

**POLYTECHNIC UNIVERSITY OF THE PHILIPPINES  
COLLEGE OF COMPUTER AND INFORMATION SCIENCES**



# SQL Subqueries

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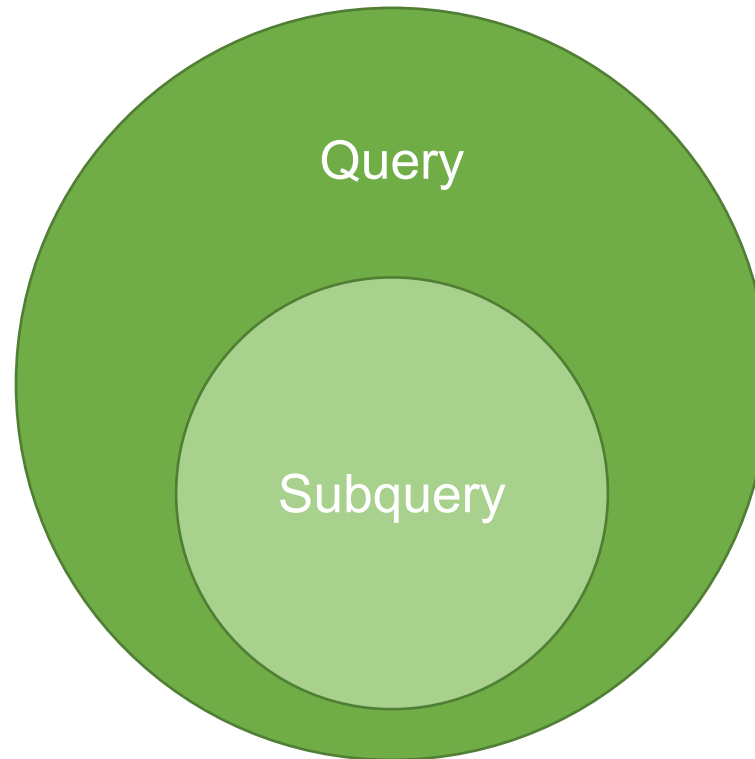


# Subqueries



# Subqueries

A subquery is a query that is nested inside another query.



# Subqueries

You want to find the names of customers who have placed an order in '2023' and later.

customer_id	name	email	phone	membership_level
1	Juan Dela Cruz	<a href="mailto:juandelacruz@gmail.com">juandelacruz@gmail.com</a>	09171234567	Silver
2	Maria Santos	<a href="mailto:mariasantos@yahoo.com">mariasantos@yahoo.com</a>	09182345678	Gold
3	Jose Garcia	<a href="mailto:josegarcia@gmail.com">josegarcia@gmail.com</a>	09193456789	Silver
4	Anna Reyes	<a href="mailto:annareyes@yahoo.com">annareyes@yahoo.com</a>	09204567890	Silver
5	Pedro Hernandez	<a href="mailto:pedrohernandez@gmail.com">pedrohernandez@gmail.com</a>	09215678901	Gold
6	Miguel Rodriguez	<a href="mailto:miguelrodriguez@gmail.com">miguelrodriguez@gmail.com</a>	09226789012	Silver
7	Luisa Santiago	<a href="mailto:luisasantiago@yahoo.com">luisasantiago@yahoo.com</a>	09237890123	Silver
8	Ramon Cruz	<a href="mailto:ramoncruz@yahoo.com">ramoncruz@yahoo.com</a>	09248901234	Gold
9	Carmen Garcia	<a href="mailto:carmengarcia@yahoo.com">carmengarcia@yahoo.com</a>	09259012345	Silver
10	Antonio Reyes	<a href="mailto:antonioreyes@gmail.com">antonioreyes@gmail.com</a>	09260123456	Silver

order_id	customer_id	order_date	total_amount
1	1	2020-01-01	100.00
2	2	2021-06-02	200.00
3	4	2021-06-03	300.00
4	4	2022-05-04	400.00
5	2	2022-07-05	500.00
6	6	2023-01-06	600.00
7	6	2023-02-07	700.00
8	8	2023-02-08	800.00
9	10	2023-02-09	900.00
10	10	2023-02-10	1000.00

# Subquery

```
SELECT name  
FROM customers  
WHERE customer_id IN (  
    SELECT customer_id  
    FROM orders  
    WHERE order_date >= '2023-01-01'  
);
```

Subquery

Query



# Subqueries



Subquery can be used with the SELECT, UPDATE, INSERT, and DELETE Commands.



# Subqueries - Select

Find the names of all customers who have placed an order:

```
SELECT name  
FROM customers  
WHERE customer_id IN (  
    SELECT customer_id  
    FROM orders  
);
```

# Subqueries - Select

Find the total number of orders placed by each customer:

```
SELECT name, (  
    SELECT COUNT(*)  
    FROM orders o  
    WHERE o.customer_id = c.customer_id  
) AS order_count  
FROM customers c;
```



# Subqueries - Update

Update the membership\_level for all customers who have placed an order after January 5, 2020:

```
UPDATE customers
SET membership_level = 'Gold'
WHERE customer_id IN (
    SELECT customer_id
    FROM orders
    WHERE order_date > '2020-01-05'
);
```

# Subqueries - Insert

Insert a new order for a customer whose email address is "pedrohernandez@gmail.com":

```
INSERT INTO orders (customer_id, order_date, total_amount)
VALUES (
    (SELECT customer_id FROM customers WHERE email =
'pedrohernandez@gmail.com'),
    '2023-02-28',
    1000.00
);
```

# Subqueries - Insert

Delete all orders placed by customers whose email address is "annareyes@yahoo.com":

```
DELETE FROM orders
WHERE customer_id IN (
    SELECT id
    FROM customers
    WHERE email = 'annareyes@yahoo.com'
);
```



# Exercise



1. Find the average total amount of orders placed by customers who have placed at least one order.
  2. Update the total amount and add 50.00 for all orders placed by customers who have an email address that contains the word "gmail".
  3. Delete all customers who have not placed an order.
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