

Introduction to SQL Session 7 Quiz

1. Using the world.countrylanguage table, answer the following questions:

- a. How many unique languages are in the table?
 - b. Of the unique languages, how many end with the letters "ian"?
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2. Using the country table, write a SELECT statement to return the Name, Continent, Region, SurfaceArea, Population, and a column named "Density". Return the data in order of the country name.

The "Density" column is a string value that is used to indicate how crowded the country is, based on its population density.

To calculate the density, use the formula:

$\text{density} = \text{Population} / \text{SurfaceArea}$

If density is 100 or less, set Density to "Not Crowded"

If density is over 100 and less than or equal to 500, set Density to "Not too crowded"

If density is over 500 and less than or equal to 1000, set Density to "Crowded"

If density is over 1000, set Density to "Very Crowded"

Your results should look like the figure. Only the first 12 rows are shown.

	NAME	Continent	Region	SurfaceArea	Population	Density	How Crowded
▶	Afghanistan	Asia	Southern and Central Asia	652090.00	22720000	34.841816	Not Crowded
	Albania	Europe	Southern Europe	28748.00	3401200	118.310839	Not too crowded
	Algeria	Africa	Northern Africa	2381741.00	31471000	13.213443	Not Crowded
	American Samoa	Oceania	Polynesia	199.00	68000	341.708543	Not too crowded
	Andorra	Europe	Southern Europe	468.00	78000	166.666667	Not too crowded
	Angola	Africa	Central Africa	1246700.00	12878000	10.329670	Not Crowded
	Anguilla	North America	Caribbean	96.00	8000	83.333333	Not Crowded
	Antarctica	Antarctica	Antarctica	13120000.00	0	0.000000	Not Crowded
	Antigua and Barbuda	North America	Caribbean	442.00	68000	153.846154	Not too crowded
	Argentina	South America	South America	2780400.00	37032000	13.318947	Not Crowded
	Armenia	Asia	Middle East	29800.00	3520000	118.120805	Not too crowded
	Aruba	North America	Caribbean	193.00	103000	533.678756	Crowded

3. Write an SQL SELECT statement that will return the following: Name, Continent, Region, Population and percent of population for all of the countries in the world.country table that are in North America.

To calculate the percentage of population, divide the population by the sum of the population of countries that are in North America. Take that result (population/sum) and multiply by 100 to get a percentage number.

Hint: the value that you use for the denominator (the sum of the population) can be an embedded SELECT statement.

Sort in order by Region descending and by Name descending.

Your results should look like the figure. Only the first 10 rows are shown.

	NAME	Continent	Region	Population	PercentPop
▶	United States	North America	North America	278357000	57.6317
	Saint Pierre and Miquelon	North America	North America	7000	0.0014
	Greenland	North America	North America	56000	0.0116
	Canada	North America	North America	31147000	6.4487
	Bermuda	North America	North America	65000	0.0135
	Panama	North America	Central America	2856000	0.5913
	Nicaragua	North America	Central America	5074000	1.0505
	Mexico	North America	Central America	98881000	20.4726
	Honduras	North America	Central America	6485000	1.3427
	Guatemala	North America	Central America	11385000	2.3572

4. Historically, it was said "the sun never sets on the British Empire". Although the British Empire is no longer what it once was, there are still a number of countries around the world that recognize Queen Elizabeth of Britain as their Head of State.

For this SELECT you will retrieve the following data from the country table: Name, Continent, Region, HeadOfState, GovernmentForm. Select only those rows where Elisabeth II is the head of state.

You will sort the rows in order to simulate the sun rising over the countries, starting near the International Date Line (out in the Pacific Ocean). The sort order will follow the sun, from east to west, over the countries.

Sort the countries in this order, using the Continent and Region values:

Oceania/Polynesia
Oceania/Melania
Oceania/[all others]
Africa/Eastern Africa
Africa/Western Africa

Europe

North America/Caribbean

North America/Central America

North America/[all others]

[all others]

After sorting by the Continent/Region values, sort by the Name.

The figure shows all of the rows and values, in the required sort order.

Name	Continent	Region	HeadOfState	GovernmentForm
► Cook Islands	Oceania	Polynesia	Elisabeth II	Nonmetropolitan Territory of New Zealand
Niue	Oceania	Polynesia	Elisabeth II	Nonmetropolitan Territory of New Zealand
Pitcairn	Oceania	Polynesia	Elisabeth II	Dependent Territory of the UK
Tokelau	Oceania	Polynesia	Elisabeth II	Nonmetropolitan Territory of New Zealand
Tuvalu	Oceania	Polynesia	Elisabeth II	Constitutional Monarchy
Papua New Guinea	Oceania	Melanesia	Elisabeth II	Constitutional Monarchy
Solomon Islands	Oceania	Melanesia	Elisabeth II	Constitutional Monarchy
Australia	Oceania	Australia and New Zealand	Elisabeth II	Constitutional Monarchy, Federation
Christmas Island	Oceania	Australia and New Zealand	Elisabeth II	Territory of Australia
Cocos (Keeling) Islands	Oceania	Australia and New Zealand	Elisabeth II	Territory of Australia
New Zealand	Oceania	Australia and New Zealand	Elisabeth II	Constitutional Monarchy
Norfolk Island	Oceania	Australia and New Zealand	Elisabeth II	Territory of Australia
British Indian Ocean Territory	Africa	Eastern Africa	Elisabeth II	Dependent Territory of the UK
Saint Helena	Africa	Western Africa	Elisabeth II	Dependent Territory of the UK
Gibraltar	Europe	Southern Europe	Elisabeth II	Dependent Territory of the UK
United Kingdom	Europe	British Islands	Elisabeth II	Constitutional Monarchy
Anguilla	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Antigua and Barbuda	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Bahamas	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Barbados	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Cayman Islands	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Grenada	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Jamaica	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Montserrat	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Saint Kitts and Nevis	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Saint Lucia	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Saint Vincent and the Grenadines	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Turks and Caicos Islands	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Virgin Islands, British	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Belize	North America	Central America	Elisabeth II	Constitutional Monarchy
Bermuda	North America	North America	Elisabeth II	Dependent Territory of the UK
Canada	North America	North America	Elisabeth II	Constitutional Monarchy, Federation
Falkland Islands	South America	South America	Elisabeth II	Dependent Territory of the UK
Heard Island and McDonald Islands	Antarctica	Antarctica	Elisabeth II	Territory of Australia
South Georgia and the South Sandwich Islands	Antarctica	Antarctica	Elisabeth II	Dependent Territory of the UK

5. The SELECT statement shown in the figure retrieves a subset of the countries where Elisabeth II is the head of state. The data that is retrieved is shown in the figure.

Rewrite the WHERE clause so that it does not use a CASE expression. Submit the complete SELECT statement with the reworked WHERE clause.

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1 • SELECT Name, Continent, Region,
2       HeadOfState, GovernmentForm
3 FROM   country
4 WHERE
5       HeadOfState LIKE 'E1%' AND
6       1 =
7       CASE
8         WHEN Continent = 'Oceania'      AND Region NOT LIKE '%esia' THEN 1
9         WHEN Continent = 'Africa'       THEN 1
10        WHEN Continent = 'Europe'       THEN 1
11        WHEN Continent = 'North America' AND Region = 'Caribbean' THEN 1
12        WHEN Continent = 'South America' THEN 1
13      END
14 ORDER BY Continent, Name
15

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Name	Continent	Region	HeadOfState	GovernmentForm
Gibraltar	Europe	Southern Europe	Elisabeth II	Dependent Territory of the UK
United Kingdom	Europe	British Islands	Elisabeth II	Constitutional Monarchy
Anguilla	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Antigua and Barbuda	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Bahamas	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Barbados	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Cayman Islands	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Grenada	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Jamaica	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Montserrat	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Saint Kitts and Nevis	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Saint Lucia	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Saint Vincent and the Grenadines	North America	Caribbean	Elisabeth II	Constitutional Monarchy
Turks and Caicos Islands	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
Virgin Islands, British	North America	Caribbean	Elisabeth II	Dependent Territory of the UK
British Indian Ocean Territory	Africa	Eastern Africa	Elisabeth II	Dependent Territory of the UK
Saint Helena	Africa	Western Africa	Elisabeth II	Dependent Territory of the UK
Australia	Oceania	Australia and New Zealand	Elisabeth II	Constitutional Monarchy, Federation
Christmas Island	Oceania	Australia and New Zealand	Elisabeth II	Territory of Australia
Cocos (Keeling) Islands	Oceania	Australia and New Zealand	Elisabeth II	Territory of Australia
New Zealand	Oceania	Australia and New Zealand	Elisabeth II	Constitutional Monarchy
Norfolk Island	Oceania	Australia and New Zealand	Elisabeth II	Territory of Australia
Falkland Islands	South America	South America	Elisabeth II	Dependent Territory of the UK