SI Finals Project

Nico, Nate, Chris

Goals

- Our goal was to collect data from college football games and test if they were affected by different factors such as where they were played and the weather in the location in which they were played.
- We used API's for the game results, the weather, and the city location using longitude and latitude
- Our original idea was going to involve the spotify API and a billboard API, but since they weren't working we shifted our approach.
- College football was a shared interest and we thought it would be interesting to see the factors that affected game results

Goals accomplished

- We were able to do everything we had initially planned to collect regarding data
- We used the College Football Data API to collect data on final scores for college football games
- We used the geocoding API to collect the longitude and latitude for the cities in which these games were played
- We used the archive API to collect the temperature of those coordinates on the date of the games
- We used the open-elevation API to collected elevation data of the coordinate locations

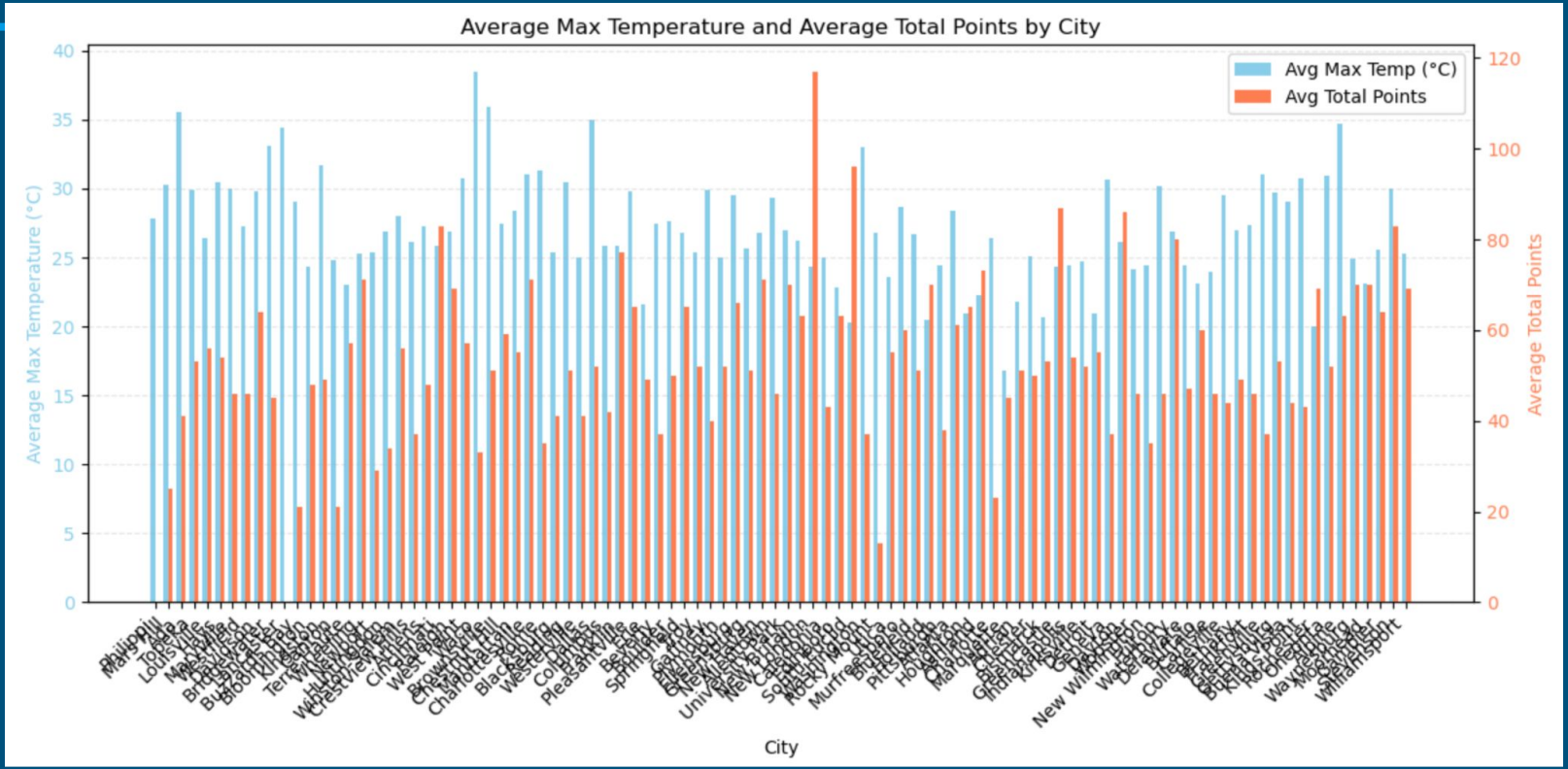
Problems faced

- Early Stages: Had to change our project plan and choose completely different API's(Spotify, Pokemon — Sports, weather)
- Main Calculations: Originally our calculations only included 25 rows of data. Had to modify the code to include all rows in the db. File.
- Visualizations: Had to modify our visualizations to match our calculations.

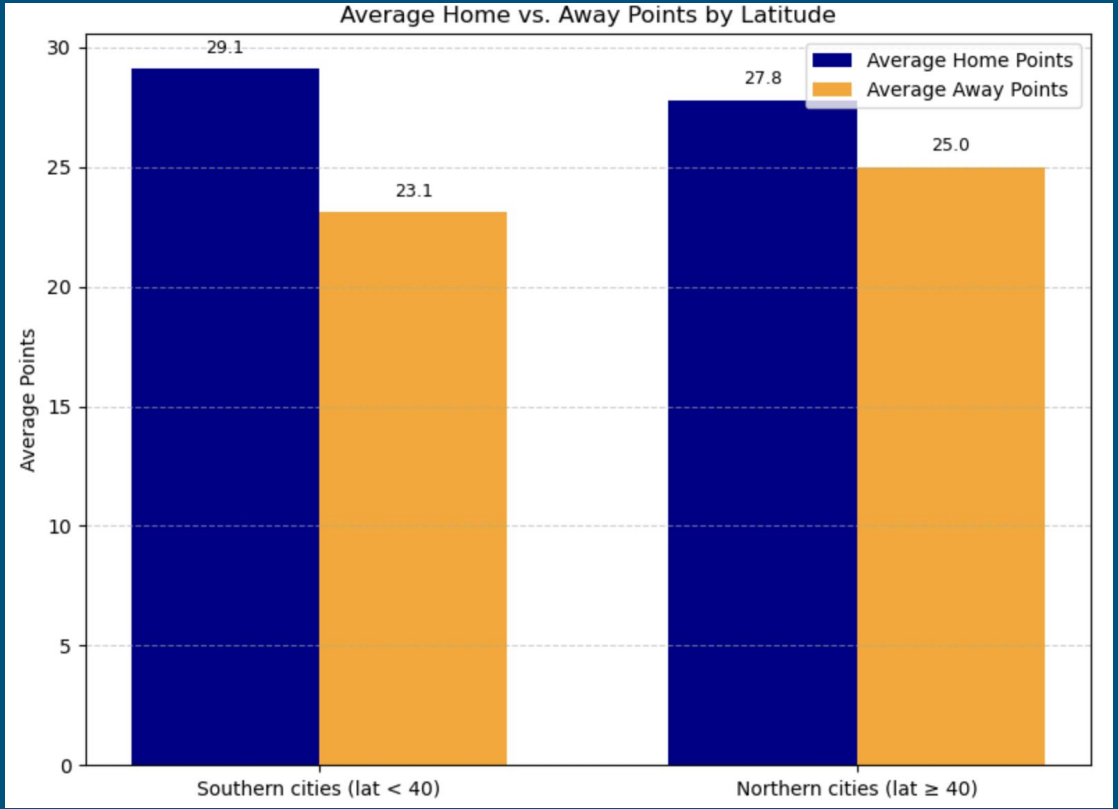
Calculations

1. Our first calculation was comparing the average maximum temperature to average total points scored in games
2. Our second calculation was comparing average home points scored vs average away points scored in northern vs southern cities
3. Our third calculation was seeing how average total points scored was affected by precipitation

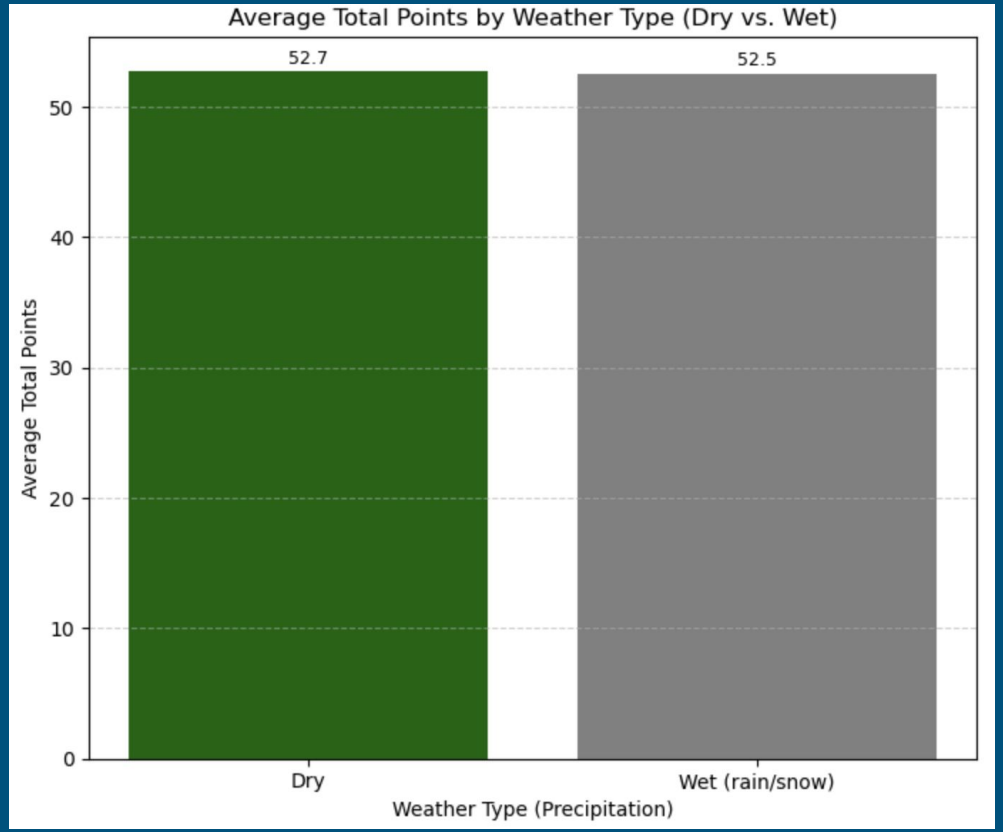
Visualization 1- AVG Max Temp & Avg Total Points



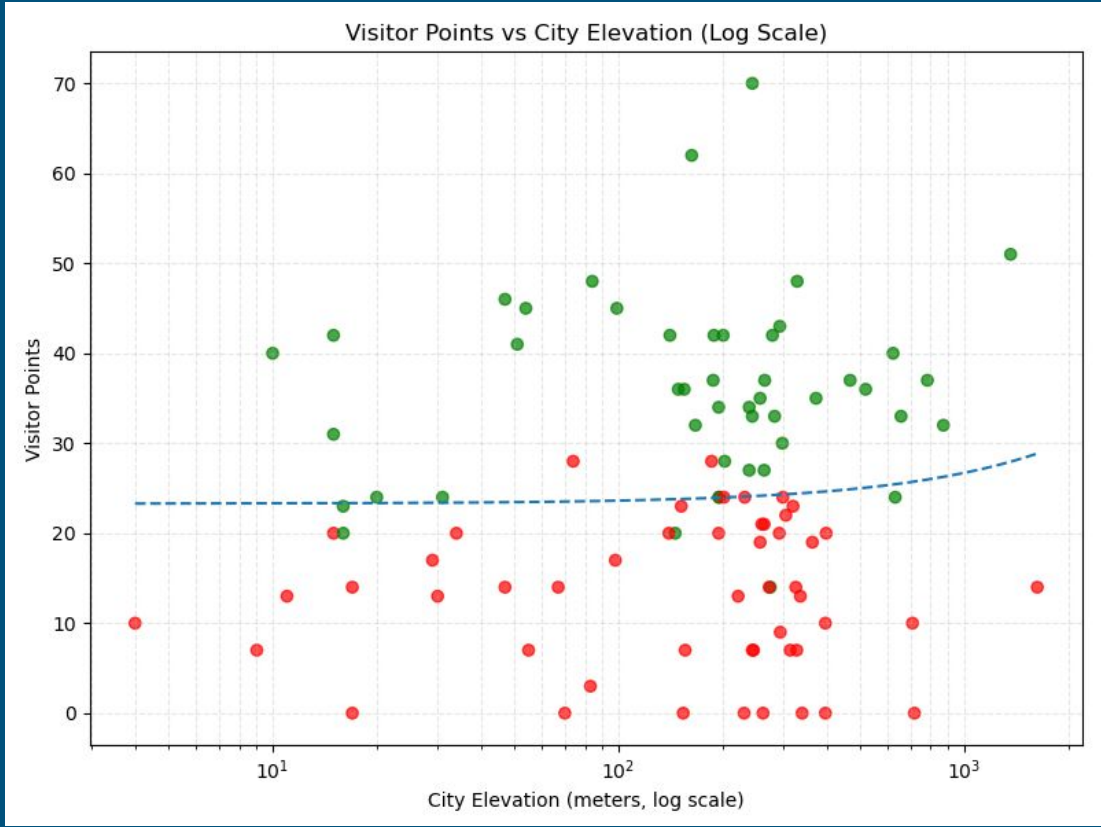
Visualization-2 AVG Home VS. AVG Away Points By Latitude



Visualization-3 AVG Total Points By Weather (Dry/Wet



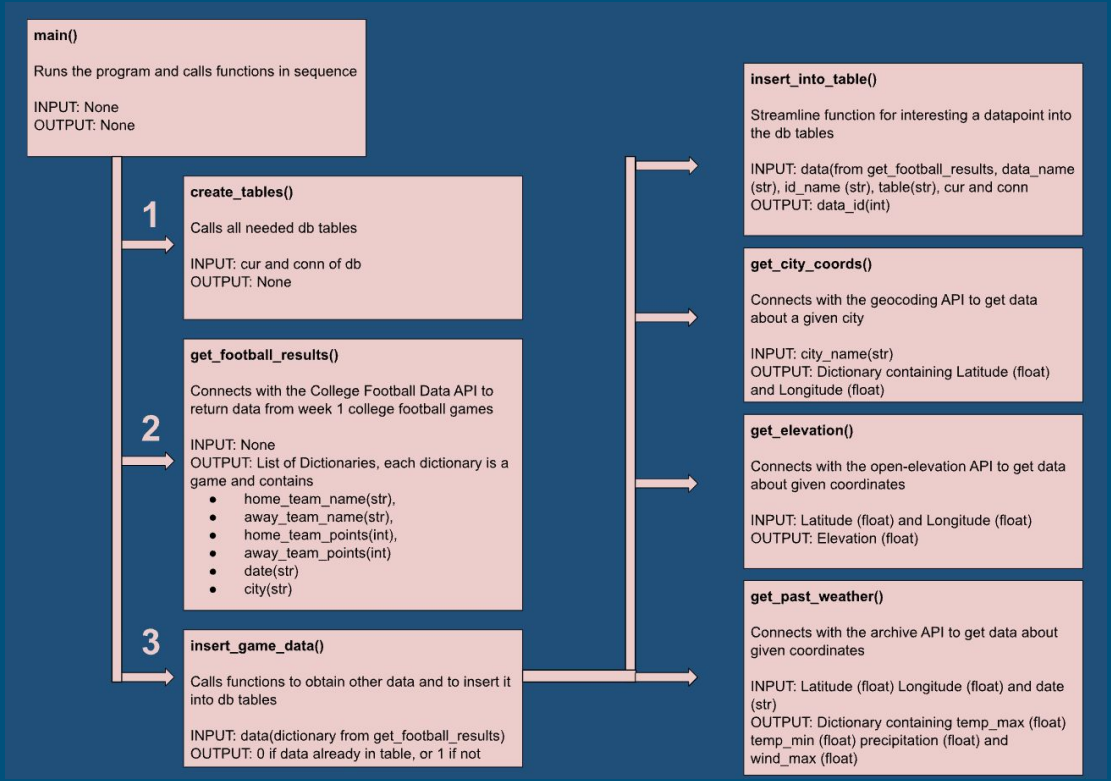
Visualization-4 Visitor Points vs Elevation (log)



Code instructions

1. First run of the FinalProject.py code as it creates databases in SQL
2. Each subsequent run of the FinalProject.py code will add data from up to 25 additional games, rerun until databases contains desired amount of data
3. Calculations are performed by the sql_code.sql code, which can be executed in the DB Browser used by SI 201 Students
4. Save the results as csv files
5. Visualizations are performed by running the visualizations.py python script

Updated function diagram; Process the data



Chris

Nico

Nate

Updated function diagram; Calculate the data

sql_code()

Performs calculations on data from our created db

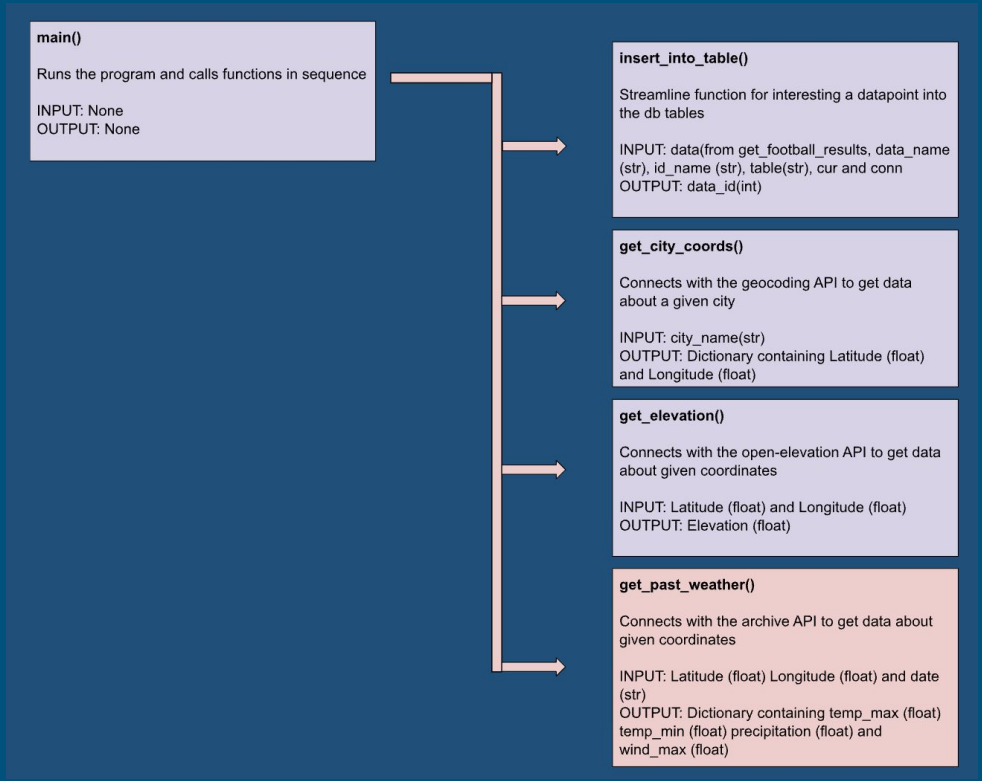
INPUT: db
OUTPUT: csv file

Chris

Nico

Nate

Updated function diagram; Visualize the data



Chris

Nico

Nate

Resources

DATE	ISSUE DESCRIPTION	LOCATION OF RESOURCE	RESULT
December 1	SQL calculation was not working	Gen AI	Helped fix some minor issues with my SQL code, allowed calculations to compile / create new database
December 10	Help with matplot	Gen AI	Helped with some coding aspects of the visualizations and aesthetics

Repo link

https://github.com/chrisvanlent/SI201FinalProject.git