Terem Technologies Back End Technical Test

Terem Technologies is *very* curious about weather trends at Observatory Hill in Sydney.

Luckily, the Bureau of Meteorology has recorded all of the historical rainfall data and it is downloadable here:

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_display_type=dailyZippedDataFile&p_stn_num=066062&p_c=-872855242&p_nccObsCode=136&p_startYear=2019

If unable to download the zip, you can use this link:

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=136&p_display_type=dailyDataFile&p_startYear=&p_c=&p_stn_num=066062

And click on the button "**All years of data**" on the top right of the page.

Task

You are to create a library which reads any given BOM weather data CSV file and converts the data to a JSON of the following format:

```
{
   "WeatherData": {
       "WeatherDataForYear": {
           "Year": "2019",
           "FirstRecordedDate": "2019-01-01",
           "LastRecordedDate": "2019-04-19",
           "TotalRainfall": "374.2",
           "AverageDailyRainfall": "3.433027523",
           "DaysWithNoRainfall": "65",
           "DaysWithRainfall": "44",
           "MonthlyAggregates": {
               "WeatherDataForMonth": {
                   "Month": "January",
                   "FirstRecordedDate": "2019-01-01",
                   "LastRecordedDate": "2019-01-31",
                   "TotalRainfall": "48.8",
                   "AverageDailyRainfall": "1.574193548",
                   "DaysWithNoRainfall": "21",
                   "DaysWithRainfall": "10"
               }
           }
       }
   }
}
```

Acceptance Criteria

- Create a CLI tool that you can point to CSV data.
- All data in the CSV will be converted to a corresponding JSON output, except:
    - Dates where the “Rainfall amount (millimetres)” is empty / blank should not be counted / recorded when determining `FirstRecordedDate` / `LastRecordedDate`
- A year data should contain:
    - Year value
    - First and last recorded dates
    - Total rainfall
    - Average daily rainfall
    - Days with rainfall
    - Days with no rainfall
    - Longest number days raining
    - Monthly Aggregates
- A month data should contain:
    - Month name
    - First and last recorded dates
    - Total rainfall
    - Average daily rainfall
    - Median Daily rainfall
    - Days with rainfall
    - Days with no rainfall
- Months that have yet to occur should not be included in the output data (i.e. If it’s currently January 2000, a MonthlyAggregate node should not exist for February 2000)

NOTE: The above snippet is only showing the sample output for January of 2019, the expected sample output would have data for all recorded years and all months.

Lastly

We understand software engineering requires discourse. Whether it’s confirming assumptions, clarification of acceptance criteria or general feedback, it’s all welcome.