

Introduction to T-SQL Queries – Module 7

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Module 7:

Subqueries and Common Table Expressions

IN Subquery

- Use a query to generate a list for the WHERE clause

```
SELECT <column list>  
FROM <schema>.<table1>  
WHERE <col> IN (SELECT <col> FROM <schema>.<table2>)
```

```
SELECT <column list>  
FROM <schema>.<table1>  
WHERE <col> NOT IN (SELECT <col> FROM <schema>.<table2>)
```

DEMO: IN Subquery

Lab

- Complete Module 7 Lab 1

Correlated subquery

- Typically in the SELECT list
- Pull a scalar or single value into a query
- Inner query can see outer query
- Only one column allowed in the subquery
- Often used to separate logic from outer query

Correlated subquery

CustID	OrderID	Amt
1	101	5
2	102	10
1	103	70
3	104	30
2	105	90
1	106	15

```
SELECT
    CustID, OrderID, Amt
FROM Orders AS Ord;
```

CustID	OrderID	Amt	AvgAmt
1	101	5	30
2	102	10	50
1	103	70	30
3	104	30	30
2	105	90	50
1	106	15	30

```
SELECT
    CustID, OrderID, Amt,
    (SELECT AVG(AMT)
     FROM Orders
     WHERE CustID = Ord.CustID ) AS AvgAmt
FROM Orders AS Ord;
```

DEMO: Correlated Subquery

Lab

- Complete Module 7 Lab 2

Derived table

- Subquery in the FROM clause
- Also used to separate the logic
- Join to the subquery
- Outer query can see the columns in the SELECT list
- Often nested

Common table expression (CTE)

- Similar to derived table
- Defined up front
- No nesting, but one CTE can use other CTEs
- Also used to separate logic
- Previous statement MUST end with ;

DEMO: Derived tables and CTEs

Lab

- Complete Module 7 Lab 3