**Tutorial**

**Interactive Map Tab:**

On the Interactive Map page, users can also upload their own data set or use our default data set containing sociodemographic data of each state in the U.S.

In the navigation bar, users can enter their keyword of interest for Twitter sentiment analysis. After entering the keyword, users specify the time frame for which the tweets are collected. Once users enter the time frame, our app starts collecting tweets containing the keyword from the moment the user finishes entering their specifications until the end of the user defined timeout.

After waiting for a few moments, the tweets will appear on the map. If the users hover over the Tweets on the map, there will appear a box that contains information about the Tweet and sentiment analysis results. The box contains the average sentiment score and eight emotion ratings (anger, anticipation, disgust, fear, joy, sadness, surprise, and trust). The radius of the tweet circle indicates the strength of the sentiment score (darker colors indicate either highly positive sentiments or negative sentiments and lighter colors indicate more neutral sentiments). The tweet’s URL is also provided in the pop-up box and can be clicked to access the tweet on the user’s twitter page.

**Table Tab:**

The tweets table contains information regarding the emotions and sentiment scores associated with each tweet. A tweet will be assigned one point for every one of the eight emotions that it is associated with. The scores are then summed (range: 0-8) for each Tweet to obtain the sentiment score. Each Tweet is also assigned an adjusted sentiment score, which is calculated by dividing the sentiment score by the length of the Tweet.

The state data table contains the sociodemographic data (e.g., median household income, percent in poverty) for each state in the U.S.

The table merges the tweets table with the state data table and the data set that the user uploaded together and their data can be viewed in tandem. This can help users decide how to analyze the Twitter data and the state-level data in the next two tabs of the app.

**Plot Tab:**

This tab allows users to visualize their data using plots. Users can choose their variables of interest and desired plots (options include histograms, bar plots, and pie charts).

**Analysis Tab:**

In this tab, users can plot scatterplots to analyze the association between two continuous variables (e.g., the relationship between state population size and frequency of Tweets containing the keyword).