Final Project Details & Proposal

Project Title:

City Navigation

Project Description:

This application will allow users to navigate them from place to place in a city. The navigation data set contains the place and road names, address of each place, time for each road to get through, congestion time for each road, and the cost of each road. The application will ask the user for information about the start and the destination as well as the time; users can enter either the name or the address for the place. There will be 3 choices of the navigation: least distance, least cost, least time, and. Users can choose one of the options and the application will show the details about the route. Last and not least, users can insert or remove a specific road or place.

Planned Data Structure/Algorithm and Justification:

- Dijkstra's Shortest Path Algorithm
    - This is for finding the shortest, least time, or least cost from palace to place.
    - additionally, will use import hashtable for store data, priorityQueue and linkedList to manage the data.

Proposed Unit Tests:

1. validating that invalid place name entered by user: blank name, a name doesn't exist in the system, or the start==destination.
2. validating that system successfully insert a road
3. Validating that getting impossible routes: no connection between two places
4. Validating that insert locations or roads with a duplicate name.
5. Validating that remove a location/road within an empty data set, or a location/road does NOT exists in the system