

## PROBLEM

As a climate station manager, I need to analyze a state's station elevations so that I can make a more informed request for additional station resources.

## SOLUTION

Please write a python program that takes two arguments from the command line – a station data CSV file (provided) and a two-letter state abbreviation and performs simple statistical analysis on elevation values contained in the file.

Required Functionality:

1. The program, when executed from the command line, should produce a stat report for the given state containing the following information:
  - Total number of stations in the state
  - Maximum, minimum, median, and average station elevation (including the associated station name, latitude, longitude, and elevation value)
2. The program shall save the report output as a JSON-formatted file named "elevation\_report\_<state\_abbreviation>.json" where <state\_abbreviation> is replaced with the actual two-letter abbreviation given in the command line arguments.
3. The program's JSON-formatted output should be organized appropriately for the items in the report.

Bonus Functionality:

- If a state abbreviation is invalid, the program should exit gracefully with a message explaining why
- If a state abbreviation is valid but does not match any state in the raw data, the program should exit gracefully with a message explaining why
- Include line items in the report that state the number of stations that are:
  - Above sea level
  - Above 2000 ft
  - Above 4000 ft
  - Above 6000 ft

You may include your solution in an email reply, or you may post your solution to a public repository like GitHub. If you post to a repository, please email a link to the project so that we can look at your implementation before meeting. Also make sure that your solution includes a brief "README" file explaining how to use it. Be prepared to discuss your JSON output design as well as your program's implementation.