



LEARN SQL

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# Common Table Expression

## WHAT'S A CTE?

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CTEs are temporary result sets defined at the start of a query that are stored and deleted once the query has been executed. They can be referenced like any table.

### **CTE Pros:**

- Easy-to-read replacement to SUBQUERIES
- Creation of advanced AGGREGATIONS
- Can be referenced many times over in a query

## BASIC SYNTAX

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```
WITH cte_name AS (  
    SELECT col_1, col_2, ... col_n  
    FROM some_table  
    ...  
)  
  
SELECT *  
  
FROM cte_name
```



## CTE VS SUBQUERY

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### **CTEs**

- More readable and organized
- Independent of the main query so they can be reused in other queries
- Can be used multiple times in the same query

### **SUBQUERYs** – Query nested in main query

- Tend to add unneeded length to the overall query
- Can make it harder to follow the query logic
- CTEs can be used within SUBQUERYs

## SEQUENTIAL CTEs

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**Sequential CTEs** allow for a more organized method to perform advanced math and aggregations not attainable in a basic query.

In short, its a chain of CTEs referencing each other in succession.

## SEQUENTIAL CTE SYNTAX

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```
WITH cte_1_name AS (  
    SELECT col_1, SUM(col_2) AS sum  
    FROM some_table  
    GROUP BY col_1  
)  
, cte_2_name AS (  
    SELECT SUM(sum) as total  
    FROM cte_1_name  
)  
SELECT * FROM cte_2_name
```

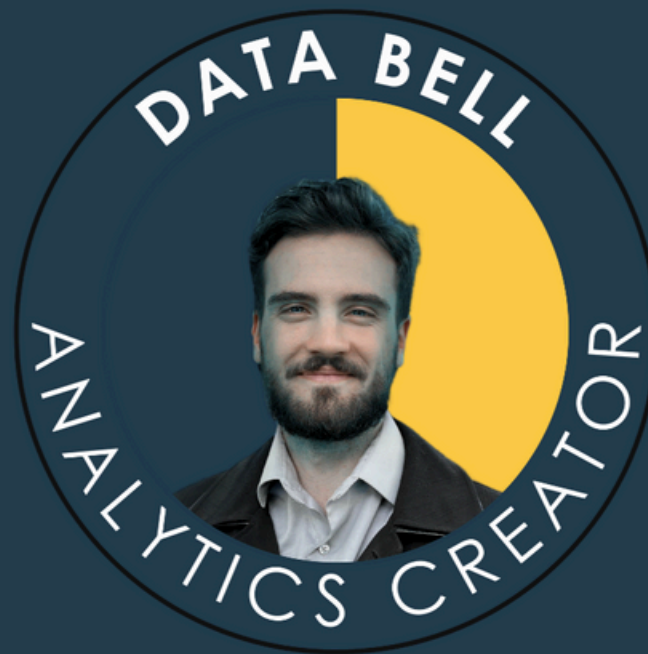


## PRO TIPS

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- Quickly run the CTE output as you by highlighting and running the CTE query
- Follow the Syntax of the Sequential CTE slide – it allows you to quickly comment out the CTE definition and run the results of the sequential CTE

```
WITH cte_1_name AS (  
    SELECT col_1, SUM(col_2) as sum FROM some_table GROUP BY col_1  
)  
-- , cte_2_name AS (  
    SELECT SUM(sum) as total FROM cte_1_name  
-- )
```



## LOOKING FOR MORE?

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