**CMPE 365**

**Uber**

Suppose that we think of the street network of a city as a graph, whose nodes are locations, and whose edges are labelled with the time it takes to traverse them.

There are requests to the system which include a start location and a finish location, and a time stamp. Uber drivers fulfill requests in the order of their start time stamp, moves to the pickup location (one of the nodes, for simplicity), and then takes the passenger to the finish location they requested; and then fulfills the next outstanding request, and so on.

You are given (a) the static data describing the city layout and street level transit times, and (b) a sequence of requests for service. The output of your algorithm is the total length of time that passengers spent waiting (i.e. a request start time was earlier than the arrival time of the Uber driver) and you should try to make this as small as possible.

Start by assuming there are 2 Uber drivers, but discuss how you code (and results) would change if the number of drivers was an input to your system.

Since everyone will have the same data, you will be able to compare your performance with others.