



SQL Queries Lab

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Outline

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- Problem Statement
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- Tasks 1-10
- Information for Laboratory Reports



Problem Statement

In this Lab Exercise you will construct a number of SQL queries for the given database. The purpose of this lab is to introduce the topic of DB querying and provide you with some methods that will be used in the following labs. You will work with basic SQL queries on a single database table, and use aggregate functions to get summary data from the table.



Create a Table

- Use *Lab2-CreateTable.sql* script to create a table you will work with during the lab. You can use the existing database (e.g. the one you have created on Lab1) or create a new one.
- Run the script. Check that the table has been created and filled with data.

Task 1

- List the names of all countries in the Middle East, sorted by the 2004 population count in descending order.

Results		Messages
	name	
1	Iran	
2	Turkey	
3	Saudi Arabia	
4	Iraq	
5	Yemen	
6	Israel	
7	Jordan	
8	Georgia	
9	Lebanon	
10	Oman	
11	United Arab Emirates	
12	Kuwait	
13	Qatar	
14	Cyprus	
15	Bahrain	



Task 2

- List the names, area and GDP of any European countries with a 2009 population of more than 10,000,000.
 - There are multiple ways of interpreting the 'any European country' part of this problem; please specify which one you chose and why when handing in your Lab Report.

Results		Messages	
	name	area	gdp
1	Belgium	30510	0,013
2	Czech Republic	78703	0,039
3	France	547030	0,007
4	Germany	356910	0,013
5	Greece	131940	0,028
6	Italy	301230	-0,007
7	Netherlands	37330	0,018
8	Poland	312680	0,048
9	Portugal	92080	0,002
10	Romania	237500	0,076
11	Russia	17125187	0,054
12	Spain	504750	0,011
13	Ukraine	603700	0,021
14	United Kingdom	244820	0,007



Task 3

- List the names and regions of countries with an area larger than 2,000,000 but smaller than 5,000,000, sorted in descending order by 2002 GDP.
 - Note that area does not change from year to year; do not overcomplicate the sorting.

Results			Messages		
	name	region			
1	Kazakhstan	Commonwealth of Independent States - Central Asi...			
2	Sudan	Africa			
3	India	Asia			
4	Algeria	Africa			
5	Argentina	South America			
6	Greenland	Arctic Region			
7	Zaire	Africa			



Task 4

- List the regions (without duplicates) of all countries whose names start with 'S' (uppercase).

	region
1	Africa
2	Asia
3	Central America and the Caribbean
4	Ethnic Groups in Eastern Europe, Europe
5	Europe
6	Middle East
7	Oceania
8	South America
9	Southeast Asia



Task 5

- Insert a new row with country name *"SQLvania"*, with year = 2004, area = 4707 and population = 65550.
- Check with SELECT.

(1 row(s) affected)

Results		Messages				
	name	year	region	area	population	gdp
1	SQLvania	2004	NULL	4707	65550	NULL

Task 6

- Add 15,000 to the 2007 population of all countries with an area less than 10,000.
- Check with SELECT before and after your changes.

	name	year	region	area	population	gdp
1	American Samoa	2007	Oceania	199	57663	0.03
2	Andorra	2007	Europe	450	71822	0.035
3	Anguilla	2007	Central America and the Caribbean	91	13677	0.102
4	Aruba	2007	Central America and the Caribbean	193	100018	0.024
5	Bahrain	2007	Middle East	620	708573	0.078
6	Barbados	2007	Central America and the Caribbean	430	280946	0.035
7	Bermuda	2007	North America	50	66163	0.046
8	Cape Verde	2007	World	4030	423613	0.055
9	Cayman Islands	2007	Central America and the Caribbean	260	46600	0.009
10	Chad	2007	Africa	1	9885661	0.01
11	Cocos (Keeling) Islands	2007	Southeast Asia	14	596	NULL
12	Comoros	2007	Africa	2170	711417	0.03
13	Cook Islands	2007	Oceania	240	21750	0.001
14	Cyprus	2007	Middle East	9250	788457	0.106
15	Dominica	2007	Central America and the Caribbean	750	72386	0.031
16	Faroe Islands	2007	Europe	1400	47511	0.024
17	French Polynesia	2007	Oceania	3941	278963	0.051
18	Grenada	2007	Central America and the Caribbean	340	89971	0.009
19	Guadeloupe	2007	Central America and the Caribbean	1780	NULL	NULL

	name	year	region	area	population	gdp
1	American Samoa	2007	Oceania	199	72663	0.03
2	Andorra	2007	Europe	450	86822	0.035
3	Anguilla	2007	Central America and the Caribbean	91	28677	0.102
4	Aruba	2007	Central America and the Caribbean	193	115018	0.024
5	Bahrain	2007	Middle East	620	723573	0.078
6	Barbados	2007	Central America and the Caribbean	430	295946	0.035
7	Bermuda	2007	North America	50	81163	0.046
8	Cape Verde	2007	World	4030	438613	0.055
9	Cayman Islands	2007	Central America and the Caribbean	260	61600	0.009
10	Chad	2007	Africa	1	9900661	0.01
11	Cocos (Keeling) Islands	2007	Southeast Asia	14	15596	NULL
12	Comoros	2007	Africa	2170	726417	0.03
13	Cook Islands	2007	Oceania	240	36750	0.001
14	Cyprus	2007	Middle East	9250	803457	0.106
15	Dominica	2007	Central America and the Caribbean	750	87386	0.031
16	Faroe Islands	2007	Europe	1400	62511	0.024
17	French Polynesia	2007	Oceania	3941	293963	0.051
18	Grenada	2007	Central America and the Caribbean	340	104971	0.009
19	Guadeloupe	2007	Central America and the Caribbean	1780	NULL	NULL

(43 row(s) affected)



Task 7

- Delete all rows that have a negative GDP.
 - Count the number of rows before and after deletion.

	Rows
1	4141

(525 row(s) affected)

	Rows
1	3616



Task 8

- List a country with the biggest population in 2010.
 - The resulting table should contain name, region, and population.

	name	region	population
1	China	Asia	1330141295



Task 9

- List three Asian countries with the smallest total GDP growth for all years.
 - The resulting table should contain name and total GDP.

	name	Total GDP
1	Japan	0,2940000000460073
2	Nepal	0,7720000000812113
3	Mongolia	0,8799999998956919



Task 10

- List any countries with total GDP growth greater than 1.4.
 - The resulting table should contain name, region and total GDP.

	name	region	Total GDP
1	Angola	Africa	1,42000001110137
2	Equatorial Guinea	Africa	1,92400003038347
3	Bhutan	Asia	1,48999999091029
4	China	Asia	1,84600000083447
5	Maldives	Asia	1,43700000457466
6	Turkmenistan	Commonwealth of Independent States - Central Asia...	1,43900000851136
7	Azerbaijan	Commonwealth of Independent States - European St...	1,95399999897927
8	Kuwait	Middle East	1,83300002105534
9	Malaysia	Southeast Asia	1,42900000652298
10	Singapore	Southeast Asia	1,47900000028312



Modifying database, writing queries

Follow the instructions of the Lab Instructor.



Information for Laboratory Reports

- *Lab title: “SQL Queries”*
- *Instructor: Dmitriy Dunaev*
- *Department: Automation & Applied Informatics*
- *Lab sequence number: 2*