**CTE vs VIEW vs Temp table**

**CTE**

Common table expression is a temporary result set which is defined using WITH.

It exists only during query execution (hence its not stored permanently).

Reusability - only inside that query(file) we can resue it using UNION, JOIN but it is reusable inside one SQL statement .

**✅ Example 1: Reuse with UNION (still one statement)**

WITH EmpCTE AS (

SELECT emp\_id, name, salary

FROM Employees

)

SELECT \* FROM EmpCTE WHERE salary > 50000

UNION

SELECT \* FROM EmpCTE WHERE salary < 40000;

👉 This is **one single SQL statement**.  
We reused EmpCTE **two times** before the semicolon.

**✅ Example 2: Reuse with JOIN (still one statement)**

WITH EmpCTE AS (

SELECT emp\_id, name, salary

FROM Employees

)

SELECT e1.name, e2.name

FROM EmpCTE e1

JOIN EmpCTE e2 ON e1.salary < e2.salary;

👉 Again, **one SQL statement**.  
Here EmpCTE is reused twice (aliased as e1 and e2).

**❌ Example 3: Different SQL statements**

-- Statement 1

WITH EmpCTE AS (

SELECT emp\_id, name, salary

FROM Employees

)

SELECT \* FROM EmpCTE WHERE salary > 50000;

-- Statement 2 (new statement)

SELECT \* FROM EmpCTE; -- ❌ Error: CTE doesn’t exist anymore

👉 The second query is a **new SQL statement**.  
Since a CTE only lives during **one statement**, it’s gone.

**Temp table**

a temporary table is stored in tempdb(session based).

Scope is session-based so it exists until session ends or we can manually drop it.

You can insert/update/delete data in it like a normal table.

Reusability- yes, within session.

**Example:**

-- Create temp table

CREATE TEMPORARY TABLE TempHighSalary (

emp\_id INT,

name VARCHAR(50),

salary DECIMAL(10,2)

);

-- Insert data

INSERT INTO TempHighSalary

SELECT emp\_id, name, salary

FROM Employees

WHERE salary > 50000;

-- Use it

SELECT \* FROM TempHighSalary;

-- Drop it

DROP TEMPORARY TABLE TempHighSalary;

**Here, the table exists for your session only.**

VIEW

A view is a stored query which is saved in database permanently.

Acts like a virtual table (no data stored, only query is stored)

Other queries can reuse it.

**Example:**

-- Create view

CREATE VIEW HighSalaryEmployees AS

SELECT emp\_id, name, salary

FROM Employees

WHERE salary > 50000;

-- Use it

SELECT \* FROM HighSalaryEmployees;

**Here, HighSalaryEmployees view is permanent until dropped.**