File: Code5.cpp
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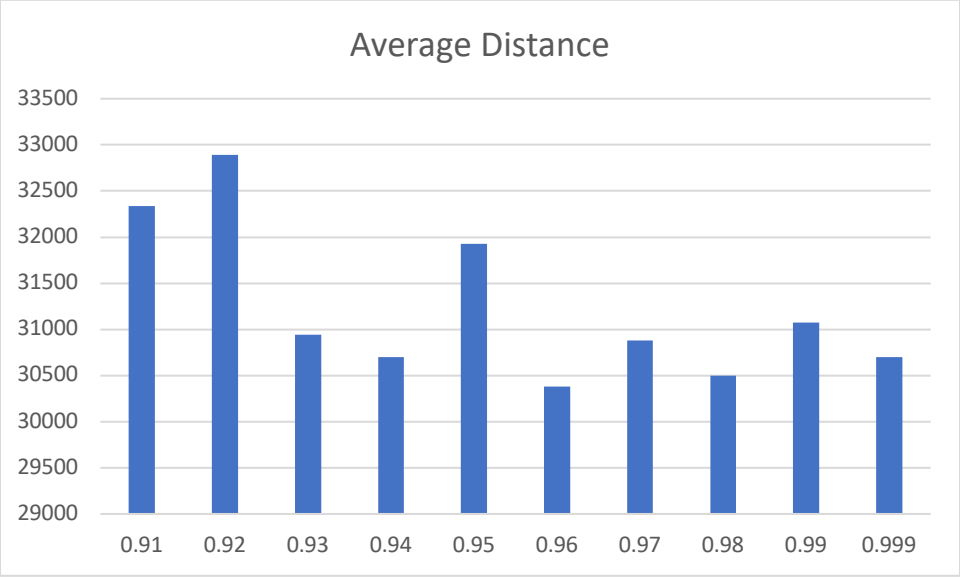
Description: Using Hill Climbing and Simulated Annealing to solve TSP problems.

Question TASK 2B:

The best T_start temperature is 380, from task 2As

ß	Total iteration times	Distance 1	Distance 2	Distance 3	Distance 4	Distance 5	average
0.91	210	32014	30438	35653	32441	31154	32340
0.92	237	30107	32262	30438	34535	37102	32888.8
0.93	273	30107	30178	30107	32163	32163	30943.6
0.94	320	30520	30977	31321	30344	30344	30701.2
0.95	386	32283	34284	31029	30344	31688	31925.6
0.96	484	30344	31154	30107	30178	30107	30378
0.97	649	30344	30683	30454	30683	32228	30878.4
0.98	978	30449	31154	30454	30107	30344	30501.6
0.99	1966	31154	30107	30107	30344	33666	31075.6
0.999	19746	32441	30520	30178	30178	30178	30699
							31233.18



We can see from the graph above, as the beta getting close to 1, the average distance is getting smaller. And when the beta is 0.96, I get the smallest average distance, 0.96 is the best cooling constant.

The maximum final optimal distance is 32888 which the beta is 0.92;

The minimum final optimal distance is 30378 which beta is 0.96;
The average final optimal distance is 31233 in this program of the 11*5 tests.