CPS Project Proposal

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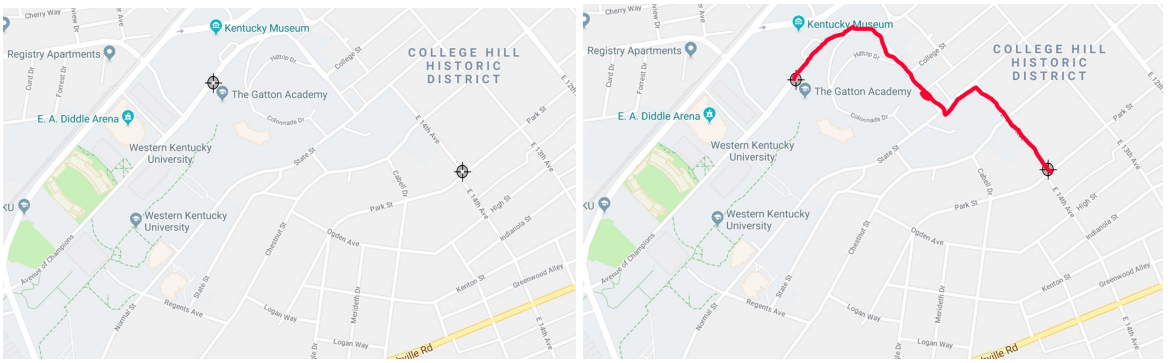
Description:

The ultimate outcome of this project is an extension of the Gatton Academy Transportation Application and Website that is responsible for calculating the distances of given routes and deciding whether or not they are possible to traverse in the given time-frames for n number of drivers.

The largest obstacle that we expect to face is calculating the estimated time of arrival from a picture of a map and two points, taking speed limits into account. Auxiliary functions that we expect to have difficulty implementing are making the map draggable and zoomable.

Appearance:



Pardon the poorly drawn route :(

User Interactions:

- The user will be able to scroll across a map and use locators to select their starting point and their destination.
- The map will be zoomable to ease the process of selecting the start and end points.
- The user must also input the number of available drivers and the time frame in which they must complete their trips.
- The user will be given in return an efficient travel route displayed on a map, and if the timeframe in which the user has given is feasible.

Milestone

1. Basic user interface is completed.

The locator-pane with the background of the map as well as the ability to place pairs of locators is implemented.

The user will also be able to enter the addresses of their starting point and destinations directly.

DEADLINE: April 7 (COMPLETED)

2. Mathematica will be able to find and navigate roads on a map and store it in some way.
DEADLINE: April 17

3. The ability to calculate the most efficient path between two points on the map while following roads is developed.
DEADLINE: April 19

4. The program will be able to estimate arrival times, while taking speed limits of roads into account.
DEADLINE: April 22

5. The function to check whether or not all of the routes given their respective start times are possible for a given number of drivers is developed.
DEADLINE: April 28

6. Each route will be able to have given number of passengers, and drivers' cars will be able to have given amount of passenger space, while keeping the previous milestone's function intact.
DEADLINE: If we have time.