*Project Goals*

The goal of this project was to receive some insight on the traffic conditions in Ann Arbor, and how they correlate with the weather conditions. Using OpenWeather API and TomTom API, we hope to use our newfound Python skills to gather data from the APIs, and create databases in SQLite3, and edit those databases. We will hopefully get information on live traffic data and incident data and see how the weather conditions (temperature and descriptions) influence that data. Once we have gathered this data, we hope to use Matplotlib to create graphs of the yearly weather in Michigan, the yearly incident data in Michigan, and then a graph showing the correlation between the two.

*Achieved Goals*

Unfortunately, we were not able to use the incident data API from TomTom, nor could we get the previous year’s weather or traffic data. Instead, we pivoted our project to get data from 12-04-19 to 12-11-19, on live traffic and weather data. We were able to collect information on how the average traffic speed varies during different kinds of weather conditions (temperature and descriptions) and how the confidence of the traffic conditions varies based on the weather conditions. We were also able to calculate the averages from all of our data (confidence, weather descriptions, temperature, and traffic speed) to better understand the conditions on any given day, and use this data for our visualizations.

*The Problems Faced*

* Tried to get live incident data from tomtom but failed because of???
* Had to convert the lat/long on map using (website)
* Had to convert the datetime to be the same after the data was gathered
  + This was hard because the code ran from top to bottom, not all at the same time, so the time stamps were different, we ended up just collecting the data per day rather than per hour or second so that when we did our database join we would be able to get matches
* Decided to make pie chart out of weather descriptions, so had to calculate the percent of each weather description using a counter
* For the double line graph, we initially had it as a single line graph with two lines, but we had to separate them because the values of the confidence and the values of the temperature were too different

*Instructions for running the code*

1. Uncomment to collect weather data (line 47/48)
2. Uncomment to collect traffic data (line 111/112)
3. Uncomment to clean 4 data tables (line 178/179) after getting all data
4. Uncomment to create average calculations table (line 360)
5. Uncomment to write data to text file (line ?)

*Documentation for each function written (input/output for each)*

*Documentation for resources used*

1. The visualization that you created
2. Instructions for running your code
3. Documentation for each function you wrote. This includes the input and output for each function.
4. Documentation of all resources that were used

* Mat plot lib pie chart website
* Conversion for lat long website
* Conversion for date time website
* Tomtom data API information website
* Openweather API information website
* Mat plotlib double line chart

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| **Date** | **Issue Description** | **Location of Resource** | **Result (did it solve the issue)?** |
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