ECON 0150 | Fall 2025 | Homework 1.6

Due: Friday, September 19 at 5PM

Homework is designed to both test your knowlege and challenge you to apply familiar concepts in new applications. Answer clearly and completely. You are welcomed and encouraged to work in groups so long as your work is your own. Submit your figures and answers to Gradescope.

Q1. US Cities Analysis

Using the provided dataset of US cities that includes:

- City name: `city`
- Population: `population`
- Latitude/longitude coordinates: `lat` and `lng`
- Average temperature: `avg_temp`
- Timezone: `timezone`

a) Create a map of the US cities in the dataset using a scatterplot. *(hint: use `lng` as the x value and `lat` as the y value.)*

b) Label each city with a different color by timezone. *(hint: use `timezone` as hue.)*

c) Plot US cities with size representing population and color representing average temperature. *(hint: use `size=population`, with `sizes=(1,200)`, and `hue=avg_temp`.)*

d) Use a scatterplot to visualize whether cities in the 'America/New_York' timezone have lower temperatures at higher latitudes. How would you describe this relationship between latitutde and average city temperature for east coast cities?

- Strongly Positive
- Weakly Positive
- Unclear
- Weakly Negative
- Strongly Negative