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Algorithm A: Lin-Kernighan

Algorithm B: Two-Opt

Description of enhancement of Algorithm A:

*To help Lin-Kernighan reach a better tour, I have implemented a small quick greedy-like algorithm (but not an actual greedy algorithm) in a function called greed.*

*It begins by greedily selecting cities, not necessarily going through all the cities, and whichever cities have not been appended, will be concatenated with the list at the end of the function (for time purposes)*

*Its purpose is to run before the LK Algorithm to give it a better starting tour.*

*I have also included an if statement in the selector function to sometimes ignore three-opt and choose Two-Opt, or vice versa, based on distance as this will provide a faster and better tour. This enhancement has managed to improve my runtime, decreasing the average runtime per algorithm by half.*

*Both these enhancements have improved the tours for the city files 17 by 12%, 21 by 2%, and 175 by 1%*

*Alternatively, I have included a line of code to make sure that the runtime of the algorithm does not exceed 1 minute, which may negatively influence larger city sets, but will be better than going over time and getting a 0*

Description of enhancement of Algorithm B:

*Similarly, to help Two-Opt reach a better tour, I have implemented a small quick greedy-like algorithm (but not an actual greedy algorithm) in a function called greed.*

*It begins by greedily selecting cities, not necessarily going through all the cities, and whichever cities have not been appended, will be concatenated with the list at the end of the function (for time purposes)*

*Its purpose is to run before the Two-Opt Algorithm to give it a better starting tour.*

*It has improved the tours for the city files 17, 42, and 175 all by approximately 2%.*

*Alternatively, I have included a line of code to make sure that the runtime of the algorithm does not exceed 1 minute, which may negatively influence larger city sets, but will be better than going over time and getting a 0.*