

Visualization Lab 4 Part 2 - Group Submission

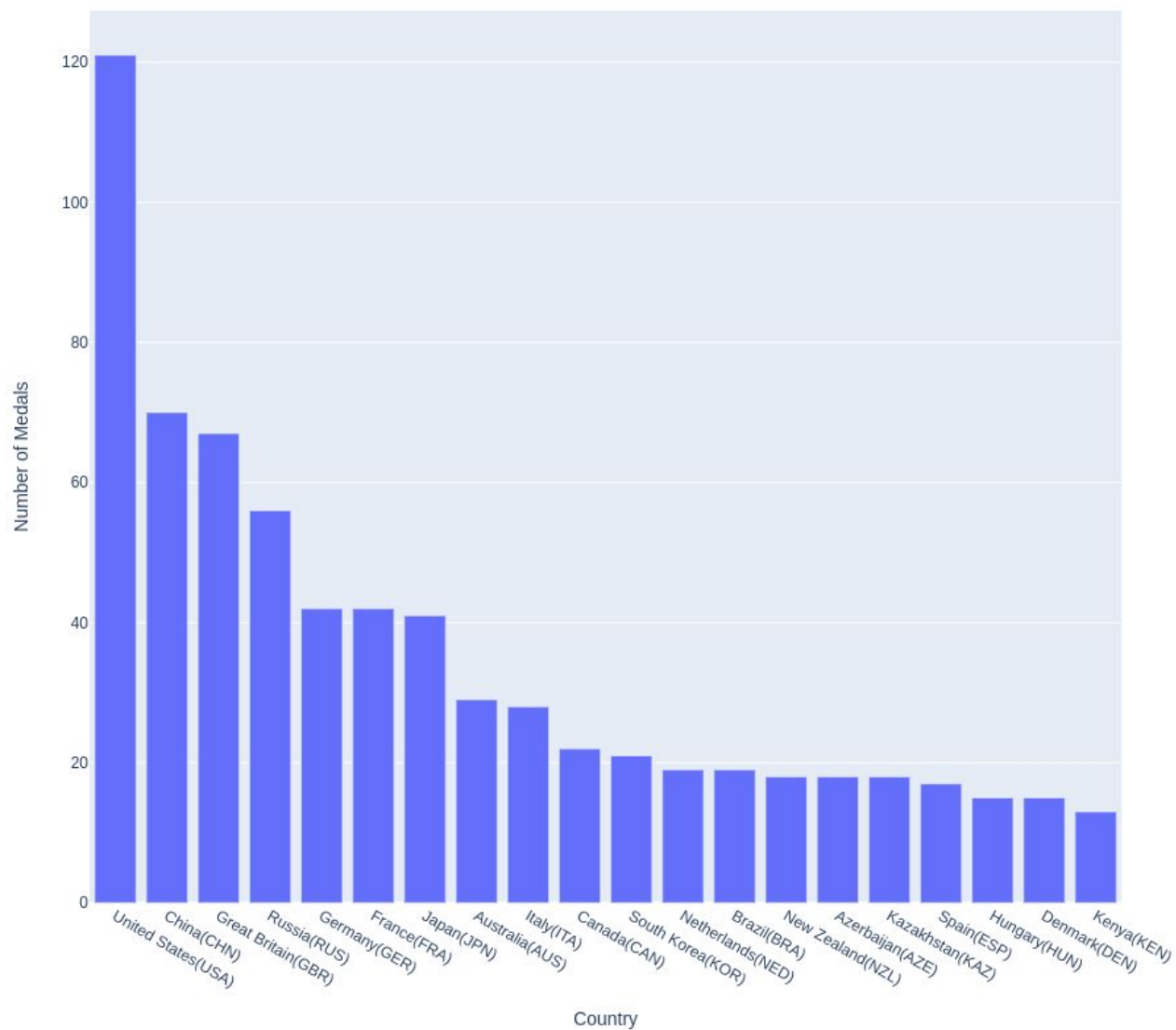
Using different data sets as shown below (or a new CoronaVirus Dataset that you can download to find updated graphs).

1. In each of the source codes, there is a comment and corresponding code about "Preparing data". Find each one of them and explain what each one does as far as data preprocessing before drawing the figures.
 - **Stack bar chart:** Each trace object is made up of x, y axes, a name, and a marker (color in this case). All countries in the new_df object are assigned to the x parameter, number of Unrecovered/Recovered/Deaths are assigned to the y parameter, a name is assigned according to y parameter, and a marker is given to differentiate (color). All is then passed to the go.Bar call to specify this will be a barchart, which is then stored in the trace# object and finally each trace object is passed to the data array.
 - **Line chart:** The data is being passed as the x and y parameters of the go.Scatter call. df['Date'] supplies the range of dates and df['Confirmed'] supplies the range of confirmed cases
 - **Bubble chart:** The data being prepared is a Scatter graph object with parameters x, y, text respectively assigned to the set of recovered patients, unrecovered patients and country contained in the data frame. The mode parameter is used to select a mode for the bubbles. The maker parameter contains the data that determines the size, color and scale of our bubbles.
 - **Heatmap:** The data being prepared is a Heatmap graph object with parameters x, y, z respectively assigned the set of days of the week, weeks of the month and number recovered contained in the data frame. The colorscale parameter is used to set a color scheme for the heatmap object.
 - **Multi Line chart:** The data being passed as the x and y parameters of the go.scatter call. Multi line chart differs from line chart because it creates three variables trace1-trace3 and stores the data in a data array. Trace1 calls the go.Scatter call on the amount of deaths per date. Trace2 calls the go.Scatter call on the amount of Recovered cases per date. And lastly trace3 calls the go.Scatter call on the number of unrecovered per each date. Each trace is also named accordingly to what it represents for example trace1 is given the name 'Death'.
 - **Bar chart:** the data being prepared is a barchart graph displaying the number of confirmed cases in each state. It does this by again creating a data variable and calling the go.Bar function with the x-axis being the states and the y-axis being the confirmed number of cases.

Visualization Lab 4 Part 2 - Group Submission

2. Draw a bar chart to represent the total medals of Olympic 2016 of 20 first top countries.
(use Olympic2016Rio.csv file)
 - **[completed] [contents in 'Plots' folder]**

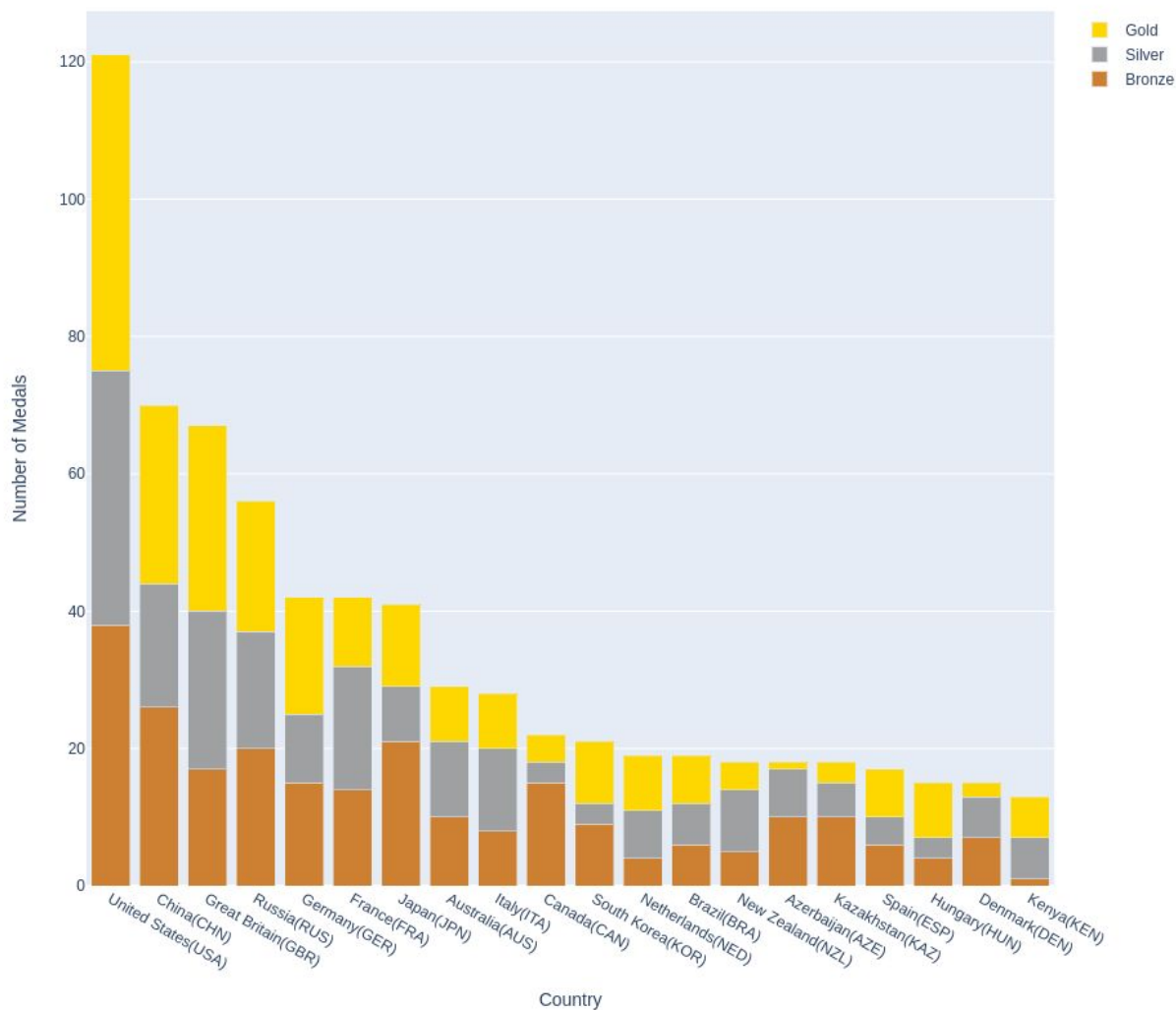
Top 20 Countries Olympic 2016 Total Medals



Visualization Lab 4 Part 2 - Group Submission

3. Draw a stack bar chart to represent the Gold, Silver, Bronze medals of Olympic 2016 of 20 first top countries. (use Olympic2016Rio.csv file)
 - **[completed] [contents in 'Plots' folder]**

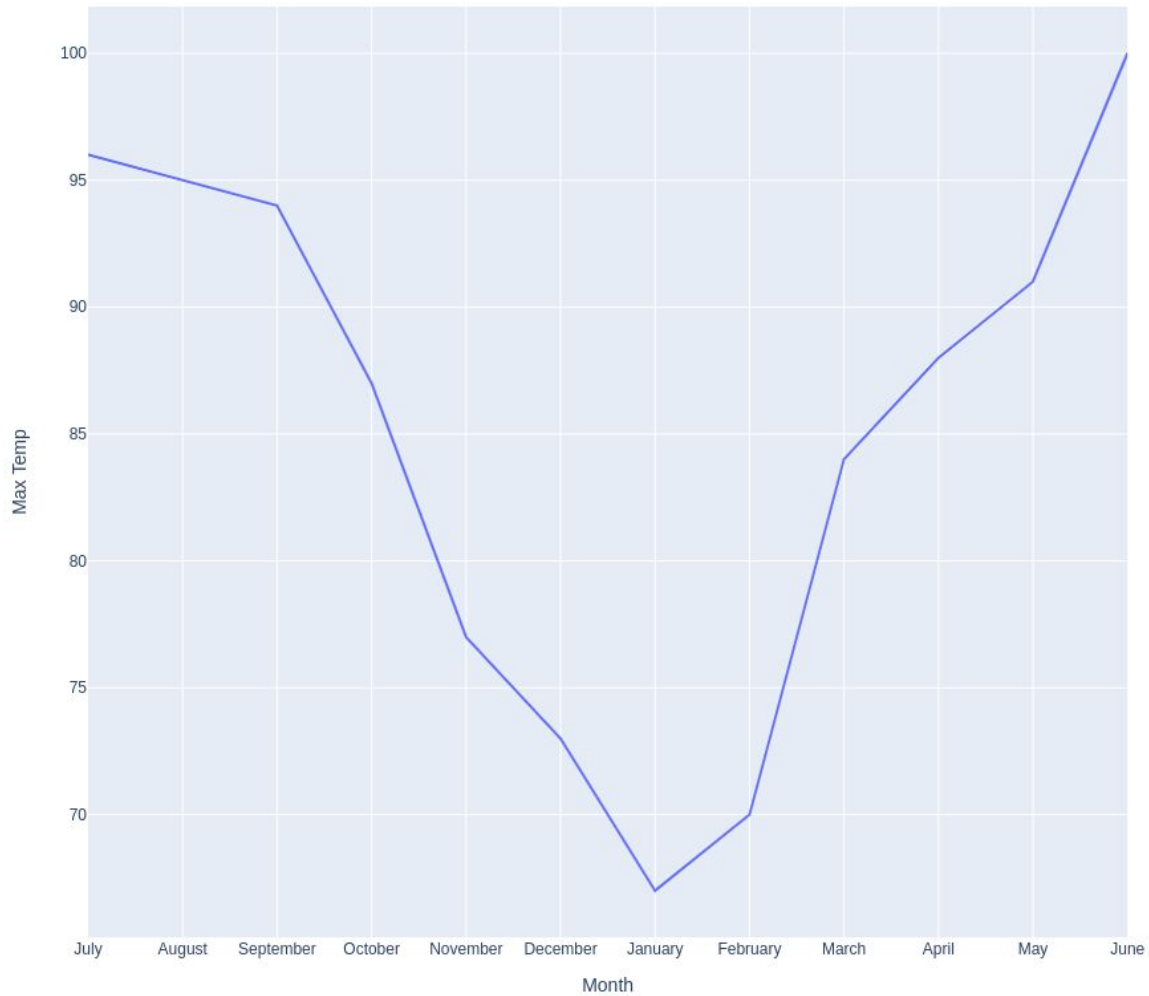
Top 20 Countries Olympic 2016 Gold, Silver and Bronze Medals



Visualization Lab 4 Part 2 - Group Submission

4. Draw a line chart to represent the actual max temperature of each month in weather statistics. (use Weather2014-15.csv file)
 - **[completed] [contents in 'Plots' folder]**

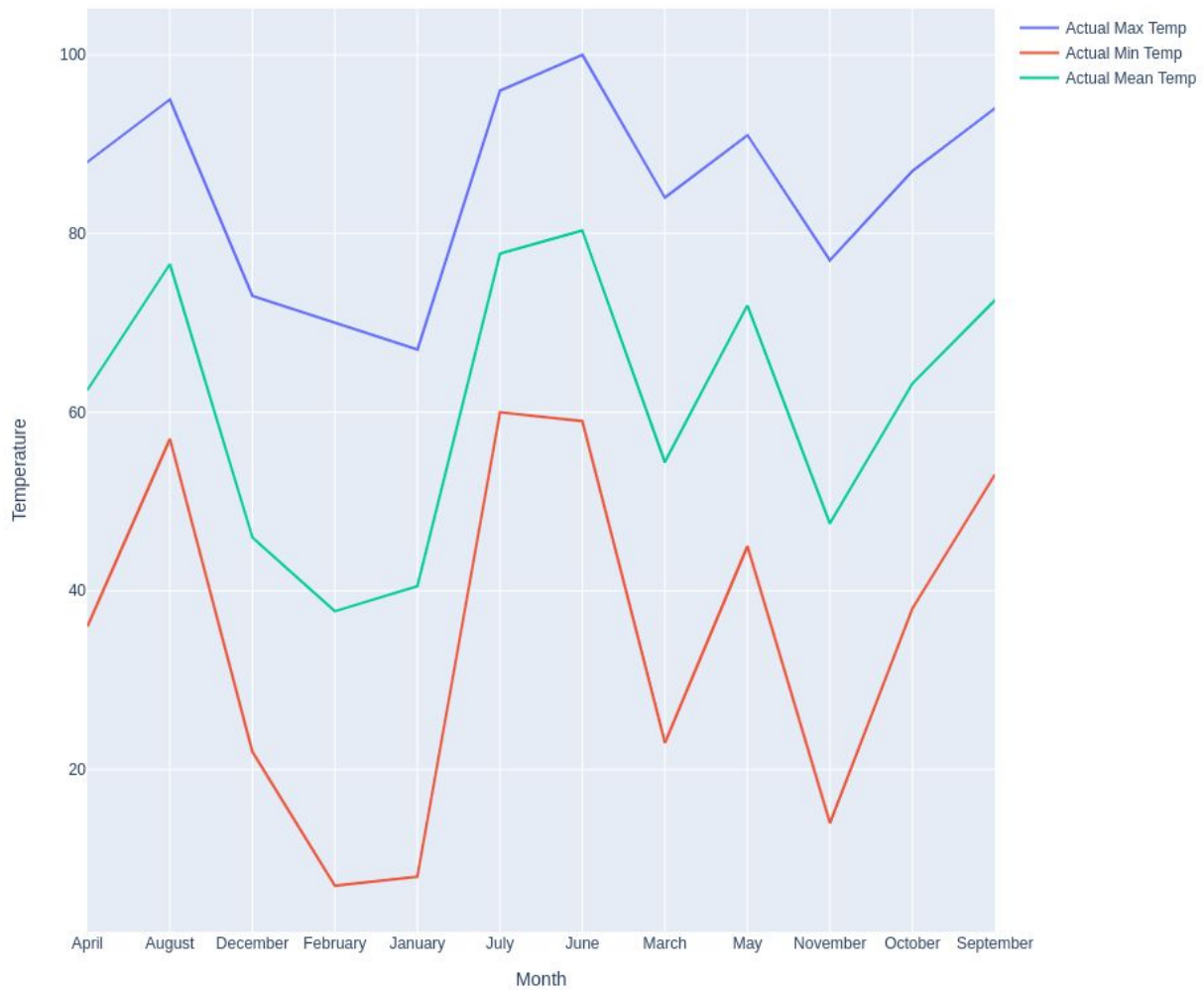
Actual Max Temperature by Month



Visualization Lab 4 Part 2 - Group Submission

5. Draw a multi line chart to represent the actual max, min and mean temperature of each month in weather statistics. (use Weather2014-15.csv file)
 - **[completed] [contents in 'Plots' folder]**

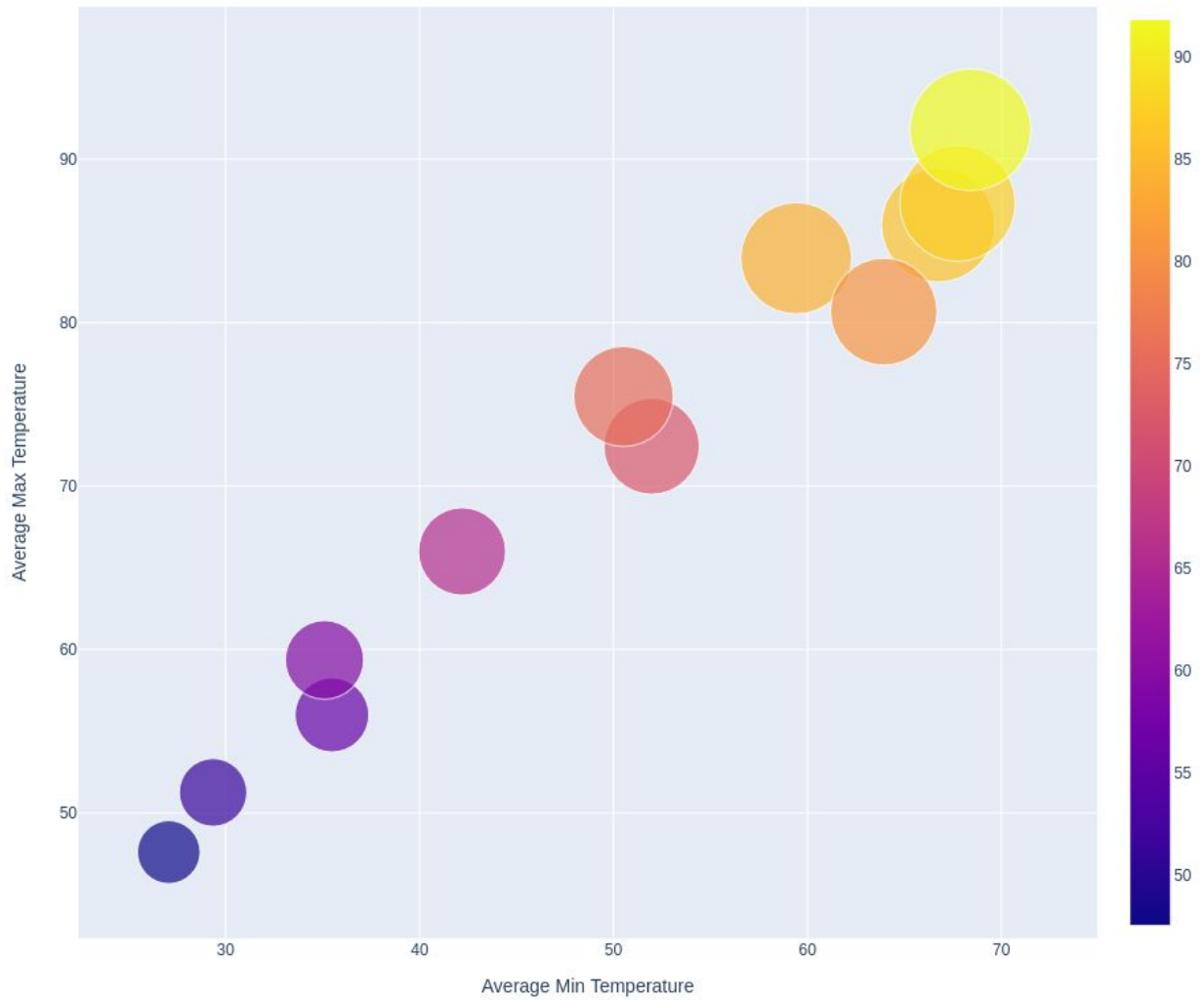
Actual Max, Min and Average Temperatures



Visualization Lab 4 Part 2 - Group Submission

6. Draw a bubble chart to represent the average min and max temperature of each month in weather statistics. (use Weather2014-15.csv file)
- **[completed] [contents in 'Plots' folder]**

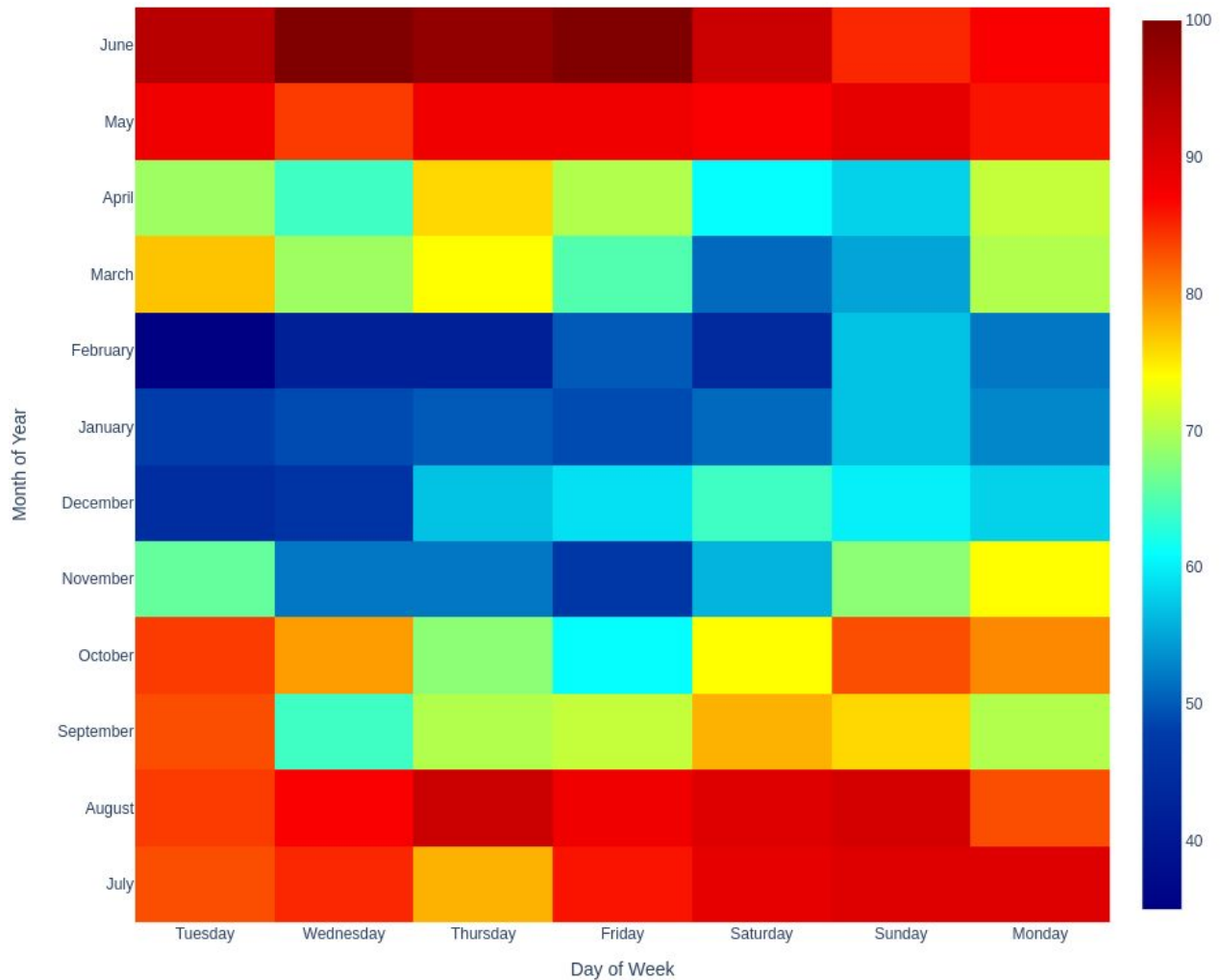
Average Min and Max Temperatures by Month



Visualization Lab 4 Part 2 - Group Submission

7. Draw a heatmap to represent the recorded max temperature on day of week and month of year. (use Weather2014-15.csv file)
- **[completed] [contents in 'Plots' folder]**

Maximum Temperature by Day of Week and Month of Year



Visualization Lab 4 Part 2 - Group Submission

8. Reflect on the creation of these graphs in python as far as complexity of the creation process, clarity of the figures, and usefulness as far as providing information.
 - The creation of these graphs in python was not a complex process. The figures produced were clear and useful for conveying the information that we were graphing using python. The only confusing overhead was using plotly with pandas as pandas has integrated tooling for plotting data in data frames.