# MySQL Sub-Query

* Non-Correlated Subquery
* Correlated Subquery
* Subquery in FROM
* Subquery in SELECT
* Nested Subquery

## Sample Tables

### customers

| **customer\_id** | **name** | **city** |
| --- | --- | --- |
| 1 | Alice | Delhi |
| 2 | Bob | Mumbai |
| 3 | Charlie | Bangalore |
| 4 | David | Hyderabad |
| 5 | Eve | Chennai |

### orders

| **order\_id** | **customer\_id** | **order\_date** |
| --- | --- | --- |
| 1 | 1 | 2025-07-01 |
| 2 | 2 | 2025-07-02 |
| 3 | 3 | 2025-07-03 |
| 4 | 1 | 2025-07-04 |

### products

| **product\_id** | **name** | **price** |
| --- | --- | --- |
| 1 | Laptop | 55000 |
| 2 | Mouse | 500 |
| 3 | Monitor | 9000 |
| 4 | USB Cable | 150 |

### order\_details

| **order\_id** | **product\_id** | **quantity** |
| --- | --- | --- |
| 1 | 1 | 1 |
| 1 | 2 | 2 |
| 2 | 3 | 1 |
| 3 | 1 | 1 |
| 4 | 4 | 3 |

## 1. ****Non-Correlated Subquery****

### Query: Get products with price greater than ****average price****

SELECT name, price

FROM products

WHERE price > (SELECT AVG(price) FROM products);

### Output:

| **name** | **price** |
| --- | --- |
| Laptop | 55000 |
| Monitor | 9000 |

## 2. ****Correlated Subquery****

### Query: List customers who placed ****more than 1 order****

SELECT name

FROM customers c

WHERE 1 < (

SELECT COUNT(\*)

FROM orders o

WHERE o.customer\_id = c.customer\_id

);

### Output:

| **name** |
| --- |
| Alice |

## 3. ****Subquery in FROM Clause (Inline View)****

### Query: Get average quantity per order

SELECT order\_id, AVG(quantity) AS avg\_qty

FROM (

SELECT order\_id, quantity

FROM order\_details

) AS temp

GROUP BY order\_id;

### Output:

| **order\_id** | **avg\_qty** |
| --- | --- |
| 1 | 1.5 |
| 2 | 1.0 |
| 3 | 1.0 |
| 4 | 3.0 |

## 4. ****Subquery in SELECT Clause****

### Query: Show each product with total quantity sold

SELECT name,

(SELECT SUM(quantity)

FROM order\_details od

WHERE od.product\_id = p.product\_id) AS total\_quantity

FROM products p;

### Output:

| **name** | **total\_quantity** |
| --- | --- |
| Laptop | 2 |
| Mouse | 2 |
| Monitor | 1 |
| USB Cable | 3 |

## 5. ****Nested Subquery****

### Query: Get products with ****highest price****

SELECT name, price

FROM products

WHERE price = (

SELECT MAX(price)

FROM (

SELECT price FROM products

) AS temp

);

### Output:

| **name** | **price** |
| --- | --- |
| Laptop | 55000 |

Summary:

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Depends on Outer Query? | Executed For Each Row? | Example |
| Non-Correlated | ❌ No | ❌ No | price > (SELECT AVG(...)) |
| Correlated | ✅ Yes | ✅ Yes | SELECT ... WHERE x IN (SELECT ... WHERE y = x) |
| Subquery in SELECT | ✅ (sometimes) | ✅ per row | SELECT ..., (SELECT ...) |
| Subquery in FROM | ❌ No | ❌ No | FROM (SELECT ...) |
| Nested Subqueries | ❌ or ✅ | ✅ if correlated | SELECT ... (SELECT ... (SELECT ...)) |