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15-112 Term Project

**Project Proposal:**

The problem:

Currently, people can input a starting location and a destination, and can use Google Maps, MapQuest, or other similar programs to find the shortest path between them. However, what if one wants to find the shortest round-trip path through a series of locations?

In this project, I will attempt to provide a possible solution implementing existing algorithms for the Traveling Salesman Problem (TSP) to provide an optimal round-trip path through a series of locations.

I will be using Google Maps API to calculate the distances between locations. I will then apply the Greedy Algorithm (or other additional algorithms) to find the optimal order in which to visit the selected cities. I will use Google Maps API to then create a text file containing the instructions. I will be using Google Maps API (Javascript) to generate a map in a web browser that visually displays a solution path to the user.

Modules: Google Maps API (python version), Google Maps API (Javascript version)

Further additions to the project might account for real-time traffic/construction data while determining an optimal round-trip path. Additionally, I can enable the user to request for possible types of attractions to visit within a specified deviation from the path generated by the program. – this is the feature I will attempt to implement. The program will provide a ranked list of attractions to the user as well as directions to those locations.

Auto-completing addresses is another potential additional feature