Example of Subqueries

Syntax with examples for different ways a subquery can be used

Subqueries using Single Table

General Form:

SELECT columnList(s)

FROM Table_name

WHERE column_name OPERATOR (SELECT columnList(s) FROM Table_name WHERE [condition]);

Example: Let us assume there is a table named Customer with attributes

Customer (id INT, first_name VARCHAR (30), last_name VARCHAR (30), gender VARCHAR (6), branch_id INT);

id	first_name	last_name	gender	branch_id
1	anchit	khanna	male	2
2	aayesha	khan	female	3
3	kartik	sharma	male	1
4	vaishali	arora	female	3
5	aasdeep	singh	male	2

Table 1 Customer

Question: Write a SQL query to get the first name and last name of all male employees?

Solution:

SELECT first_name, last_name

FROM Customer

WHERE id IN (SELECT id FROM customer WHERE gender = "male");

output:

id	first_name	last_name
1	anchit	khanna
3	kartik	sharma
5	aasdeep	singh

Table 2

Subqueries using Different Table

General Form:

SELECT columnList(s)

FROM Table_name1

WHERE column_name OPERATOR (SELECT columnList(s) FROM Table_name2 WHERE [condition]);

Example: Let us assume there is a table name Customer and Branch with attributes

Customer (id INT, first_name VARCHAR (30), last_name VARCHAR (30), gender VARCHAR (6), branch_id INT);

id	first_name	last_name	gender	branch_id
1	anchit	khanna	male	2
2	aayesha	khan	female	3
3	kartik	sharma	male	1
4	vaishali	arora	female	3
5	aasdeep	singh	male	2

Table 3 Customer

Branch (id INT, address VARCHAR (50));

branch_id	address
1	delhi
2	chennai
3	mumbai

Table 4 Branch

Question: Find the customer(s) who has an account in the Chennai branch?

Solution:

SELECT *

FROM Customer

Where branch_id IN (SELECT id FROM branch WHERE address = 'chennai');

Output:

id	first_name	last_name	gender	branch_id
1	anchit	khanna	male	2
5	aasdeep	singh	male	2

Table 5

Single value subqueries

General Form:

SELECT columnList(s)

FROM Table_name

WHERE column_name OPERATOR (SELECT FUNCTION(columnList(s)) FROM Table_name WHERE [condition]);

Example:

Let us assume a table name account with attributes:

Account(customer_id INT, card_id INT, balance BIGINT);

customer_id	card_id	balance
1	12345	10000
2	56789	20000
3	89123	30000

Table 6 Account

Question: Find the accounts whose balance is greater than the average balance of all the accounts?

Solution:

SELECT * FROM Account

WHERE balance > (SELECT AVG(balance) FROM Account);

Output:

customer_id	card_id	balance
3	89123	30000

Table 7

Derived Subqueries

General Form:

SELECT columnLists(s)

FROM (SELECT columnLists(s) FROM table_name WHERE [condition]) as new_table_name;

Example: Let us consider a table name insurance with attributes

Insurance(product_id INT, product_name VARCHAR(30), product_type VARCHAR(10), year_of_launch INT, product_value INT);

product_id	product_name	product_type	year_of_launch	product_value
1	alexa	car	2012	10000
2	siri	health	2018	50000
3	google	home	2006	20000

Table 8 insurance

Question: Find the maximum value home insurance provide by bank?

Solution:

SELECT max(product_value)

FROM (SELECT * FROM Insurance WHERE product_type = 'health') as ti;

Output: 50000.