

## Self Join Query: Filtering by Year Difference

This document demonstrates the use of a self join to compare population sizes of countries between two specific years (2010 and 2015), ensuring the years are exactly five years apart by adding an additional filter to the WHERE clause.

Below is the instruction and query setup along with query results:

Learn / Courses / Joining Data In SQL

Exercise

### Comparing a country to itself

Self joins are very useful for comparing data from one part of a table with another part of the same table. Suppose you are interested in finding out how much the populations for each country changed from 2010 to 2015. You can visualize this change by performing a self join.

In this exercise, you'll work to answer this question by joining the `populations` table with itself. Recall that, with self joins, tables must be aliased. Use this as an opportunity to practice your aliasing!

Since you'll be joining the `populations` table to itself, you can alias `populations` first as `p1` and again as `p2`. This is good practice whenever you are aliasing tables with the same first letter.

Instructions 2/2

50 XP

2

- Since you want to compare records from 2010 and 2015, eliminate unwanted records by extending the `WHERE` statement to include only records where the `p1.year` matches `p2.year - 5`.

Take Hint (-15 XP)

query.sql

```
1 SELECT
2     p1.country_code,
3     p1.size AS size2010,
4     p2.size AS size2015
5 FROM populations AS p1
6 INNER JOIN populations AS p2
7 ON p1.country_code = p2.country_code
8 WHERE p1.year = 2010
9 -- Filter such that p1.year is always five years before p2.year
10
```

Run Code

Submit Answer

query result

populations

| country_code | size2010 | size2015 |
|--------------|----------|----------|
| ABW          | 101597   | 103889   |
| ABW          | 101597   | 101597   |
| ABW          | 103889   | 103889   |
| ABW          | 103889   | 101597   |
| AFG          | 27962208 | 32526562 |
| AFG          | 27962208 | 27962208 |
| AFG          | 32526562 | 32526562 |
| AFG          | 32526562 | 27962208 |
| AFG          | 32526562 | 32526562 |

Showing 100 out of 868 rows

## -- SQL Query Using Self Join with Year Difference Filter

```
SELECT
    p1.country_code,
```

```
p1.size AS size2010,  
p2.size AS size2015  
FROM populations AS p1  
INNER JOIN populations AS p2  
ON p1.country_code = p2.country_code  
WHERE p1.year = 2010  
AND p2.year = p1.year + 5;
```

Explanation: This query compares population sizes for the same country between 2010 and 2015 by:

1. **\*\*Self Join\*\***: Joins the 'populations' table to itself using the 'country\_code' column.
2. **\*\*Aliases (p1 and p2)\*\***: Differentiates the two instances of the 'populations' table.
3. **\*\*SELECT Statement\*\***: Retrieves the 'country\_code', population size for 2010 (aliased as 'size2010'), and population size for 2015 (aliased as 'size2015').
4. **\*\*WHERE Clause\*\***: Ensures that:
  - Data is filtered for 2010 in the first instance (p1) and 2015 in the second instance (p2).
  - The years differ by exactly five years (`p2.year = p1.year + 5`).

This ensures accurate comparisons of population sizes across a specific time interval.