

Government College of Engineering, Jalgaon
(An Autonomous Institute of Government of Maharashtra)

Name :	Semester : V	PRN :
Class : T. Y. B.Tech Computer	Academic Year : 2024-25	Subject : CO307U DBMS Lab
Course Teacher : Mr. Vinit Kakde		
Date of Performance :	Date of Completion :	

Practical no. 6

Aim: Write SQL queries to implement Views operation

Theory:

Views in SQL are a kind of virtual table. A view also has rows and columns like tables, but a view doesn't store data on the disk like a table. View defines a customized query that retrieves data from one or more tables, and represents the data as if it was coming from a single source. We can create a view by selecting fields from one or more tables present in the database. A View can either have all the rows of a table or specific rows based on certain conditions.

Advantages of View:

1. **Complexity:** Views help to reduce the complexity. Different views can be created on the same base table for different users.
2. **Security:** It increases the security by excluding the sensitive information from the view.
3. **Query Simplicity:** It helps to simplify commands from the user. A view can draw data from several different tables and present it as a single table.
4. **Consistency:** A view can present a consistent, unchanged image of the structure of the database. Views can be used to rename the columns without affecting the base table.

Disadvantages of View:

The DML statements which can be performed on a view created using single base table have certain restrictions are:

1. You cannot INSERT if the base table has any not null column that do not appear in view.
2. You cannot INSERT or UPDATE if any of the column referenced in the INSERT or UPDATE contains group functions or columns defined by expression.
3. You can't execute INSERT, UPDATE, DELETE statements on a view if with read only option is enabled.
4. You can't be created view on temporary tables.

Queries and outputs:

a) Creation of table by name EMPLOYEE

Syntax:

CREATE TABLE table_name (column1 datatype , column2 datatype , column3datatype , ...);

```
mysql> CREATE TABLE EMPLOYEE(EMP_NAME VARCHAR(20),EMP_NO INT,DEPT_NAME VARCHAR(20),DEPT_NO INT,DOJ DATE);
Query OK, 0 rows affected (0.05 sec)

mysql> desc employee;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| EMP_NAME | varchar(20) | YES | | NULL | |
| EMP_NO | int | YES | | NULL | |
| DEPT_NAME | varchar(20) | YES | | NULL | |
| DEPT_NO | int | YES | | NULL | |
| DOJ | date | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.04 sec)
```

b) creation of view by table name EMPVIEW and its

descriptionSyntax:

CREATE VIEW view_name AS SELECT column1, column2. FROM table_name WHERE condition;

```
mysql> CREATE VIEW EMPVIEW AS SELECT EMP_NAME,EMP_NO ,DEPT_NAME,DEPT_NO,DOJ FROM EMPLOYEE;
Query OK, 0 rows affected (0.01 sec)

mysql> DESC EMPVIEW;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| EMP_NAME | varchar(20) | YES | | NULL | |
| EMP_NO | int | YES | | NULL | |
| DEPT_NAME | varchar(20) | YES | | NULL | |
| DEPT_NO | int | YES | | NULL | |
| DOJ | date | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

c) Inserting values in to

EMPVIEWSyntax:

INSERT INTO <VIEW_NAME>(COLUMN NAME1,.....) VALUES(VALUE1,.....)

```
mysql> INSERT INTO EMPVIEW VALUES('DIVYA',102,'DATA ANALYST',11,'2023-11-17');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO EMPVIEW VALUES('OMKAR',103,'DEVELOPER',12,'2023-11-18');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO EMPVIEW VALUES('PRANAV',104,'CSE',13,'2023-11-19');
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM EMPLOYEE;
+-----+-----+-----+-----+-----+
| EMP_NAME | EMP_NO | DEPT_NAME | DEPT_NO | DOJ |
+-----+-----+-----+-----+-----+
| MONIKA | 101 | CSE | 10 | 2023-11-16 |
| DIVYA | 102 | DATA ANALYST | 11 | 2023-11-17 |
| OMKAR | 103 | DEVELOPER | 12 | 2023-11-18 |
| PRANAV | 104 | CSE | 13 | 2023-11-19 |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM EMPVIEW;
```

EMP_NAME	EMP_NO	DEPT_NAME	DEPT_NO	DOJ
MONIKA	101	CSE	10	2023-11-16
DIVYA	102	DATA ANALYST	11	2023-11-17
OMKAR	103	DEVELOPER	12	2023-11-18
PRANAV	104	CSE	13	2023-11-19

```
4 rows in set (0.00 sec)
```

D) DELETE row from employee where

emp_name='monika' Syntax:

DELETE <VIEW_NAME> WHERE <COLUMN NAME>="VALUE";

```
mysql> DELETE FROM EMPVIEW WHERE EMP_NAME='MONIKA';
Query OK, 1 row affected (0.03 sec)
```

```
mysql> SELECT * FROM EMPVIEW;
```

EMP_NAME	EMP_NO	DEPT_NAME	DEPT_NO	DOJ
DIVYA	102	DATA ANALYST	11	2023-11-17
OMKAR	103	DEVELOPER	12	2023-11-18
PRANAV	104	CSE	13	2023-11-19

```
3 rows in set (0.00 sec)
```

e) Updation of statement

Syntax:

UPDATE <VIEW_NAME> SET <COLUMN NAME>=<COLUMN NAME><VIEW>
WHERE <COLUMNNAME>=VALUE;

```
mysql> UPDATE EMPVIEW SET EMP_NAME ='KAVI' WHERE EMP_NAME='PRANAV';
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> SELECT * FROM EMPVIEW;
```

EMP_NAME	EMP_NO	DEPT_NAME	DEPT_NO	DOJ
DIVYA	102	DATA ANALYST	11	2023-11-17
OMKAR	103	DEVELOPER	12	2023-11-18
KAVI	104	CSE	13	2023-11-19

```
3 rows in set (0.00 sec)
```

f) Drop the view name by

EMPVIEW Syntax:

DROP VIEW<VIEW_NAME>

```
mysql> DROP VIEW EMPVIEW;  
Query OK, 0 rows affected (0.02 sec)  
  
mysql> SELECT * FROM EMPVIEW;  
ERROR 1146 (42S02): Table 'employee.empview' doesn't exist  
mysql> |
```

Conclusion: In conclusion, SQL views provide a convenient and efficient way to access and analyze data stored in a database. By creating virtual tables based on specific SQL queries, users can retrieve and manipulate data without writing complex queries from scratch.

Questions:

1) What is a View in SQL Server?

A view is nothing more than a saved SQL query. A view can also be considered as a virtual table. So, we can think of a view either as a compiled SQL query or a virtual table.

2) How many types of views are there in SQL Server?

We can create the view in two ways those are

1. Simple view and Updatable views
2. Complex view and non-updatable views.

3) What is a simple view or Updatable view?

1. The view which is created basing on the columns of a single table is known as the simple view.
2. We can perform all DML operations on a simple view so that a simple view is also called an updatable view or dynamic view.

4) What is a complex View in SQL Server?

1. When we create a view on more than 1 table then it is known as the complex view.
2. On a complex view, we cannot perform DML operations so that a complex view is also called a non-updatable or static view.

5) Can we create a view based on other views?

Yes, we can create a view based on other views. Usually, we create views based on tables, but it is also possible to create views based on views.

Name & Sign of Course Teacher
Mr. Vinit Kakde