Karl Henrik Elg Barlinn
26.02.2020

Assignment #3

Instance #1 (Call_7_Vehicle_3)				
	Average Objective	Best Objective	Improvement (%)	Running Time (average)
Random Search	3286422.0	3286422	0.00%	57 ms
Local Search	1551640.0	1476444	55.07%	52 ms
Simulated Annealing	1494811.0	1476444	55.07%	90 ms

Best solution [3, 3, 0, 7, 1, 7, 1, 0, 5, 5, 6, 6, 0, 4, 4, 2, 2]

Instance #2 (Call_18_Vehicle_5)				
	Average Objective	Best Objective	Improvement (%)	Running Time (average)
Random Search	8761492.0	8761492	0.00%	94 ms
Local Search	3391452.0	2968311	66.12%	62 ms
Simulated Annealing	3094205.0	2686290	69.34%	82 ms

Best solution [4, 14, 4, 14, 9, 9, 0, 15, 15, 16, 16, 10, 10, 3, 3, 0, 18, 11, 6, 1, 11, 6, 1, 18, 0, 12, 5, 5, 12, 0, 8, 7, 7, 8, 2, 2, 0, 13, 13, 17, 17]

Instance #3 (Call_035_Vehicle_07)				
	Average Objective	Best Objective	Improvement (%)	Running Time (average)
Random Search	1.8322178E7	18322178	0.00%	123 ms
Local Search	9717135.0	8818566	51.9%	55 ms
Simulated Annealing	6731232.0	6053701	67.0%	131 ms

Best solution [12, 8, 12, 8, 4, 4, 0, 23, 23, 22, 22, 33, 33, 9, 9, 0, 7, 5, 5, 7, 17, 35, 17, 35, 14, 24, 14, 27, 27, 31, 31, 24, 0, 25, 25, 29, 11, 11, 29, 1, 26, 26, 1, 0, 19, 18, 30, 19, 18, 30, 2, 32, 32, 2, 0, 21, 3, 21, 3, 10, 20, 20, 10, 0, 28, 28, 13, 13, 0, 6, 6, 16, 16, 34, 34, 15, 15]

Instance #4 (Call_080_Vehicle_20)				
	Average Objective	Best Objective	Improvement (%)	Running Time (average)
Random Search	4.2211425E7	42211425	0.00%	210 ms
Local Search	3.045567E7	28484007	32.5%	93 ms
Simulated Annealing	1.9355629E7	17736007	58.0%	292 ms

Best solution [61, 37, 61, 37, 11, 35, 35, 11, 0, 55, 67, 67, 55, 73, 73, 0, 34, 34, 51, 51, 0, 57, 72, 57, 27, 72, 27, 23, 23, 0, 47, 47, 28, 9, 28, 21, 21, 9, 0, 4, 4, 70, 70, 18, 6, 6, 18, 0, 39, 39, 2, 2, 58, 58, 0, 12, 12, 17, 17, 78, 78, 0, 53, 53, 5, 31, 5, 75, 31, 75, 0, 42, 41, 42, 41, 0, 14, 60, 40, 60, 14, 40, 0, 33, 33, 24, 13, 24, 13, 43, 43, 0, 3, 29, 3, 29, 15, 15, 0, 48, 59, 48, 54, 59, 54, 7, 71, 71, 7, 0, 45, 8, 8, 45, 0, 46, 46, 56, 56, 0, 74, 36, 36, 74, 0, 77, 77, 0, 79, 30, 30, 79, 65, 10, 65, 10, 25, 25, 0, 64, 38, 1, 64, 1, 38, 0, 16, 16, 19, 19, 20, 20, 22, 22, 26, 26, 32, 32, 44, 44, 49, 49, 52, 52, 62, 62, 66, 66, 68, 68, 69, 69, 76, 76, 80, 80, 50, 50, 63, 63]

Instance #5 (Call_130_Vehicle_40)				
	Average Objective	Best Objective	Improvement (%)	Running Time (average)
Random Search	7.5446687E7	75446687	0.00%	295 ms
Local Search	5.9988955E7	57646760	23.6%	125 ms
Simulated Annealing	3.7813836E7	35070442	53.5%	488 ms

Best solution [82, 82, 61, 61, 0, 64, 64, 20, 20, 0, 122, 102, 102, 122, 119, 119, 79, 79, 0, 23, 23, 0, 50, 50, 4, 4, 0, 22, 22, 0, 114, 92, 114, 14, 14, 92, 0, 2, 12, 2, 12, 0, 59, 72, 72, 59, 100, 100, 0, 39, 39, 70, 70, 0, 28, 28, 112, 55, 112, 55, 0, 120, 120, 1, 53, 53, 1, 0, 42, 8, 42, 8, 113, 113, 0, 84, 84, 98, 75, 98, 75, 0, 104, 104, 78, 67, 78, 67, 0, 73, 73, 0, 21, 21, 19, 36, 36, 19, 0, 90, 90, 0, 62, 62, 10, 10, 0, 17, 17, 66, 124, 66, 124, 0, 123, 38, 123, 38, 0, 57, 83, 89, 89, 83, 57, 0, 18, 30, 128, 30, 18, 128, 0, 74, 68, 68, 127, 127, 74, 0, 91, 91, 0, 101, 101, 88, 88, 0, 80, 13, 13, 80, 0, 37, 7, 34, 7, 37, 34, 81, 129, 129, 81, 0, 87, 87, 99, 99, 0, 0, 103, 103, 0, 27, 27, 95, 95, 0, 110, 31, 110, 31, 0, 9, 9, 46, 46, 0, 32, 32, 69, 69, 0, 105, 105, 11, 24, 11, 24, 0, 54, 54, 15, 15, 0, 16, 16, 60, 44, 60, 44, 0, 107, 116, 107, 116, 3, 3, 0, 48, 111, 48, 111, 0, 5, 5, 6, 6, 25, 25, 26, 26, 29, 29, 33, 33, 35, 35, 41, 41, 43, 43, 45, 45, 47, 47, 49, 49, 51, 51, 52, 52, 56, 56, 58, 58, 63, 63, 65, 65, 71, 71, 76, 76, 77, 77, 85, 85, 86, 86, 93, 93, 94, 94, 96, 96, 97, 97, 106, 106, 108, 108, 109, 109, 115, 115, 118, 118, 121, 121, 125, 125, 126, 126, 130, 130, 117, 117, 40, 40]