

Cities	Node count	Distance	Time taken(ms)
Djibouti	38	9748.95	0ms
Finland	10,639	655,364	149 ms
Oman	1,979	120,542	11 ms
Greece	9,882	391,428	140 ms

The University of Waterloo's best tours for various countries showed remarkable differences in both tour lengths and the time taken to compute them. Across Djibouti, Finland, Oman, and Greece, the tours generated by the Nearest Neighbor algorithm were notably longer compared to the best tours achieved by the University of Waterloo. This divergence in tour length might suggest that the university possibly employed a different, more optimized algorithm than the Nearest Neighbor approach.

However, it's worth noting that despite the longer tours, the Nearest Neighbor algorithm demonstrated significantly faster computation times. This speed can be attributed to the algorithm's nature as a greedy algorithm. Greedy algorithms make decisions locally, choosing the best immediate option at each step with the expectation of reaching the global best. In the case of the Nearest Neighbor algorithm, it consistently selects the closest unvisited city from the current position in constructing the tour. This simplicity and local optimization enable quicker computation times.

Nonetheless, the speed of the Nearest Neighbor algorithm comes at a trade-off. Its heuristic nature, while efficient, doesn't guarantee the most optimal or shortest tour, especially as the number of cities increases. For smaller tours, the algorithm performs reasonably well, but its choices become less optimal as the complexity of the tour grows.

Therefore, while the Nearest Neighbor algorithm offers faster computation due to its simplicity and local optimization strategy, it might overlook better paths, resulting in

longer tours compared to those obtained by more complex, globally aware algorithms. Opting for the Nearest Neighbor approach could offer quicker computation times, but it might not yield the most optimal results for larger or more intricate tours.