PROJECT ABSTRACT FOR CS 368 FALL 2016 FROM CHARLES B. SMALL III AND CHARLES GROSZ

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Motivation for the project

Our goal is to provide an application allowing a user to plan for a journey by providing distance between two cities on a trip and total distance which will:

1) Enable a user of our projection to best know the total distance between the cities and for the entire trip if they have an established itinerary

2) Create an itinerary which will allow them to travel between a list of cities via the shortest distance between a starting and end city.

Problem Statement

Using a list of cities, a user will want to:

(1) Make an ordered list of cities with the distance between each city and total distance.

(2) User has a list of desired cities and wants their trip to be the shortest path between a starting and ending city.

Our Proposed Solution

Given a text file which can be updated, provide the user with a graphical user interface (GUI) to create a list of desired cities to visit with or without starting and ending cities. Based on this sublist, our project will then give the user two options list above.

Distances between the cities will be calculated based on the longitude and latitude via the Haversine formula (see <https://en.wikipedia.org/wiki/Haversine> formula).

For a general list of desired cities to visit, after specifying a starting and ending city, calculated the shortest path via Dijkstra’s algorithm (see [https://en.m.wikipedia/wiki/Dijkstra%27\_algorithm](https://en.m.wikipedia/wiki/Dijkstra%2527_algorithm)).

We plan on create classes for the graph, City objects and GUI along with a primary class for main().

Please contact either of us for any questions.