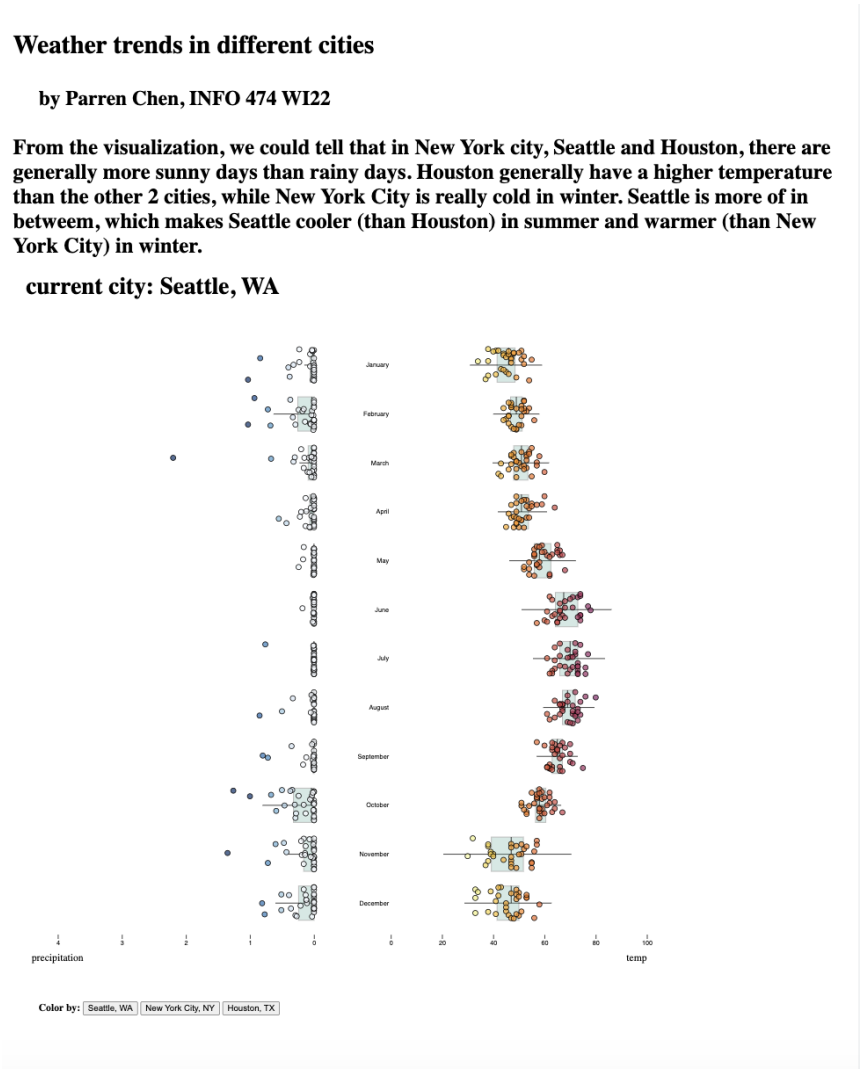
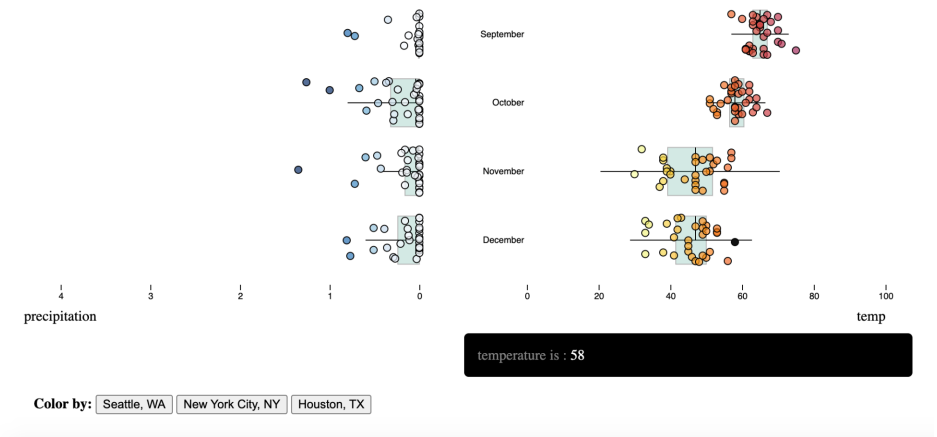
- list of user tasks it supports
    1. Identify trends in temperature and precipitation
    2. Compare temperature and precipitation trends in different cities
    3. Locate outliers and summarize interesting features
    4. Locate exact data in desired range

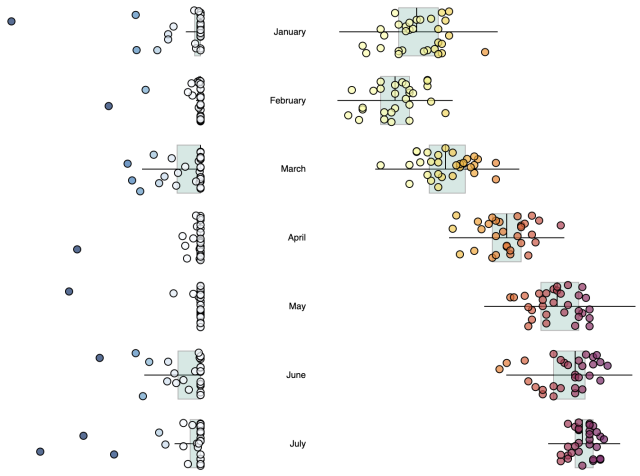
- Design overview
  This design used all 3 dataset of weather in different cities. It is designed to be a side by side boxplot, with exact data points scattered around the box, annotating with their values. The left side of the visualization are boxplots of precipitation, while the right side are boxplots of temperature. This side by side boxplot of weather trends in different cities is intended to help the audience find relationships of precipitation and temperature. Note there are lots of days with 0 precipitation, since 0 precipitation stands for sunny days. This has caused the precipitation box plot to become right skewed. For the temperature boxplot, there are more variations than the precipitation box plot. For all of the three cities, the monthly distribution of temperature may be different. The boxplot design makes it easier to identify and underlying trends and outliers. The scattered points of exact values offers a more detailed analysis of exact values. For the data aspect, actual temperature and actual precipitation values, date and city are used. That is to say, the data and the visualizations is focusing on actual values rather than historical data or highest/lowest values.

- Screenshots of the user interface

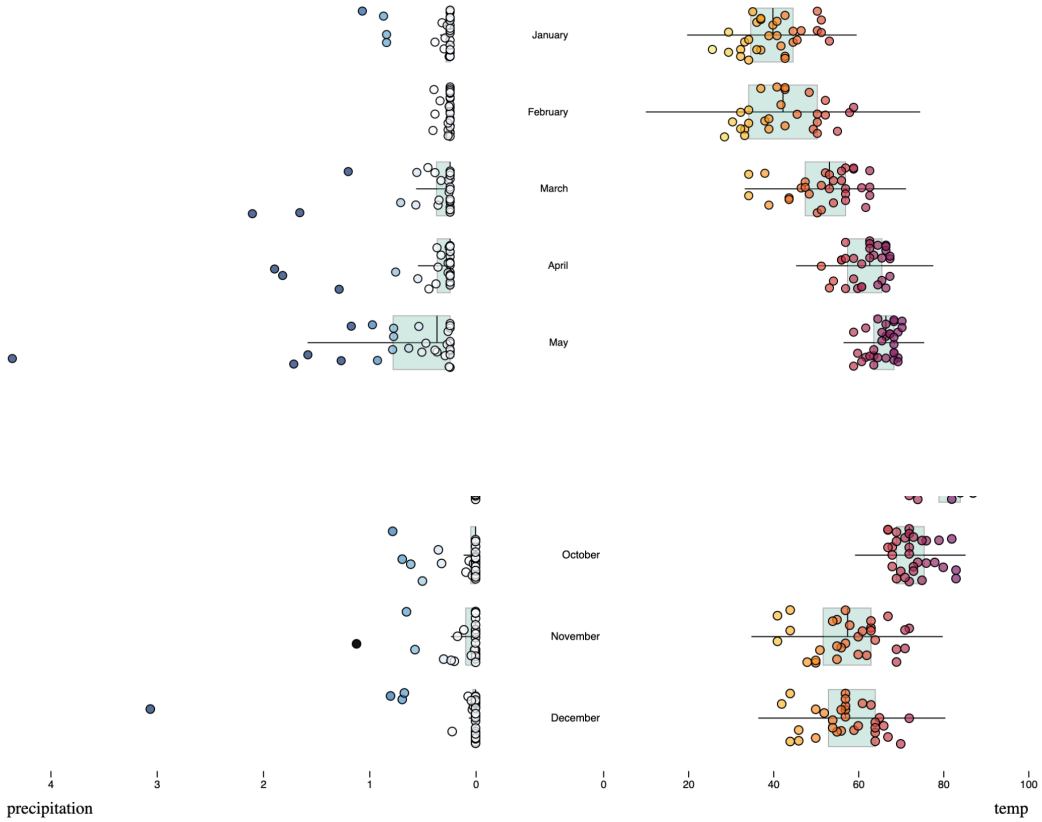


**current city: New York City, NY**




**current city: Houston, TX**




precipitation is : 1.12

**Color by:** Seattle, WA | New York City, NY | Houston, TX

- Description of interface/visualization
  For the scattering points of actual data, the visualization generates a random value if there are multiple same values, thus avoiding them from overlapping each other. Whenever the user hover on a data point, the data point would become black and show it’s annotated value at the bottom. Once the user changes the city option by clicking on any of the buttons, the “current city” display would automatically change with the user's choice.