

Assignment 6: US Counties Query and Summarize

30 Points scaled to 20 Points

Introduction

This assignment asks you to answer a series of questions relating to county-level statistics for the contiguous United States. You will make use of the “us_counties_data.csv” dataset. Make sure to read the associated description of the data (“us_counties_data_DESCRIPTION.pdf”) prior to undertaking the assignment. The description file explains the fields available and provides the data source.

Objectives

- *Query and filter datasets*
- *Obtain summary statistics*
- *Compare groups*

Deliverables

- *Jupyter Notebook (Python) or R Markdown file (R) with all code and answers to the questions embedded. Files can be rendered to HTML webpages if your instructor requires this. Questions should be stated and be answered within Markdown cells.*

Questions

This assignment can be conducted using either Python or R, whichever you prefer or whichever your instructor requires. Generate code to perform the following tasks or answer the questions posed.

Question 1: What county has the highest recorded mean elevation? (2 Points)

Question 2: What state has the lowest mean county elevation? (2 Points)

Question 3: How many counties have a mean elevation greater than 1,000 meters? (2 Points)

Question 4: How many counties have a mean elevation greater than 1,000 meters and a percent forest cover greater than 40%? (2 Points)

Question 5: How many counties have a mean elevation lower than 100 meters and a percent developed larger than 35%? (2 Points)

Question 6: Which subregion of the country has the largest number of counties? (2 Points)

Question 7: Which subregion of the country has the highest average county mean annual temperature? (2 Points)

Question 8: Does Nebraska or Kansas have the highest average county percent cropland? (2 Points)

Question 9: How many counties have a percent cropland greater than 25%, a mean temperature higher than 10°Celsius, and are not in the West South Central subregion? (2 Points)

Question 10: Which county in the country has the highest percent cropland? (2 Points)

Question 11: Which county in the country has the highest percent developed land? (2 Points)

Question 12: Which subregion has the highest total population? (2 Points)

Question 13: Which state has a higher percent of households with internet access (all internet access, not just broadband), West Virginia or North Dakota? (2 Points)

Question 14: Of all the counties with a mean elevation greater than 1,200 meters, which has the highest total annual precipitation? (2 Points)

Question 15: What county has the largest difference between its annual lowest and highest temperatures? (2 Points)