

# 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, column_2, column_3, ...
FROM table_1
WHERE column 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](#)