Hill Climbing and Simulated Annealing

Solve the Traveling Sales Person problem using the **steepest ascent hill climbing algorithm** and **simulated annealing algorithm**.

- A permutation of the cities defines each route. For example, the route, $[3, 1, 0, 2]$, means that the salesperson is starting his tour from city 3 to 1 to 0 to 2 and back to city 3.
- The neighbors of each state(route) are found by randomly picking two cities in the route and swapping them.
- Terminate the hill climbing algorithm when there is no shorter route available from the current state.
- Terminate the simulated annealing algorithm after 1000 iterations.
- You must plot the shortest route found by both algorithms.
- A template code is available here.
- Sample inputs are given as 4 separate CSV files. For each input case run hill climbing and simulated annealing algorithm and log the results in this report.
- Submit the .ipynb file and the report.