

1.1 Approximate Approaches

1.1.1 Christofide

1.1.2 Greedy Heuristic

The complexity of the greedy heuristic approach is $O(n^2 \log_2(n))$. The solution produced will be 15%-20% within the Held-Karp lower bound.

1. Sort the edges E , of graph $G = (V, E)$, by distance.
2. From the available edges, select the shortest, and add it to the final tour. The edge may not be added to our tour if it violates the following conditions.
 - (a) Tour cannot have a cycle of less than N edges.
 - (b) No node may have a degree greater than 2.
3. Has the the tour accumulated N edges? If not, repeat the previous step.

1.1.3 2-opt & 3-opt

1.2 Genetic Algorithm

1 Agglomerithms