can display the structure of the view by using the SQL*Plus DESCRIBE command as Follows:-
DESCRIBE empvu10

We can also create views by using column aliases in the subquery.

```
CREATE VIEW salvu30
AS SELECT empno EMPLOYEE_NUMBER, ename NAME, sal SALARY
FROM emp
WHERE deptno = 30;
```

Now select the columns from this view by the given alias names.
The data from the view would be retrieved as follows:-

```
SELECT *FROM salvu30;
```

Views in the data dictionary

Once a view has been created, we can query the data dictionary table called USER_VIEWS to see the name of the view and the view definition. The text of the SELECT statement that constitutes the view is stored in a LONG column.

Creating a Complex View

A complex view contains columns from multiple tables and may also include group functions.

- To create a complex view to show employee number, employee name and department name, we would have to join EMP and DEPT tables as follows:-

```
CREATE VIEW EMP_DEPT
AS
SELECT EMPNO, ENAME, DNAME
FROM EMP, DEPT
WHERE EMP.DEPTNO = DEPT.DEPTNO;
```

- To create a complex view that contains group functions to display values from two tables.

```
CREATE VIEW dept_sum_vu (name, minsal, maxsal, avgsal)
AS SELECT d.dname, MIN(e.sal), MAX(e.sal), AVG(e.sal)
FROM EMP e, DEPT d
WHERE e.DEPTNO = d.DEPTNO
GROUP BY d.dname;
```

Removing a View

We can remove a view without losing data because a view is based on underlying tables in the database.The syntax is

```
DROP VIEW view;
```

For example to drop the empvu10 view,

```
DROP VIEW empvu10;
```

ACTIVITY

Create views for following purposes:-

i. Display each designation and number of employees with that particular designation.

ii. The organization wants to display only the details like empno, empname , deptno , deptname of all the employee except king.

iii. The organization wants to display only the details empno, empname, deptno, deptname of the employees.

BEST OF LUCK