1014-T1-624 **Sean L Forman*** (sforman@sju.edu), Department of Mathematics and CS, Saint Joseph's Univ, 5600 City Ave, Philadelphia, PA 19119. *TSP Generator: On-line generation of real-life traveling salesman problems.*

Hamiltonian Circuits and by extension the Traveling Salesman Problem (TSP) are often covered as part of Operations Research and Contemporary Mathematics courses. TSP requires the determination of the shortest circuit (a tour that begins and ends in the same city) connecting a given set of cities. Typically, the students are introduced to the TSP and shown several common heuristics that can be used to find an approximate (sometimes optimal) solution.

This paper describes a web application, TSP Generator, that takes as an input a list of user-provided cities (up to 30), and produces a variety of outputs useful to an instructor or student covering this subject. A description of how this application has been used in Saint Joseph's Topics in Contemporary Mathematics and in Operations Research courses will be given as well.

TSP Generator will produce the city-to-city distance matrix, will find approximate solutions using two common heuristics, the Cheapest Link Algorithm and the Repetitive Nearest Neighbor Algorithm, and in some cases, will find the optimal circuit among all possible circuits. Finally, a map of the inputted cities is displayed.

http://www.sju.edu/~sforman/research/usa_tsp.html (Received September 21, 2005)