

Some Hints on Labsheet 3

November 1, 2023

8. Result: Two rows (South Africa and Central African Republic)
Hint: Use LIKE but compose pattern to compare against by concatenating "%", the region's name and "%" again. Note that SQLite uses || for string concatenation.
9. Result: Eight rows, one per region
Hint: Can MAX/MIN over computed quantities like gdp/population
10. Result: Three rows
Hint: Easy– use GROUP BY and COUNT
11. Result: One row
Hint: Easy
12. Result: Six rows, including count of 1 for Africa. Excludes regions with no countries.
Hint: Easy
13. Result: 25 rows (no country begins with 'X'), including for letter 'A' a count of 11 and countries Afghanistan and Azerbaijan.
Hint: SQLite's substr function (look it up) allows you to extract substrings of any string so substr(string, 1, 1) gives you the first letter. Use that as grouping criterion.
14. Result: Around 180 rows
Hint: Can use use multiple columns in ORDER BY e.g. ORDER BY X, Y which means order first by X value and for those with the same X order these by Y
15. Result: Two rows (Asia-Pacific and South Asia)
Hint: Use HAVING to produces groups with requisite population.
16. Result: Around 19 rows
Hint: Might be easier to use subqueries, but can use self join countries x countries, linked by shared region. For all such pairs if we restrict to pairs

where the first member of the pair is Jordan, then those countries that feature of second countries in these pairs are those we want.

17. Result: 19

Hint: As above, but we use COUNT(*) to count the number of qualifying countries rather than listed their names.

18. Result: Four including France.

Hint: Similar to Q13 (for Spain rather than Jordan), but instead of wanting all the country form the form (Spain, X) in the region, we want only those Xs with greater area than Spain's.

19. Result: Six rows including Australia

Hint: Similar to Q15 in that we want to use a countries(1) x countries(2) join to generate pairs of countries in the same region as one another. We can group by country(1) to lump each into each country's group pairs of the form (X, Y) where X is the country in question and the various Ys are those in whatever region X is located in. We can use a HAVING clause TO identify those groups/countries that have the required property (HAVING an area at least one twentieth of the region's total).

20. Result: 5 rows, including band 0 with 181 countries

Hint: Group by population/100000000

21. Result: 9900

Hint: A bit like Q14 to form pairs of countries sharing the same region as China. In this case we want the country with the smallest population.

22. Result: Many rows including Luxembourg and St Lucia

Hint: Use self join countries(1) x countries (2); use ON/WHERE conditions to restrict to pairs (X, Y) WHERE X is China and Y has a gdp/population ratio greater than China's. Might be easier using subqueries.

23. Result: China

Hint: This would be easier using subqueries. See Q25 on Sheet 4 WHERE a similar issue arise (in that case to find the youngest individual I Na table). The same approach will work here.