Data Processing Exercise

We use this test as an indication of the kind of work you might do, so please take your time and submit a representative response.

Using Python or some commonly used language, design and code a program to process the gauge data, your submission should include test data and expected outputs.

Host your code on Github and send in your repo URL for review. When setting up the repo, structure it such that it will be used as a working repo in the future. You should aim to deliver production ready code, and your repository should be structured as you would if you were setting up a real repository.

Description

The data is rainfall data received from a new client, the data is recorded at irregular intervals and is a 1 hour running total. We need to store the data as just the rain in the interval between observation times, not the 60 minute total.

Your code should:

1. Calculate the de accumulated data
2. Find the peak 30 minute period within the supplied time range

We don't know what the units are, use your judgment and some research to decide on likely units. The measurement site is in Pennsylvania.

The code should be easily extendable to take input from some other source, such as a SQL database or a remote API.

Aside from the initial run to process the data, this process would be run incrementally as new data comes in. Document how this would work and what data (if any) other than the new value would be required.

Constraints

Rain values and times should be sensible, make sure your code validates these.

Document how to build and run your code, along with any assumptions and other notes.