Project

Due date: 04/24/2025

**Group Project (of no more than 3 per team)**

API’s & Data processing

Review the website below that provides free and open data access via APIs. (There are several such API’s, more at Data.gov). If you would rather choose a stock/finance related API to test your workflow read this [article](https://medium.com/coinmonks/free-stock-apis-de8f13619911) and find the free API else choose the weather API below.

Weather API:

[CO-OPS Data Retrieval API (noaa.gov)](https://api.tidesandcurrents.noaa.gov/api/prod/)

For this assignment, we will test API, data access and data curation scripts along with final product push to Cloud infrastructure (AWS).

The provided API document for weather example shows the following call of how to make an API request

https://api.tidesandcurrents.noaa.gov/api/prod/datagetter?begin\_date=20210601&end\_date=20210630&station=8724580&product=wind&time\_zone=lst\_ldt&interval=h&units=english&format=json

Goal:

The interest would be to access data on certain stocks (5) **or** weather from above example and create an alert when the stock price increases by a certain amount (you choose) **or** when a particular threshold elevation is reached (you choose) at a tide guage.

Time-stamped data will then be pushed to AWS storage (S3) that can be used as a data store for scalable public website to access. Can you capture this workflow using automated scripts (atleast 1 or more)?. Example Scripts are provided to you on BAU Hub.

A screenshot of a computer

Description automatically generated

Steps:

1. Use an API testing tool (Ex. Postman) to perform a GET request to an API to review the data received by the sample, properly constructed API call
2. Use a Python script to make the API call and use a data frame to store the received results
3. Parse the data stream (json) to split the data in 10 time steps i.e 20210601 – 20210610 , etc. or based on 5 stock values
4. Pick any timestep (only one) and save the data (write to local disk) as a csv file and push to aws S3(Try to get a few values showing an elevated tide guage station reading on any variable or a high ticker value for a stock)

Submission:

Submit as a single pdf file answers to the above questions. For Python code have a screenshot of working code added to the pdf file and submitted as single pdf file on BAU Hub. Can also submit a Jupyter notebook.

Note:

-Any time-step data from any API is okay to be used for the exercise (Please indicate which)

-Choose any 10-day period for parsing the data

-Starter Python code to access data using an API is provided on BAU Hub: