

Project Deforestation Exploration

SQL Program Nanodegree

SQL Queries



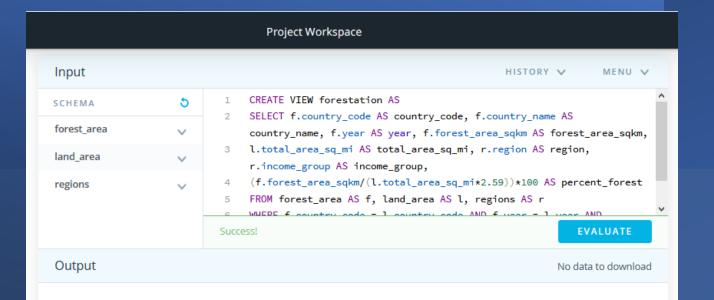
Course Project
Deforestation
Exploration

SQL is most commonly used to manipulate and analyze data to inform decision making. In this project, you will act as a data analyst for an organization on a mission to reduce deforestation around the world and to raise awareness about this important environmental topic. First, you'll clean any erroneous values in a table, join that table to another lookup table to bring in a new categorical and quantitative variable, and return a new view of all categories greater than a reference value. Then, you will create and execute SQL queries to perform calculations using variables from those disparate data sets to answer questions for stakeholders. Your analysis will help you better understand which countries and regions around the world seem to have forests that have been shrinking in size, and also which countries and regions have the most significant forest area. Lastly, you will compile your answers and summarize your analysis into a report that can be shared to a leadership team.

Steps to Complete

- Create a View called "forestation" by joining all three tables forest_area, land_ regions in the workspace.
- The forest_area and land_area tables join on both country_code AND year.
- The regions table joins these based on only country_code.
- 4. In the 'forestation' View, include the following:
 - All of the columns of the origin tables
 - A new column that provides the percent of the land area that is designated
- 5. Keep in mind that the column forest_area_sqkm in the forest_area table and the l in the land_area table are in different units (square kilometers and square mil respectively), so an adjustment will need to be made in the calculation you write sq km).

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CREATE Operation Successful

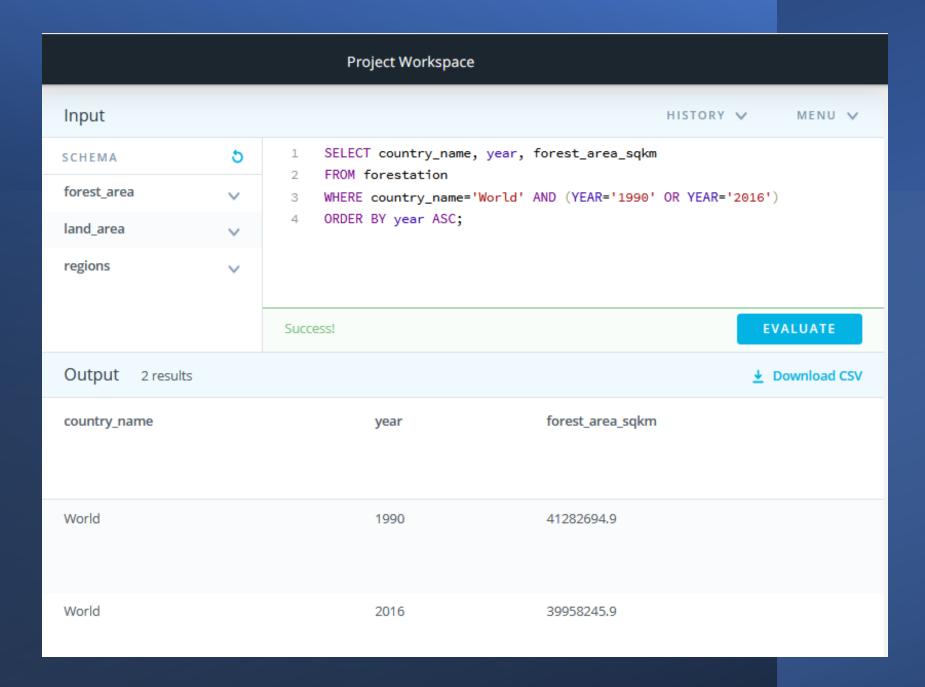
Part 1 - Global Situation

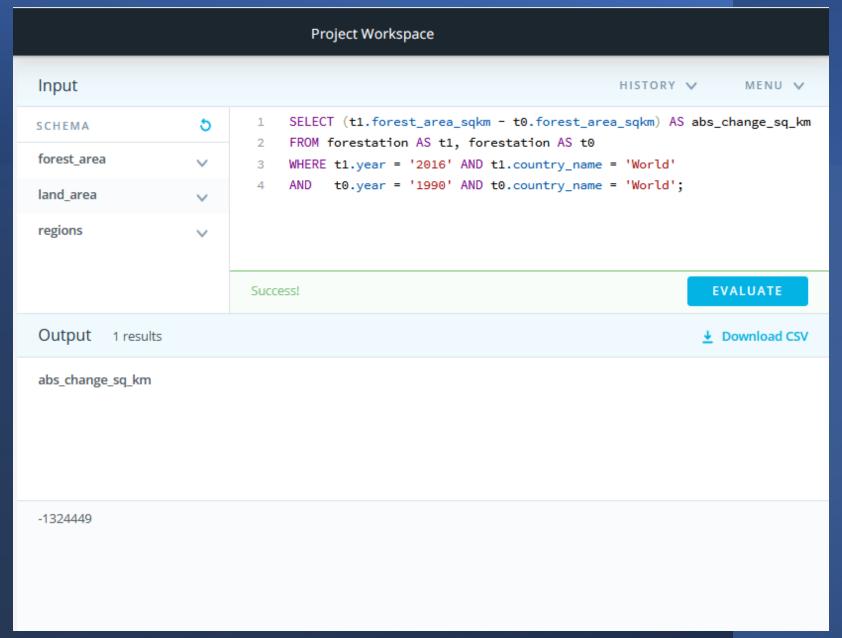
1. GLOBAL SITUATION

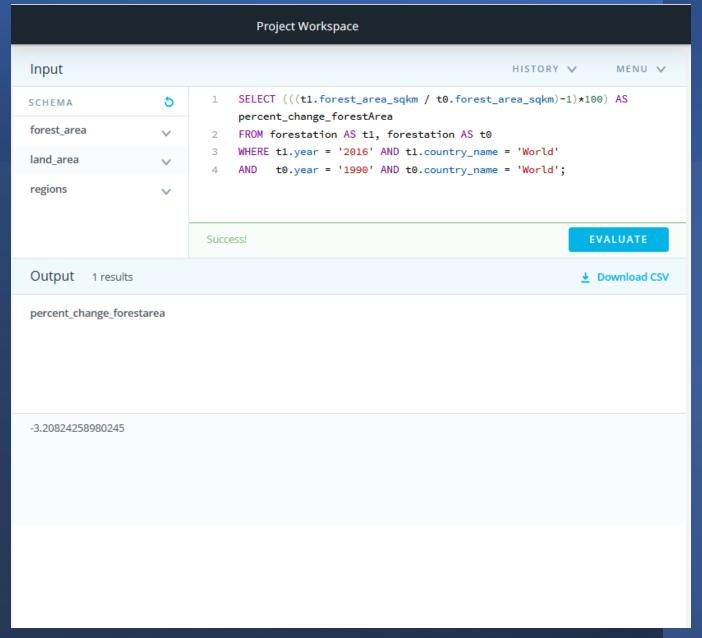
Instructions:

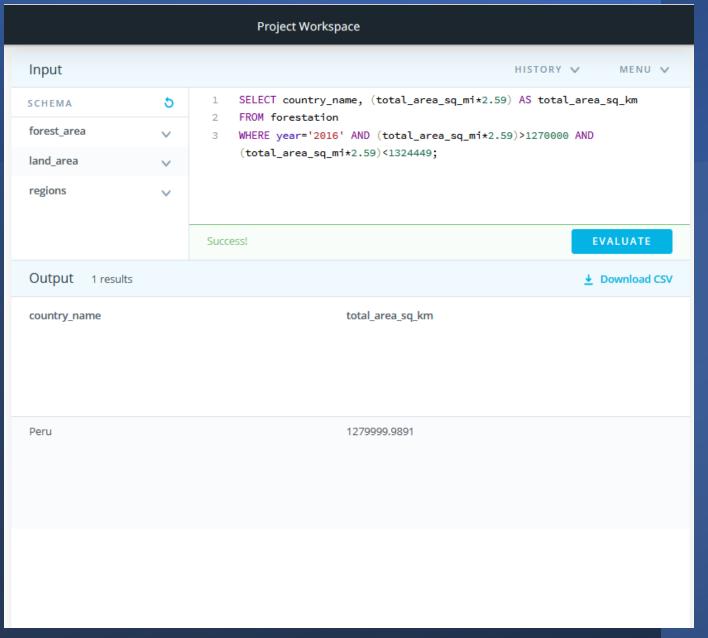
- Answering these questions will help you add information into the template.
- Use these questions as guides to write SQL queries.
- Use the output from the query to answer these questions.
- a. What was the total forest area (in sq km) of the world in 1990? Please keep in mind that you can use the country record denoted as "World" in the region table.
- b. What was the total forest area (in sq km) of the world in 2016? Please keep in mind that you can use the country record in the table is denoted as "World."
- c. What was the change (in sq km) in the forest area of the world from 1990 to 2016?
- d. What was the percent change in forest area of the world between 1990 and 2016?
- e. If you compare the amount of forest area lost between 1990 and 2016, to which country's total area in 2016 is it closest to?

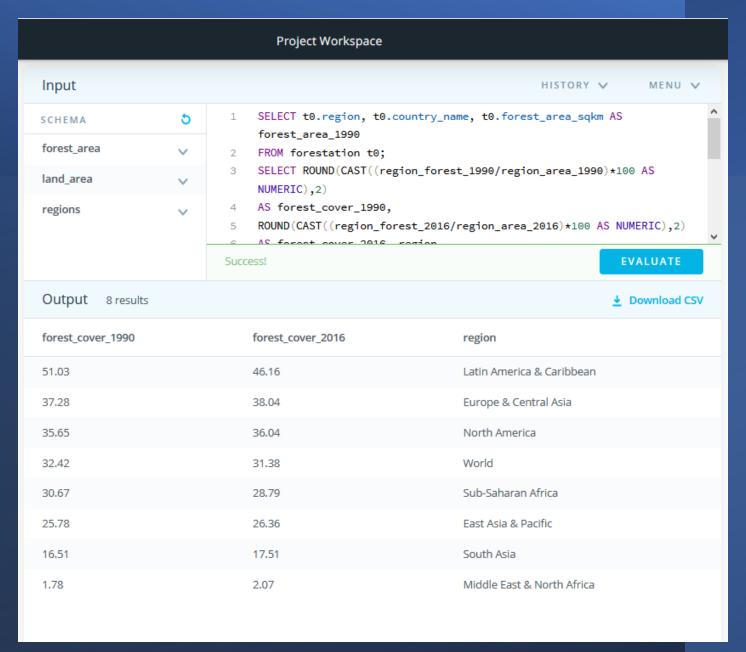
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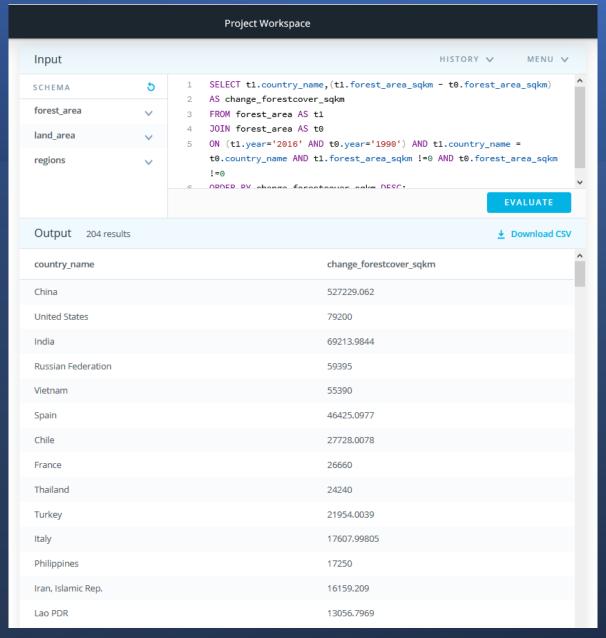












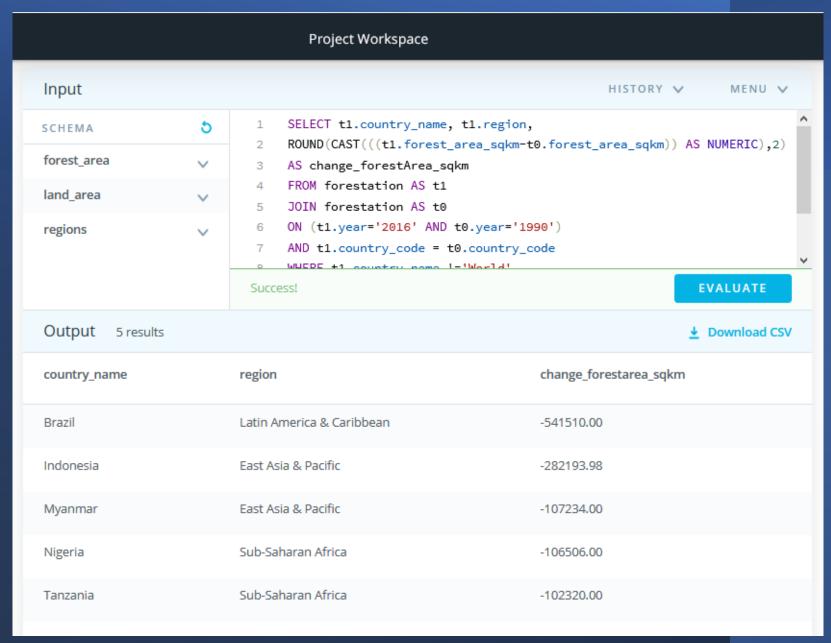
Part 2 - Regional Outlook

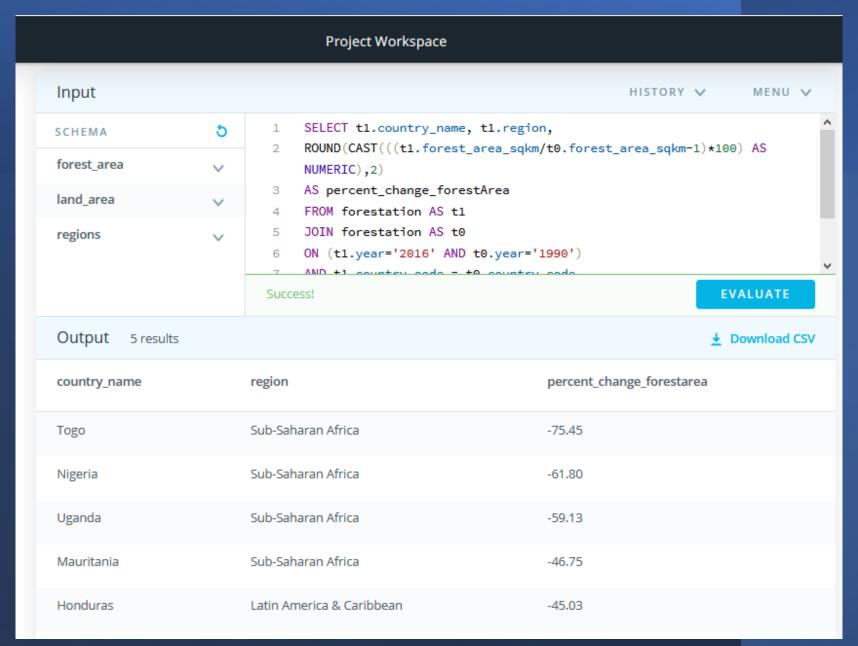
2. REGIONAL OUTLOOK

Instructions:

- Answering these questions will help you add information into the template.
- Use these questions as guides to write SQL queries.
- Use the output from the query to answer these questions.
- Create a table that shows the Regions and their percent forest area (sum of forest area divided by sum of land area) in 1990 and 2016. (Note that 1 sq mi = 2.59 sq km).
 Based on the table you created,
- a. What was the percent forest of the entire world in 2016? Which region had the HIGHEST percent forest in 2016, and which had the LOWEST, to 2 decimal places?
- b. What was the percent forest of the entire world in 1990? Which region had the HIGHEST percent forest in 1990, and which had the LOWEST, to 2 decimal places?
- c. Based on the table you created, which regions of the world DECREASED in forest area from 1990 to 2016?

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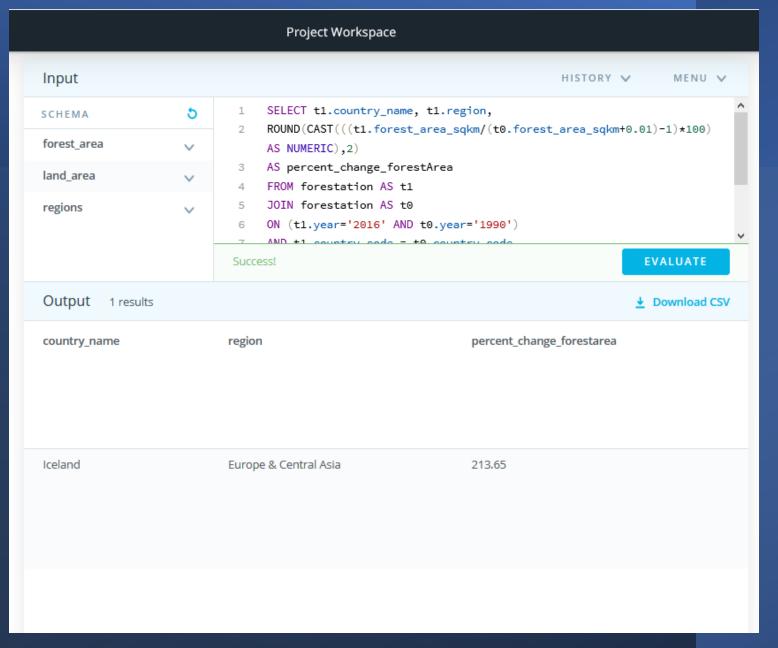
Part 3 - Country-Level Detail

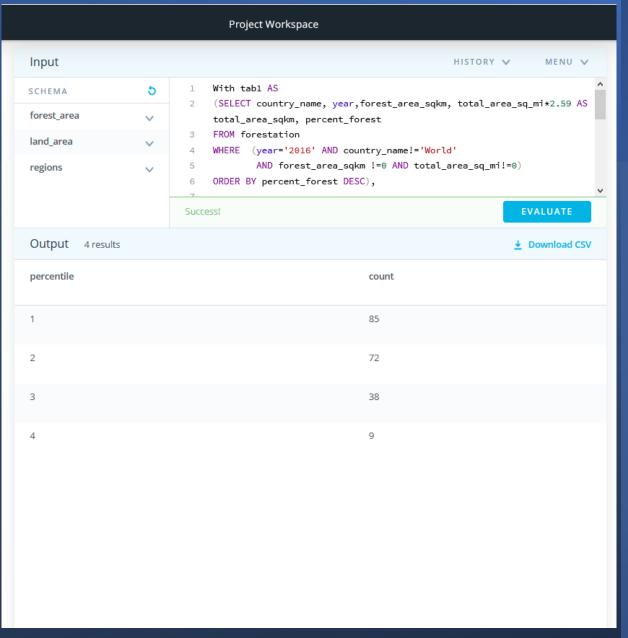
3. COUNTRY-LEVEL DETAIL

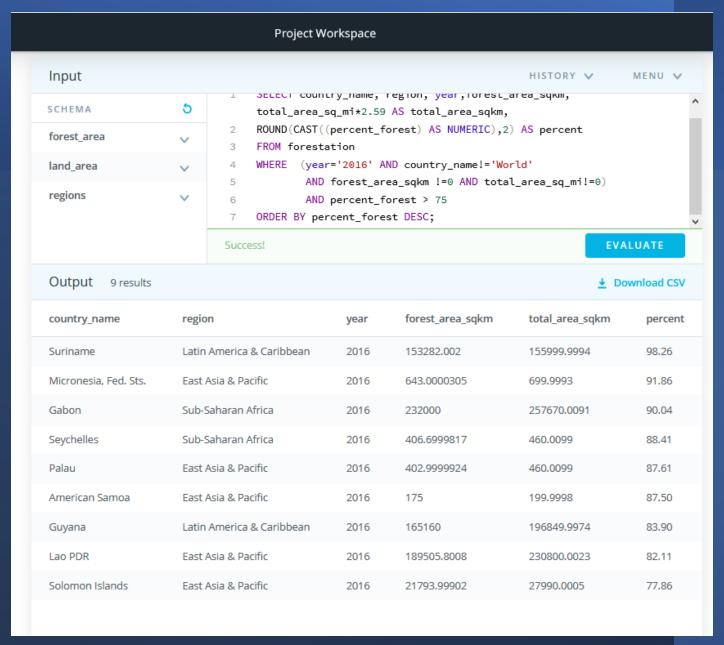
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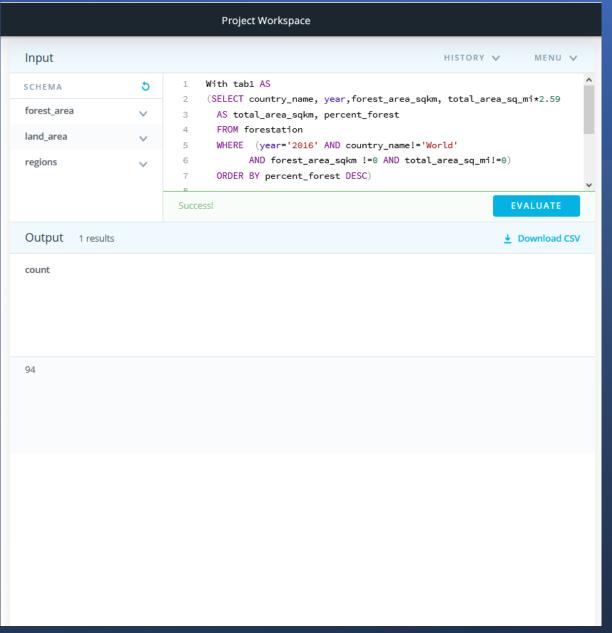
- · Answering these questions will help you add information into the template.
- Use these questions as guides to write SQL queries.
- Use the output from the query to answer these questions.
- a. Which 5 countries saw the largest amount decrease in forest area from 1990 to 2016? What was the difference in forest area for each?
- b. Which 5 countries saw the largest percent decrease in forest area from 1990 to 2016? What was the percent change to 2 decimal places for each?
- c. If countries were grouped by percent forestation in quartiles, which group had the most countries in it in 2016?
- d. List all of the countries that were in the 4th quartile (percent forest > 75%) in 2016.
- e. How many countries had a percent forestation higher than the United States in 2016?

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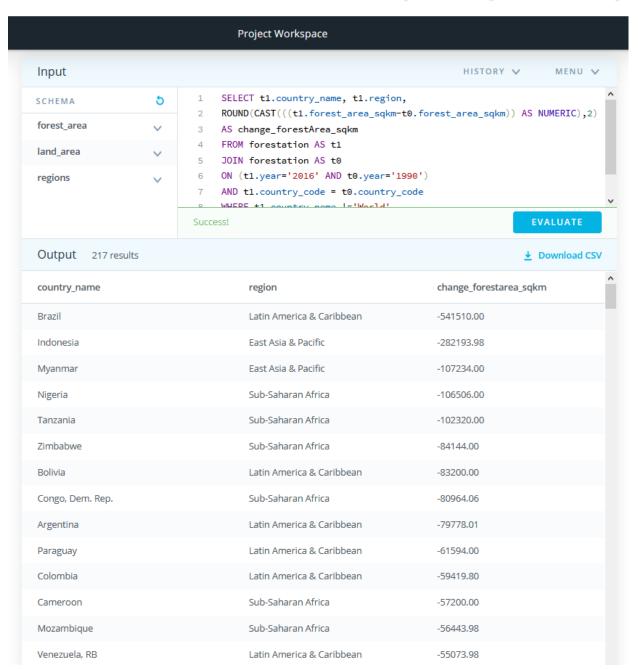


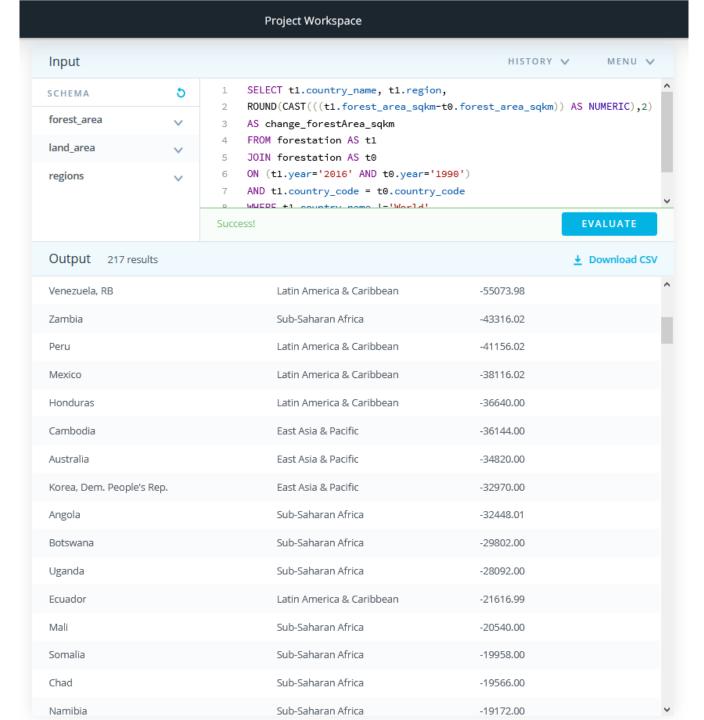


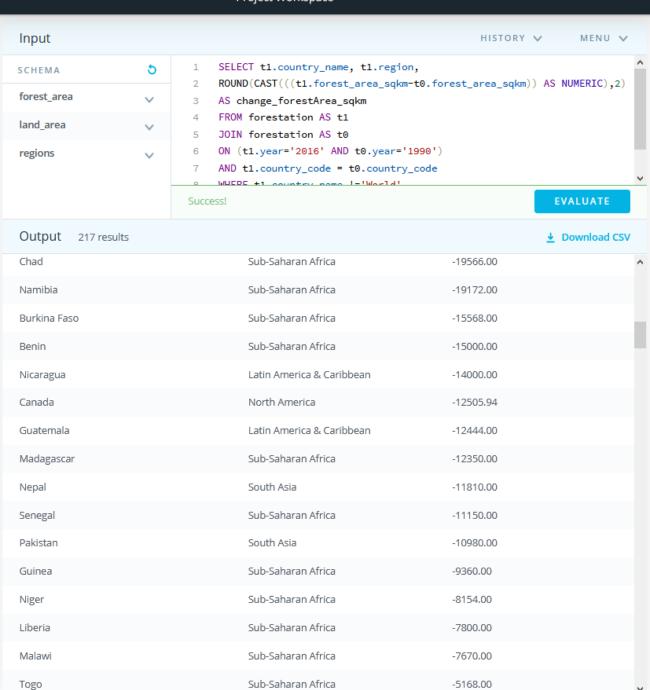


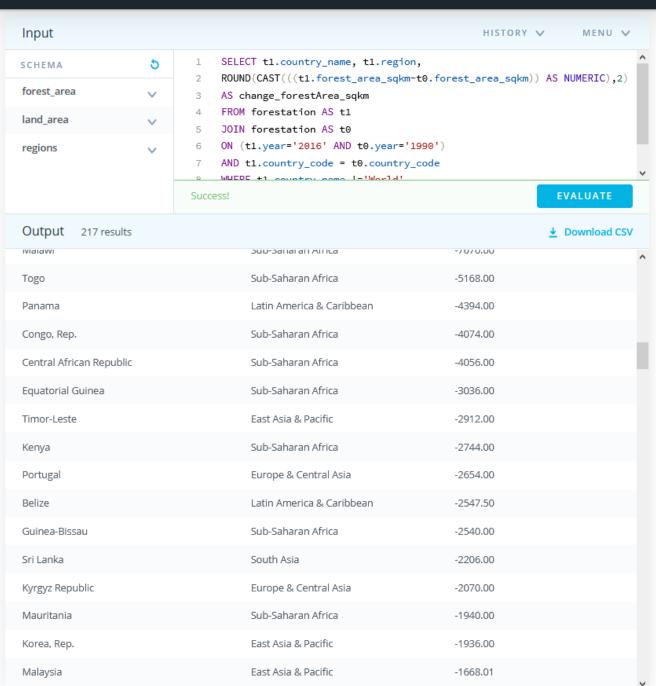


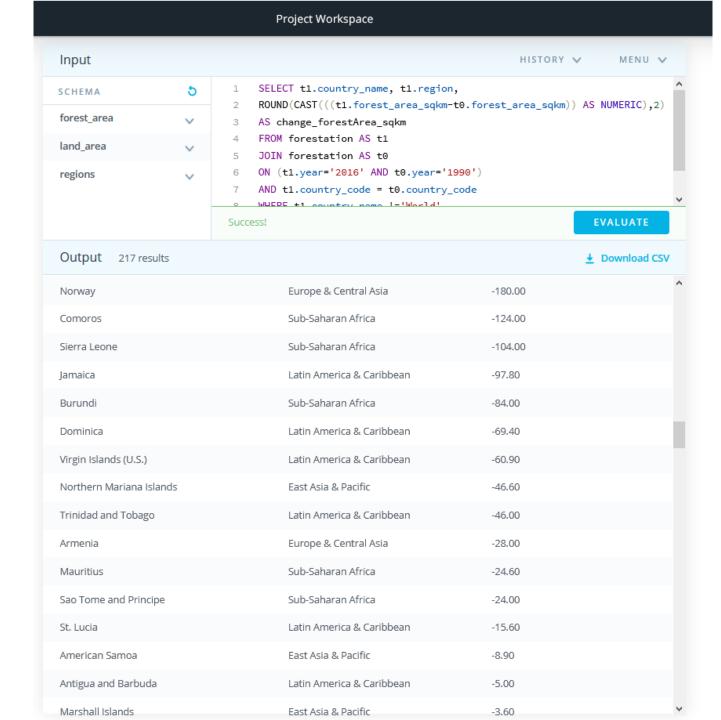
Deforestation 1990-2016 in sqkm by country (p.1.)

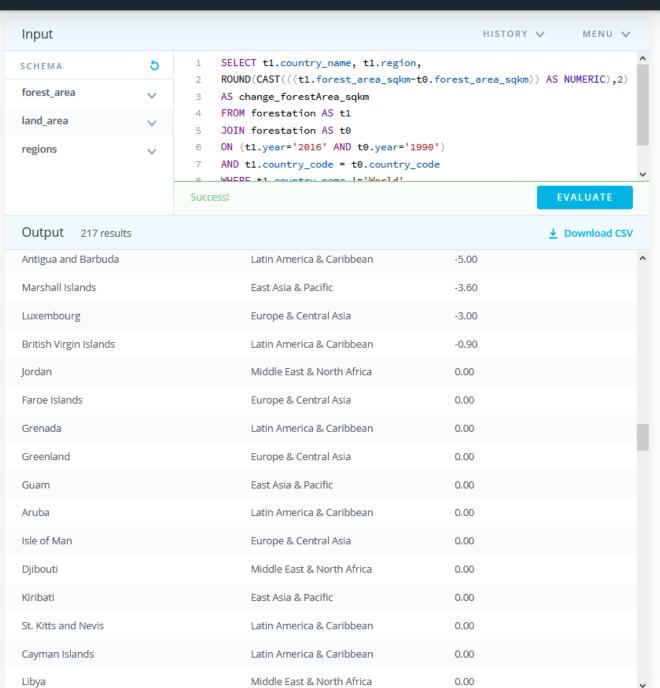


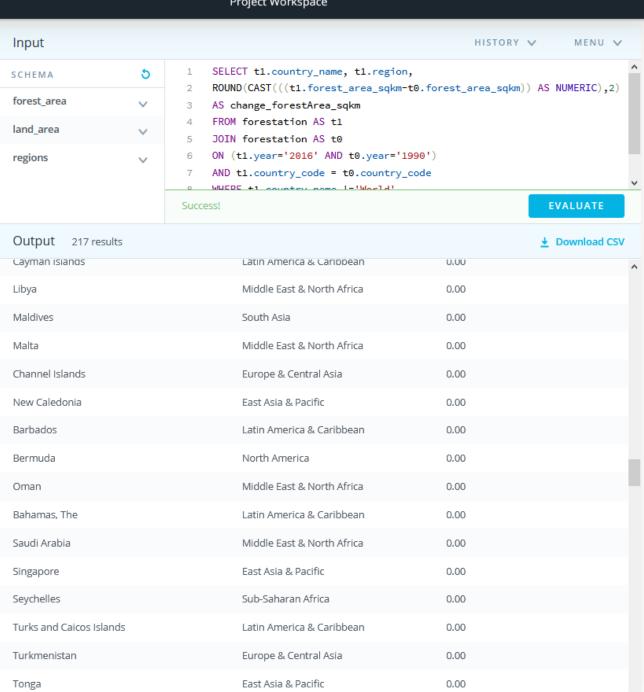


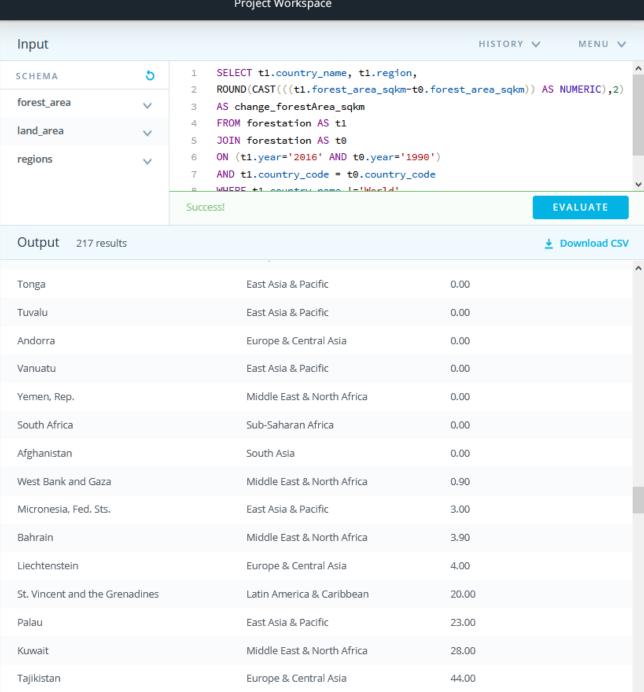












Project Workspace Input HISTORY V MENU V SELECT t1.country_name, t1.region, 5 SCHEMA ROUND(CAST(((t1.forest_area_sqkm-t0.forest_area_sqkm)) AS NUMERIC),2) forest_area \vee AS change_forestArea_sqkm FROM forestation AS t1 land_area \vee JOIN forestation AS to ON (t1.year='2016' AND t0.year='1990') regions AND t1.country_code = t0.country_code WUEDE +1 country name I-!World! Success! Output 217 results 44.00 Tajikistan Europe & Central Asia Lebanon Middle East & North Africa 63.80 Japan East Asia & Pacific 64.00 Europe & Central Asia Sweden 100.00 Lesotho Sub-Saharan Africa 100.00 Cyprus Europe & Central Asia 115.60 Belgium Europe & Central Asia 168.40 Slovak Republic Europe & Central Asia 182.00 Iraq Middle East & North Africa 210.00 Europe & Central Asia Estonia 256.00 Egypt, Arab Rep. Middle East & North Africa 296.00 Europe & Central Asia Netherlands 316.00 Cabo Verde Sub-Saharan Africa 331.10 Iceland Europe & Central Asia 344.00 Middle East & North Africa 352.00

Israel

