

# Common Table Expression

A Common Table Expression (CTE) is a temporary result set derived from a simple query specified in a WITH clause, which immediately precedes a SELECT or INSERT keyword. The CTE is defined only within the execution scope of a single statement. One or more CTEs can be used in a Hive [SELECT](#), [INSERT](#), [CREATE TABLE AS SELECT](#), or [CREATE VIEW AS SELECT](#) statement.



## Version

Common Table Expressions are added in Hive 0.13.0 with [HIVE-1180](#).

## Common Table Expression Syntax

```
withClause: cteClause (, cteClause)*  
cteClause: cte_name AS (select statment)
```

## Additional Grammar Rules

- The WITH clause is not supported within SubQuery Blocks
- CTEs are supported in Views, CTAS and INSERT statements.
- [Recursive Queries](#) are not supported.

## Examples

### CTE in Select Statements

```
with q1 as ( select key from src where key = '5')  
select *  
from q1;  
  
-- from style  
with q1 as (select * from src where key= '5')  
from q1  
select *;  
  
-- chaining CTEs  
with q1 as ( select key from q2 where key = '5'),  
q2 as ( select key from src where key = '5')  
select * from (select key from q1) a;  
  
-- union example  
with q1 as (select * from src where key= '5'),  
q2 as (select * from src s2 where key = '4')  
select * from q1 union all select * from q2;
```

### CTE in Views, CTAS, and Insert Statements

```

-- insert example
create table s1 like src;
with q1 as ( select key, value from src where key = '5')
from q1
insert overwrite table s1
select *;

-- ctas example
create table s2 as
with q1 as ( select key from src where key = '4')
select * from q1;

-- view example
create view v1 as
with q1 as ( select key from src where key = '5')
select * from q1;
select * from v1;

-- view example, name collision
create view v1 as
with q1 as ( select key from src where key = '5')
select * from q1;
with q1 as ( select key from src where key = '4')
select * from v1;

```

In the second View example, a query's CTE is different from the CTE used when creating the view. The result will contain rows with key = '5' because in the view's query statement the CTE defined in the view definition takes effect.

Also see this JIRA:

- [HIVE-1180](#) Support Common Table Expressions (CTEs) in Hive