

Cascade Energy Inc

We want to first acknowledge that interviewing for software engineering jobs is hard and time consuming. That being said, we'd like to get an idea of how you write code in the real world and also get a feel of your holistic approach to writing software, with the thinking being that this might be the best indicator of how you'd write code day to day on our team. Granted, a real codebase is larger and more complicated than any technical exercise can capture; nonetheless, we have found the technical exercise to be a good indicator of helping us figure out what you will add to our team. We are open to viewing code samples you may already have, if not here is a guide to an exercise that may help us determine your style and philosophy. This exercise is indicative (on a smaller scale, of course) of the work that happens everyday at Cascade Energy.

Evaluation Criteria:

- **Functionality:** A simple solution that correctly gets the job done is valued more highly than something complicated that does not quite work.
- **General:** The solution should be geared towards showcasing your skills and your philosophy on how you approach figuring out a solution to a given problem. The job posting highlights a number of technologies relevant to the job's day-to-day tasks. If you are able to use any of these technologies to arrive at or deliver your solution, it will help us to better see how your skill-set matches our hiring needs.
- **Conscientiousness:** For Cascade Energy, working on a collaborative team means writing code, tests and documentation that are easy for others to read. We look forward to submissions that demonstrate conscientious coding.

Time Estimation:

You can take up to a week to submit a solution.

Study Room:

Acknowledging that not every candidate may have a quiet space with a computer and Internet connection to complete the work sample test, candidates are welcome to come to the Cascade Energy Portland office and complete their submission with a company laptop and wifi. Send an e-mail to jinsy.oommen@cascadeenergy.com or call 866-321-4573 to arrange the space.

Submission Requirements:

Send an e-mail to jinsy.oommen@cascadeenergy.com containing your code or a link to your code along with any instructions on how to view your results.

Have fun with this! We will happily provide feedback on your solutions.

Scenario

The Port of Portland is the port district responsible for management of the Portland International Airport, located at 45.5898° N, 122.5951° W. The port's engineering directors are evaluating the demands on the airport's existing HVAC system, assessing whether it needs replacement. Currently, the HVAC system is set such that the air-conditioning system is turned on when the outdoor temperature is over 75 degrees Fahrenheit. Similarly, the heating system is turned on when the outdoor temperature is under 62 degrees Fahrenheit.

The engineering directors want to learn how often the air-conditioning and heating systems were turned on for July 2020. In particular, they would like a summary of data that provides the following:

- For each day in the given date range, indicate whether the air-conditioning system was turned on at least once.
- For each day in the given date range, indicate whether the heating system was turned on at least once.

The Task:

You have been assigned the task of creating a Restful API with the following specifications:

- Fetch data for a month indicated by the web report
- Transform data
- Return JSON formatted data
- (Optional) Present the results in a UI

Fetch data

You can use the attached csv file as the source of your weather data.

The temperature column in the file indicates the measured temperature at a given date time.

Transform data

Transform a month of hourly weather data to calculate how many days the air-conditioning and/or heating systems were turned on at least once during that day.

Results

Summarize the calculations made in the previous step and return a JSON formatted response.