ECE 7650 Applied Computational Intelligence

Simulated Annealing Investigation

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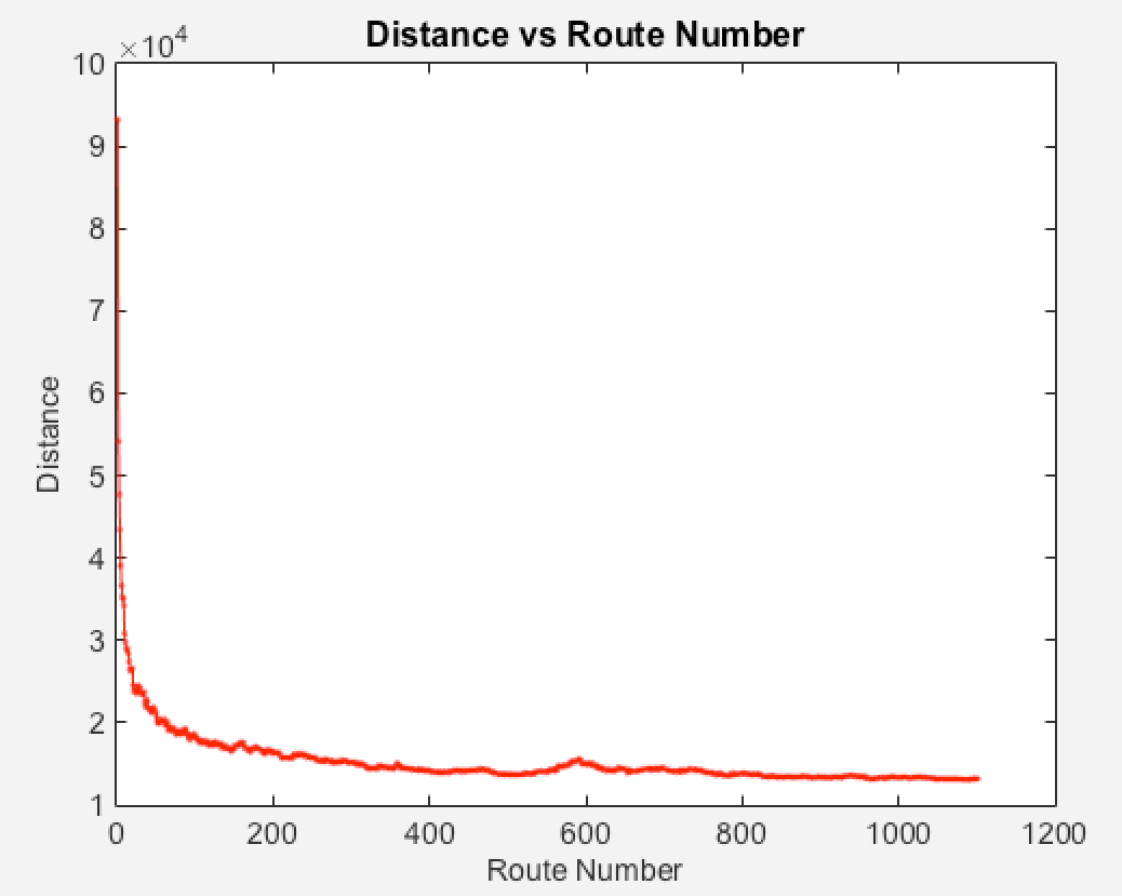
The following steps have been taken to achieve the best lowest distance:

- **Changing the probability**
- **Changing the Equilibrium Loop**
- **Employing restart**

While changing the probability of accepting worse solution at the start to 0.2, Equilibrium Loop to 1000 and restart while i=550, we get the below D array figure and solution:

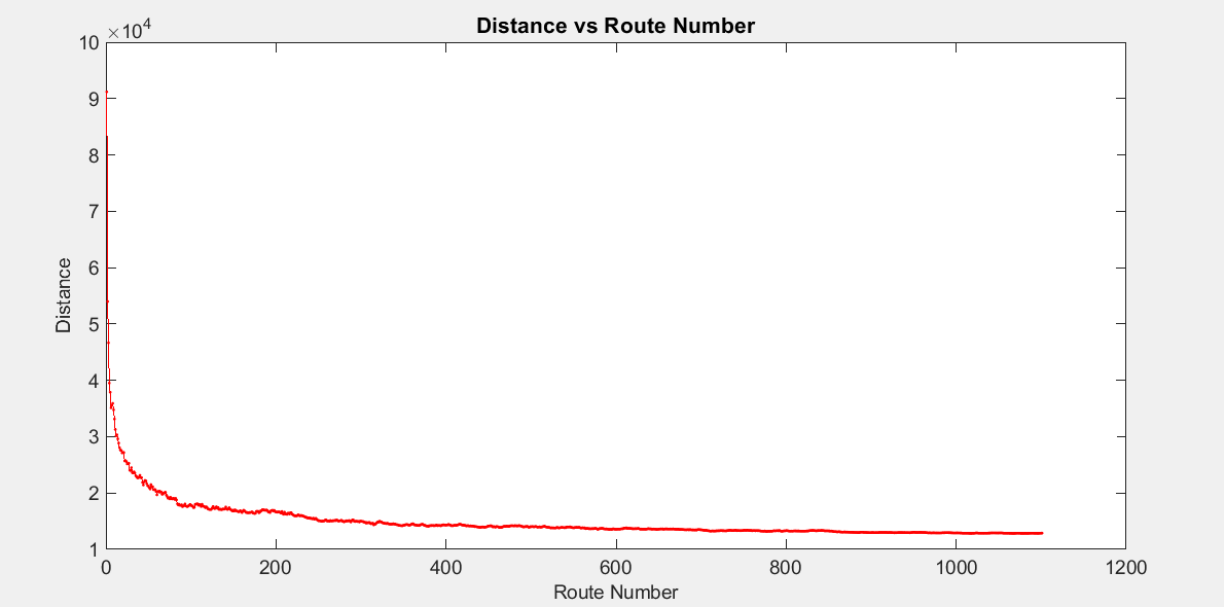


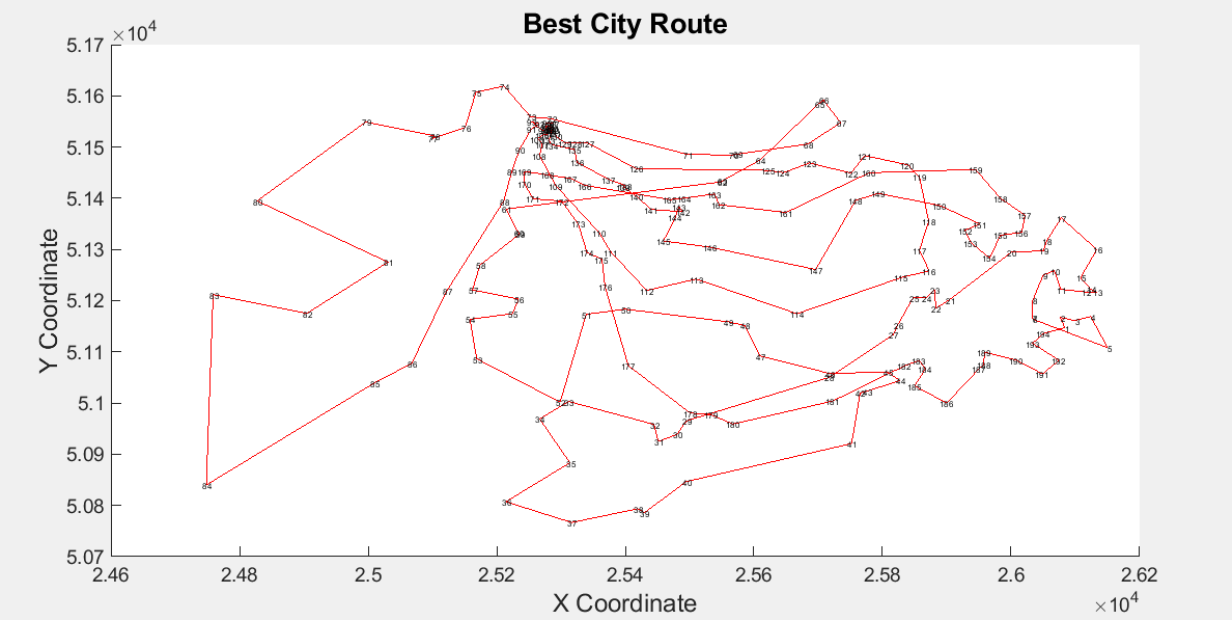
Best solution: 3 5 7 11 14 23 25 80 87 141 147 162 171 185 193 188 191 189 192 190 187 183 179 186 194 182 176 169 163 161 156 140 127 114 113 109 102 91 64 34 40 39 51 68 84 107 108 110 112 115 116 117 121 120 129 135 160 166 167 170 175 173 174 172 164 158 155 148 143 133 128 124 123 100 73 58 43 44 12 9 10 15 19 56 52 54 49 53 48 46 42 35 32 30 31 38 50 55 41 47 27 37 61 67 66 105 106 118 131 136 151 159 168 180 178 181 177 184 165 152 150 153 157 154 146 149 145 130 111 104 101 99 94 89 90 98 85 86 65 20 63 36 59 62 82 71 76 78 75 72 60 45 28 29 22 21 18 33 57 70 77 79 81 83 95 119 126 125 132 134 137 142 138 139 144 122 103 93 96 97 92 88 74 69 26 24 17 13 16 8 6 1 4 2
Best algo objective: 13173.2469
Best global objective: 13173.2469

BEST SOLUTION:

If we do the above mentioned three steps then we get a better solution but not the best. To achieve the best solution, the restart idea has to omit.

After omitting the restart idea of the above-mentioned three changes, the best solution with changing the probability of accepting worse solution at the start to 0.2 and Equilibrium Loop to 1000 is given below:





Best solution: 186 183 187 190 194 174 173 175 177 181 184 189 192 191 188 193 185 180 178 168 157 154 153 150 144 139 138 125 99 94 90 89 62 36 63 20 65 85 86 98 130 132 134 140 137 126 114 113 109 80 71 59 16 13 23 25 14 17 26 24 21 107 108 115 123 124 128 120 112 110 100 50 30 19 15 12 9 10 5 3 7 4 2 1 6 8 11 18 22 27 31 35 32 38 41 42 55 49 48 53 54 44 46 43 40 34 39 37 57 74 78 87 102 119 141 152 147 151 148 143 133 129 121 117 116 84 73 67 61 58 56 52 47 51 66 68 77 81 79 83 88 96 95 93 91 103 122 131 136 155 162 158 159 165 167 170 171 166 160 135 118 106 105 97 92 70 64 45 29 28 33 60 69 72 75 76 82 101 104 111 127 142 146 149 145 156 161 163 164 169 176 182 172 179

Best algo objective: 12888.2049

Best global objective: 12888.2049