15.094/SMA5223 Systems Optimization: Models and Computation

Traveling Salesman Problem Challenge

The traveling salesman problem (TSP) is one of the most famous (notorious) and practically useful generic models in the field of combinatorial optimization. The problem seeks a minimum cost (total distance) tour (closed path) that includes each of a given set of points.

As preparation for class discussion of this problem, we will consider a 26-city example (26 of the United States major freight trucking cities). You will try to find a tour with the least total distance that passes through all these cities. Keep track of the best tour that you have generated (bring it to class) and also remember (in a very general sense) the procedure you used to find this tour.

Do not spend a lot of time trying to find the best tour (perhaps a half-hour). The purpose of the TSP is to become familiar with the general problem and to think about ways you might solve it and to have some fun.

REMEMBER: a tour should visit each city exactly once and be a closed loop, that is return from the last city visited to the first city.