SQL Subqueries

A Query Within A Query

SUBQUERY RETURNING A COLUMN

Find customer ids and total charges for all <customers who have an internet service type of 3. >

customer_id	total_charges

SUBQUERY RETURNING A COLUMN

Step 1

Write/run the INNER Query

Customers with internet service type = 3

How many rows are returned?

Step 2

Write the OUTER query.

Query customer_id and total_charges for 2 customer_id's that are returned in the above query.

Step 3

Insert the INNER query into the OUTER query.

Replace the 2 customer_ids with the INNER query.

How many rows are returned? It should match Step 1 rows.

Find customer ids and total charges for all customers who have an internet service type of 3.

GOAL

FIND CUSTOMERS WHO HAVE INTERNET SERVICE TYPE OF 3

INNER QUERY

```
SELECT customer_id
FROM customer_subscriptions
WHERE internet_service_type_id = 3;
```

customer_id
0023-UYUPN
0030-FNXPP
0031-PVLZI
0040-HALCW
0042-JVWOJ
0042-RLHYP
0048-PIHNL
0052-YNYOT
0057-QBUQH

What is returned?

1526 Rows, 1 Column (a list-like object)

GOAL

FIND TOTAL CHARGES FOR A SAMPLE OF 2 SPECIFIC CUSTOMER ID'S

OUTER QUERY

```
SELECT customer_id,
            total_charges
FROM customer_payments
WHERE customer_id IN
            (0023-UYUPN, 0030-FNXPP)
```

customer_id	total_charges
0023-UYUPN	1306.3
0030-FNXPP	57.2

What is returned?

2 Rows

GOAL

FIND CUSTOMER IDS AND TOTAL CHARGES FOR ALL CUSTOMERS WITH INTERNET SERVICE TYPE OF 3

FULL QUERY

```
SELECT customer_id,
       total_charges
FROM customer_payments
WHERE customer_id IN
      (SELECT customer_id
       FROM customer_subscriptions
       WHERE internet_service_type_id = 3);
```

customer_id	total_charges
0002-ORFBO	593.3
0003-MKNFE	542.4
0004-TLHLJ	280.85
0011-IGKFF	1237.85
0013-EXCHZ	267.4
0013-MHZWF	571.45
0013-SMEOE	7904.25
0014-BMAQU	5377.8
0015-UOCOJ	340.35
0016-QLJIS	5957.9

What is returned?

1526 Rows, 2 Columns

SUBQUERY RETURNING A SCALAR

Find customer ids, monthly charges and total charges for all <customers whose total charges are greater than the average.>

customer_id	monthly_charges	total_charges

SUBQUERY RETURNING A SCALAR

Step 1

Write/run the INNER Query

Find the average total_charges.

Step 2

Write the OUTER query.

Query customer_id, monthly_charges and total_charges where total_charges is larger than the value returned.

Step 3

Insert the INNER query into the OUTER query.

Query customer_id, monthly_charges and total_charges filtering total_charges using inner query.

Find customer ids, monthly charges and total charges for all <customers whose total charges are greater than the average.>

SUBQUERY RETURNING A TABLE

Find customer_id, average charges, internet service type for all customers.

customer_id	average_charges	internet_type

SUBQUERY RETURNING A TABLE

Step 1

Write/run the INNER Query

Query customer_id, average total_charges.

Step 2

Write the OUTER query.

Join customer_payments table with subscriptions table.

Join subscriptions table with internet service types table.

Step 3

Insert the INNER query into the OUTER query.

Substitute the from table with the INNER query.

Find customer_id, average charges, internet service type for all customers.