PROA Coding Challenge

This coding test is your opportunity to demonstrate to us how you think in a relaxed and familiar environment. The test is derived from a real-world scenario that we have in Proa.

We will be looking to understand how do you architect or structure your code? Format code? How do you use Git? CSS? How do you make use of your limited time? Etc.

Please ensure to commit both repositories api (*C# with .NET Framework*) and client (*reactjs*) in github or bitbucket so we can see the commit history.

Time Limit

We expect you to spend between 2-6 hours completing this challenge.

Delivery

Email us a link to the repos.

Challenge

Display weather stations as markers on a map using *C# with .NET Framework* and *reactjs*.

1. Import the CSV files containing the site data into a database (relational or non-relational)

2. Create an application using *C# with .NET Framework* to create the models and expose a JSON API endpoint for an array of properties. At the very least it should expose the following keys below. i.e Lat/Long so we can point it on the map, etc.

```
{
        "id": 1,
        "ws_name": "Cohuna North",
        "site": “Cohuna Solar Farm”,
        “portfolio”: “Enel Green Power”,
        "state": “VIC”,
        "latitude": 145.449895817713,
        "longitude": 144.217208,
}
```

3. Create a *reactjs* front-end application which consumes the endpoint and displays the markers on the map. You can either use mapbox or google maps.

4. When I click on a weather station marker it should display a pop-up containing the weather station details; weather station name, site, and portfolio. See for example https://reneweconomy.com.au/large-scale-solar-farm-map-of-australia/.

5. On the pop-up display the latest measurement for each weather station variable including the timestamp. Display the measured variable with the long name and unit.

6. Filters. Bonus points if you can add the ability to filter by state on the left side of the page.

Sample Data

weather_stations.csv:

- Contains the weather station information including:
    - id – unique id for each weather station
    - name – weather station name,
    - site – name of site weather station is located on,
    - portfolio – owner of the site,
    - state – Australian state site is located in,
    - latitude & Longitude – location of the weather station.

variables.csv:

- Contains the information about the weather data collected at each weather station including:
    - var_id – unique id for each variable,
    - id – unique id for each weather station,
    - name – short name for each variable,
    - unit – the unit of measurement for each variable i.e., deg C = degrees Celsius,
    - long_name – a descriptive name for each variable.

data_<id>:

- Contains the measurement data for each variable measured at weather station <id> over approximately an hour time frame, i.e., data_8 contains the measurement data for weather station 8.