

# Dawood University of Engineering and Technology Karachi-74800

## Department of Computer Science

### Database Systems

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### LAB 09 SQL Views

#### OBJECTIVE(S)

- Learn about SQL views.

#### SQL VIEWS

In SQL, a view is a virtual table or logical table based on the result set of an SQL statement. Since a database view is like a database table consisting of rows and columns, we can query data against it. The database system stores database views as a SQL SELECT statement. When the actual data of the table changes, the view mirrors that change as well.

#### Advantages of SQL Views

**Simplicity** – A database view allows us to simplify complex queries. Through a database view, we only must use simple SQL statements instead of complex ones with many joins. We can use a database view to hide the complexity of underlying tables from the end-users and external applications.

**Security** – Views can be made accessible to users while the underlying tables are not directly accessible. This allows the DBA to give users only the data they need while protecting other data in the same table.

**Flexibility** – Queries of views may not change when underlying tables change.

#### Disadvantages of SQL Views

**Performance** – Querying from the database view takes more time than directly querying from the table especially if the view is created based on other views.

**Table dependency** – We create a view based on the underlying tables of the database. Whenever we change the structure of those tables that the view is associated with, we have to change the view as well.

#### Task: Difference between Temporary Tables and SQL Views?

## CREATING VIEWS

To create a view in a database, we use the **CREATE VIEW** statement. Views can be created from a single table, multiple tables, or from another view.

- **CREATE VIEW** view\_name **AS**  
    **SELECT** col\_name(s) **FROM** tb\_name  
    [*ADDITIONAL CLAUSES*];
- **CREATE VIEW** view\_name **AS**  
    **SELECT** col\_name(s) **FROM** another\_view\_name  
    **WHERE** condition(s);

### Example:

```
CREATE VIEW hods AS
    SELECT CONCAT (fname, " ", lname) AS Name,
        Designation, Email, Extension FROM
        facultyWHERE designation= "HOD";
```

### TASK

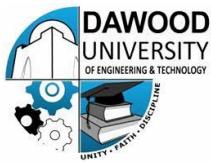
- Create a view StudentView having three columns: student's full name, department name, and GPA. Show the structure of the view.
- Display a list of all the students having GPA greater than 3.0.
- Insert a new record in the student table. Also, ensure that the student has a GPA.
- Display all the records in Student, and StudentView.

In the above example, if we wish to enter a new record in the view *hods* where the designation does not match "HOD", then MySQL will reject the insert.

## REMOVING VIEWS

A view table can also be deleted. The command to delete a view is:

- **DROP VIEW (IF EXISTS)** view\_name;



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#### **Lab Task**

Perform task.

#### **SUBMISSION GUIDELINES**

- Implement the tasks in the MySQL Workbench tool.
- Place all the tasks in a folder labeled with Roll No and Lab No. e.g. '24F-BSCSxxx\_Lab09'.
- Submit the zip file at Google Classroom.
- 100% policies for plagiarism