

Scalar Subqueries in SQL: Takeaways

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Syntax

- Writing a subquery by enclosing a query in parentheses nested inside another query: SELECT case

```
SELECT AGGREGATE_FUNCTION(column_1),  
      (SELECT value  
       FROM table_2  
       WHERE condition) AS column_2,  
      column_3, ...  
FROM table_1;
```

- Writing a subquery by enclosing a query in parentheses nested inside another query: WHERE case

```
SELECT column_1, column_2, column_3, ...  
FROM table_1  
WHERE column operator (SELECT value  
                       FROM table_2  
                       WHERE condition);
```

- Writing a subquery by enclosing a query in parentheses nested inside another query: HAVING case

```
SELECT column_1, SUM(column_2), column_3, ...  
FROM table_1  
GROUP BY column_1, column_3  
HAVING SUM(column_2) operator (SELECT value  
                               FROM table_2  
                               WHERE condition);
```

- Using a subquery in an arithmetic operation

```
SELECT billing_country,  
      ROUND(COUNT(*) * 100.0 /  
            (SELECT COUNT(*)  
             FROM invoice), 2) AS sales_prop  
FROM invoice  
GROUP BY billing_country  
ORDER BY sales_prop DESC  
LIMIT 5;
```

- Filtering rows with a subquery

```
SELECT COUNT(*) AS rows_tally  
FROM invoice  
WHERE total > (SELECT AVG(total)  
              FROM invoice);
```

- Filtering aggregate results with a subquery

```
SELECT customer_id, AVG(total) AS customer_avg
  FROM invoice
 GROUP BY customer_id
HAVING AVG(total) > (SELECT AVG(total) AS customer5_avg
                     FROM invoice
                     WHERE customer_id = 5);
```

Concepts

- A subquery is a query nested inside another query and is always enclosed in parentheses `()`.
- An inner query is a subquery.
- An outer query is a query that contains a subquery.

Resources

- [Subquery syntax](#)