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| **CTE** | **Temp Table** | **View** |
| It is used to store the result of a complex sub-query on temporary bases. | It is also used to store the result of query on temporary bases. | **A view is a stored SQL query** that is  executed each time you reference it in  another query. |
| Its life is limited to the current query. It is defined by using WITH statement. | Its life is limited to the current session. | Permanent object in the database,  accessible by all users with proper  permissions. |
| It mainly used for recursive call. | It does not support recursive. | It does not support recursive. |
| A CTE is a named temporary result set that you can reference within a SELECT, INSERT, UPDATE, or DELETE statement. | Temporary tables are also temporary result sets that are stored in the tempdb system database. | Views are not temporary. They are persiste  -nt database objects designed for query  Encapsulation and reuse. |
| CTEs are not physically stored on disk. | Temporary tables are physically stored on disk, and you can create, alter or drop them explicitly. | Views are not physically stored on disk.  They can dynamically executed at runtime. |
| This means that you cannot create, alter or drop CTEs explicitly. | You can create, alter or drop them explicitly. | You can update, insert or delete data direct  -ly through the view if it maps to a single  Table without complex joins or aggregate  -ons. |
| CTEs are only accessible within the query that defines them. | Temporary tables can be accessed by multiple queries within the same batch. | Views can be accessed by multiple queries.  A view is a reusable, predefined SQL  Query that behaves like a virtual table. |

**1.CTE**

Syntax:

WITH cte\_name as (

Select columns from table where condition

)

Select \* from cte\_name;

Usage:

Simplifies complex queries by breaking them into smaller, more readable parts.

Persistence: Not stored in the database.

2. Temporary table

Syntax:

Create table #temp\_table (

Column\_name datatype

);

Insert into #temp\_table values (…);

Select \* from #temp\_table;

Usage:

* Staging data for complex transformations or calculations.
* Storing intermediate results for use across multiple queries in the session.

Persistence: Automatically deleted at the end of the session or when explicitly dropped.

3. View

Syntax:

Create view view\_name as

Select columns from table where condition;

Usage:

Encapsulates complex queries for reuse and abstraction.

Provides a security layer by limiting access to specific columns or rows.