Data Engineer

Please find below our coding exercise. You can use any programming language and tools that you are comfortable with, but please include a description (or requirements file) of necessary packages. Please reach out to us if you have any questions.

Goal

Using the provided CSV of sample beverage sales in 2016 at the W.C. Morse cafe `(37.831106, -122.254110)`, provide two reports described below. This challenge is designed to be completed in 1-3 hours.

Data

- Sales for 2016 is provided
- Hourly weather temperatures at or near the W.C. Morse cafe should be obtained (reasonable estimations are acceptable)
- Load data into a database and read from database for analysis

Report 1

Write a SQL query to generate the report of best-sellers in the following form:

```
Temperature (whole degrees Farenheit)  | Item Name | Number Sold
```

Report 2

Write a SQL query to generate the average change on the number of items sold when the temperature is colder by 2 degrees Farenheit or warmer by 2 degrees Farenheit the next day.

```
Item  Name| Avg change in sales when colder | Avg change in sales when warmer
```

Extra Credit

- How would productize both reports? Please consider the following in your answer:
  - Data modeling
  - Data partioning
  - Data backfill
- What are some tradeoffs and assumptions for your design of this ETL?
- What some of the tools you would consider to build this into an ETL pipeline?

What you should deliver?

- Written summary of the approach you took to solve the challenge
- Code used to ETL weather data
- Queries used to generate reports
- Results of your solutions in CSV format
- Instructions for runnning your code
- Answers to extra credit

How should you submit?

- Link to github repository
    - Please do not commit the included sales data by adding the following line to `.gitignore`

      `morse.csv`
    - If you prefer it remain private, you can add @aram356 collaborators on the repo
- ZIP archive emailed to aram@bluebottlecoffee.com

Questions/Clarifications:

Please don’t hesitate to contact aram@bluebottlecoffee.com