

SQL Exercise: Subquery Inside SELECT - Step 2

Learn / Courses / Joining Data In SQL

← Course Outline →

Daily XP 2065

Exercise

Subquery inside SELECT

As explored in the video, there are often multiple ways to produce the same result in SQL. You saw that subqueries can provide an alternative to joins to obtain the same result.

In this exercise, you'll go further in exploring how some queries can be written using either a join or a subquery.

In Step 1, you'll begin with a `LEFT JOIN` combined with a `GROUP BY` to select the nine countries with the most cities appearing in the `cities` table, along with the counts of these cities. In Step 2, you'll write a query that returns the same result as the join, but leveraging a nested query instead.

Instructions 2/2 50 XP ✓ 2

- Complete the subquery to return a result equivalent to your `LEFT JOIN`, counting all cities in the `cities` table as `cities_num`.
- Use the `WHERE` clause to enable the correct country codes to be matched in the `cities` and `countries` columns.

Take Hint (-15 XP)

query.sql

```
1 SELECT countries.name AS country,
2 -- Subquery that provides the count of cities
3 (SELECT
4   FROM cities
5   WHERE ___ ) AS cities_num
6 FROM countries
7 ORDER BY cities_num DESC, country
8 LIMIT 9;
```

Run Code Submit Answer

query result

country	cities_num
China	36
India	18
Japan	11
Brazil	10
Pakistan	9
United States	9
Indonesia	7
Russian Federation	7
South Korea	7

Showing 9 out of 9 rows

Question: Complete the subquery to return a result equivalent to your `LEFT JOIN`, counting all cities in the 'cities' table as 'cities_num'. Use the `WHERE` clause to enable the correct country codes to be matched in the 'cities' and 'countries' columns.

Correct Answer:

SQL Query:

```
SELECT countries.name AS country,
       (SELECT COUNT(*)
        FROM cities
        WHERE country_code = countries.country_code) AS cities_num
FROM countries
ORDER BY cities_num DESC, country
LIMIT 9;
```

```
WHERE cities.country_code = countries.code) AS cities_num  
FROM countries  
ORDER BY cities_num DESC, country ASC  
LIMIT 9;
```

Explanation:

- The query uses a subquery to count the number of cities in each country. This count is aliased as 'cities_num'.
- The subquery selects all rows from the 'cities' table and counts them for each 'country_code' that matches the 'code' from the 'countries' table.
- The outer query selects the country name and the result of the subquery.
- The 'ORDER BY cities_num DESC, country ASC' clause sorts the results by the number of cities in descending order and country names in ascending order.
- The 'LIMIT 9' clause restricts the output to the top nine records.