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SI 206 Final Project Proposal

My final project is going to be based on skiing and snow since I am a big skier. With that, I will use a variety of different data sources to challenge myself and complete a final project that I am proud of. My main data source will be from a website called "Open Snow" (https://opensnow.com/) which has handcrafted daily snow forecasts for five days out of virtually every ski mountain in North America. Further, "Open Snow" gives information about a mountains location which will be helpful for more data. This should be 8 points because I will be crawling and scraping a website that we have not used before. I will use the Google Geocoding API, (https://developers.google.com/maps/documentation/geocoding/start/) which we used for Project 2, to get the coordinates of each ski mountain which will be necessary for the data visualization. This will be 2 points because it is an API we have used before. I will store the snowfall data in one table of a database and the mountain information including address and other fields in a different table I also intend on using the Yelp Fusion API (4 points) (https://www.yelp.com/) to get information about the ski mountains ratings and possibly other information like restaurants and shops that are nearby and around the mountain. This would yield a challenge score of 14 points.

My presentation will consist of a map of the United States and Canada as well as other graphs. On the map, there will be different data points based on what the user wants to see. For instance, I intend on having a map that shows each ski resort's location and how much snow they are forecasted to receive over the next five days. Also, there could be a map that shows the current temperature at each ski resort. There could also be a display that shows the amount of stars the resort has out of five based on its yelp reviews. Further, I may have a bar graph comparing historical data of snowfall for different resorts. The historical data could be sorted by fields like state, country, region, difficulty, etc.

The presentation of data will be based on Plotly. I intend on primarily using the 'scattergeo' map which shows data points on a map built to the constraints that are set. Also, I will use the bar graph to display historical data. Finally, I may look into using Plotly Dash which is an is an easy way to display interactive data which will be helpful for changing different criteria.

Lastly, if time allows, I plan on adding more features and challenges to the program like possibly scraping another website for more mountain information or maybe adding in flight information or directions from a user's current location to a ski resort.