DSAA 5024 Data Exploration and Visualization

Assignment 4 (Last assignment)

- Posting date: 19 Oct. 2022
- Due date: 11:59 PM (Beijing time) on Tuesday, 1 Nov. 2022.

Visualization Design

- Data: The dataset *s_weather* contains 23 files, i.e. s_weather_1.csv, s_weather_2.csv, …, s_weather_23.csv. Each of these files describes weather predictions of an area of the Qingling Mountain at a specific point in time. Each row contains 8 columns, they *are id, lat, lng, date, time, tem, rhu*, and *wnd*.
  - id: representing the row number
  - lat, lng: representing the geospatial location of a predicted point
  - date, time: representing the date and time of this prediction
  - tem: the predicted temperature at a specific location in a specific time
  - rhu: the relative humanity at a specific location in a specific time
  - wnd: the direction of wind at a specific location in a specific time, measured using degrees, 0 degree = north
- Task:
  - Coding: Create a visualization of your own choice to visualize the data (40 points).
    - Your visualization shall allow users to portray all the predicted characteristics included in the data, i.e., the predicted lat, lng, date, time, temperature, relative humanity, and direction of wind.
    - Hints
      - When you design the visualization, always think of what tasks the visualization can address, e.g., scatterplot is good for find correlation between two data attributes (refer to lecture note Basic Charts).
      - One visualization (e.g., a scatterplot) may not be enough to present all the data attributes. To address this problem, you may need to create a coordinated multiple-view system (refer to lecture note Multiple Views), or you shall provide

suitable interactions that allow users to explore the data from different perspectives (refer to lecture note Interaction).

- Report: Answer the following questions (60 points)
  - **What:** Describe the data (general features of the data, and what type is each data attribute).
  - **Why:** Describe the tasks (domain problems and operation abstraction).
  - **How:** Describe your design philosophy (why you choose to the specific visualization for specific data attributes and tasks).
  - **Insights:** What you have learned from the visualization?

TURNIN instructions:

- You can code using either html and d3.js, or Tableau. Your code should be executable, and you are required to include a README file to describe how to run your code.
- The report shall no more than two pages!!! (one page is absolutely fine)
- Zip your code and report in a single file, named as *A4_studnet ID_name.zip*.