# Deforestation Exploration Project

## Introduction

You are a data analyst for ForestQuery, a non-profit organization on a mission to reduce deforestation around the world and raise awareness around this issue. Your executive director and her leadership team want to understand which countries and regions around the world have forests that have been shrinking, and which have the most significant forest area in terms of amount and percent of total area. The hope is these findings can inform initiatives, communications, and personnel allocation to achieve the largest impact with the previous few resources the organization has at its disposal.

You have found online data dealing with forestation, total land area, and region groupings, and have brought these together into a database to query to answer some of the questions raised by the ForestQuery executive team. Ahead of meeting with them, you want to prepare and disseminate a report for the leadership team to help them understand the global deforestation overview between 1990 and 2016.

## Schema

|  |  |  |
| --- | --- | --- |
| forest\_area:   * country\_code * country\_name * year * forest\_area\_sqkm | land\_area:   * country\_code * country\_name * year * total\_area\_sq\_mi | regions:   * country\_name * country\_code * region * income\_group |

## Steps to complete

Create a View called “forestation” by joining all three tables.

1. The forest\_area and land\_area tables join on both country\_code AND year
2. The regions table joins these based on only country\_code
3. Include all of the columns of the origin tables
4. A new column that provides the percent of the land area that is designated as forest
   * For this one, we need to see what percent of land is made of forest (forest/land \*100). But the forest area is in square km while total land area is in square miles.
   * For the project, we have been provided with a Project Tips section. One tip included is that, to convert the metric measurement to km, you must multiply the column in miles by 2.59. We can multiply land.area\_total\_area\_sqmi by 2.59 and alias the result as total\_area\_sqkm.
   * We can then calculate a new field and alias it as pct\_forest. Note we cannot use the alias in the calculation

The report must include the following sections: 1) Global situation, 2) Regional outlook, 3) Country-level detail, 4) Recommendations, and 5) Appendix: SQL queries used

## Global Situation

1. What was the total forest area (in sq km) of the world in 1990? Note you can use the country record denoted as “World” in the region table.
2. What was the total forest area (in sq km) of the world in 2016?
3. What was the change (in sq km) in the forest area of the world from 1990 to 2016?
4. What was the percentage change in forest area of the world between 1990 and 2016?
5. 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?

## Regional Outlook

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. Based on the table you created,

1. What was the percent forest of the entire world in 2016? Which region had the highest percent forest in 2016? Which had the lowest?
2. What was the percent forest of the entire world in 1990? Which region had the highest percent and which had the lowest?
3. Based on the table you created, which regions of the world decreased in forest area from 1990 to 2016?

## Country-level detail

1. Which 5 countries saw the largest amount decrease in forest area from 1990 to 2016? What was the difference in forest area for each?
2. 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?
3. If countries were grouped by percent forestation in quartiles, which group had the most countries in it in 2016?
4. List all the countries that were in the 4th quartile (percent forest > 75%) in 2016.
5. How many countries had a percent forestation higher than the United States in 2016?