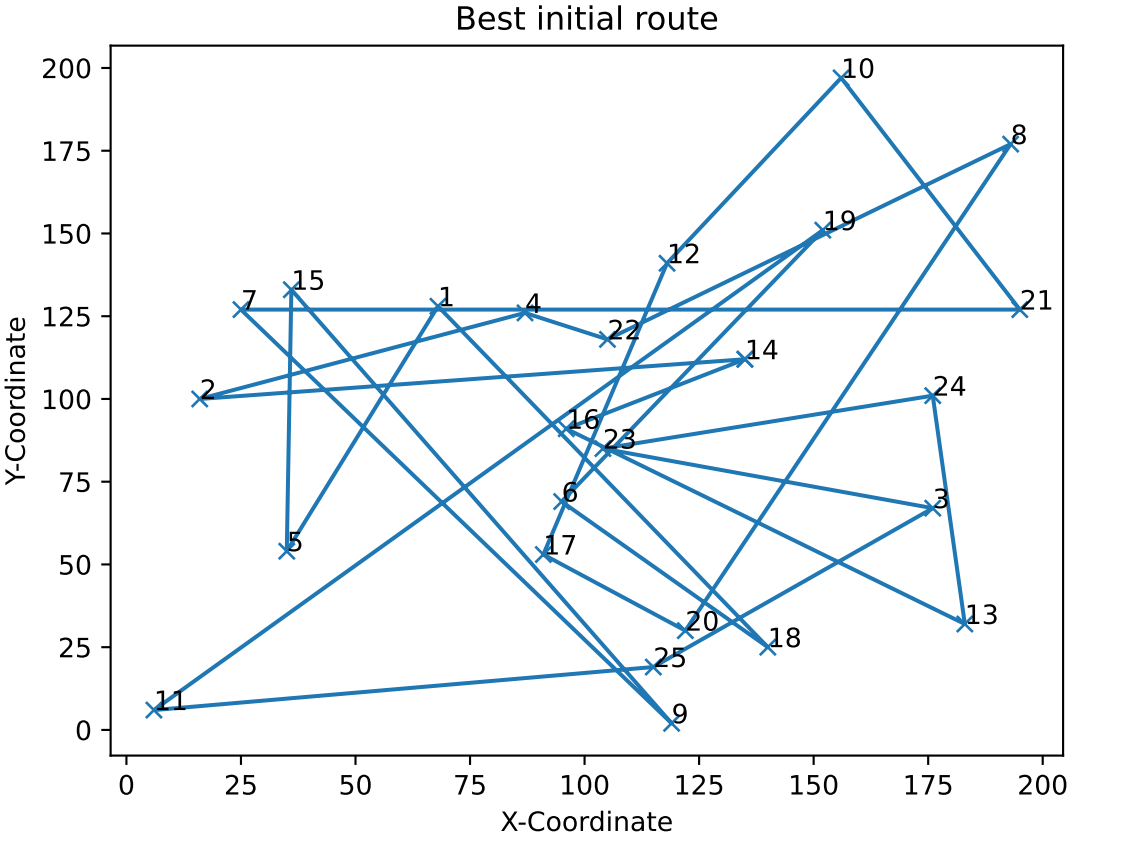
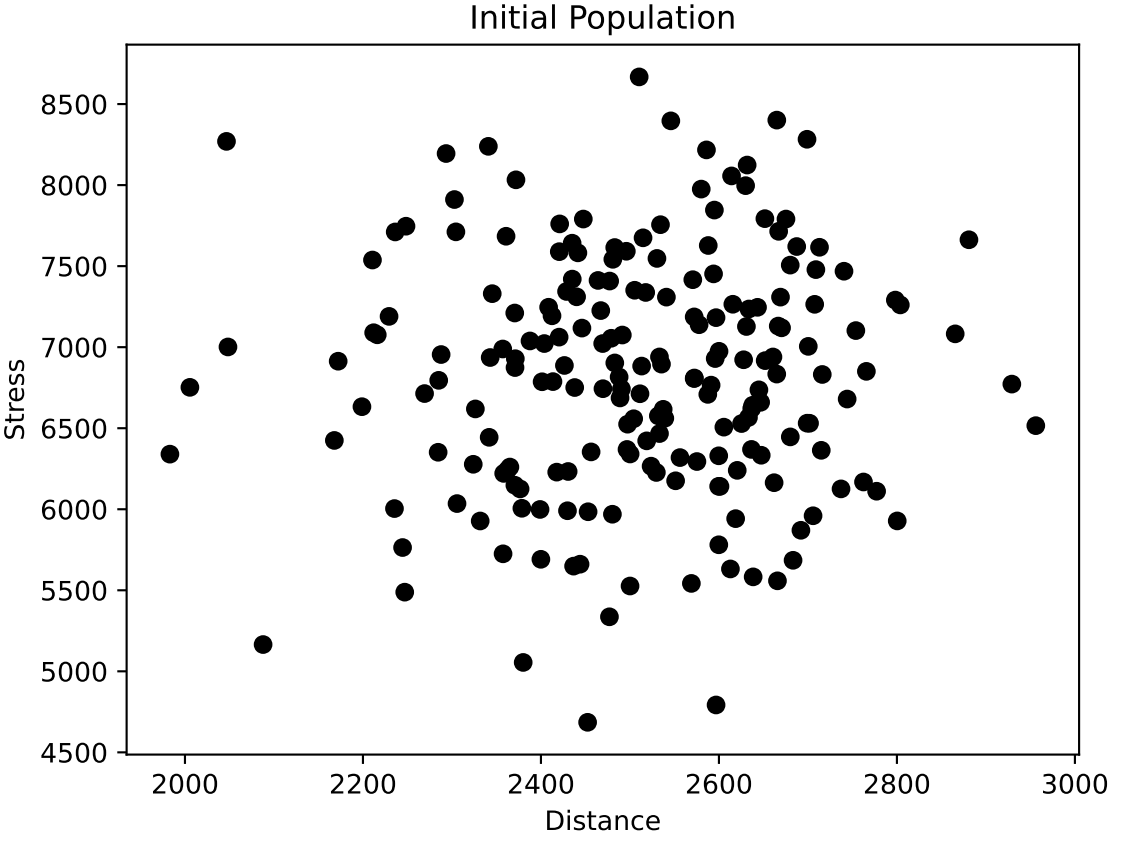
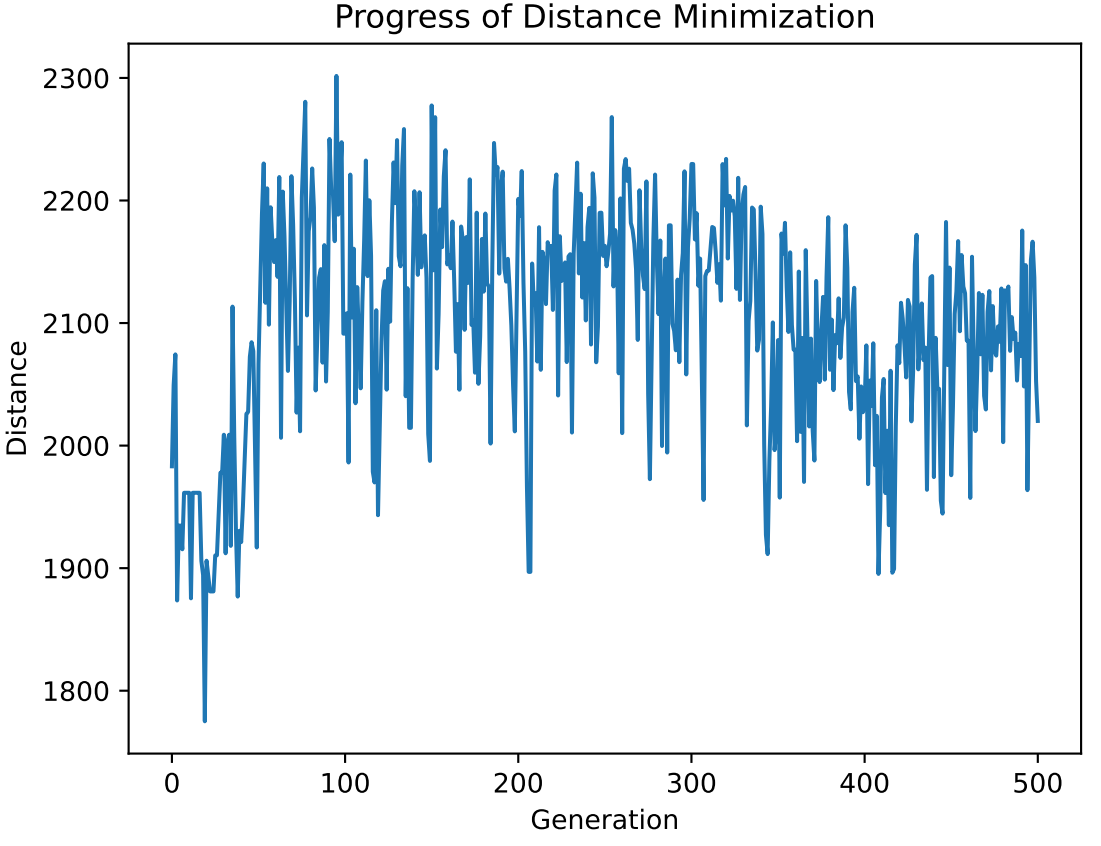
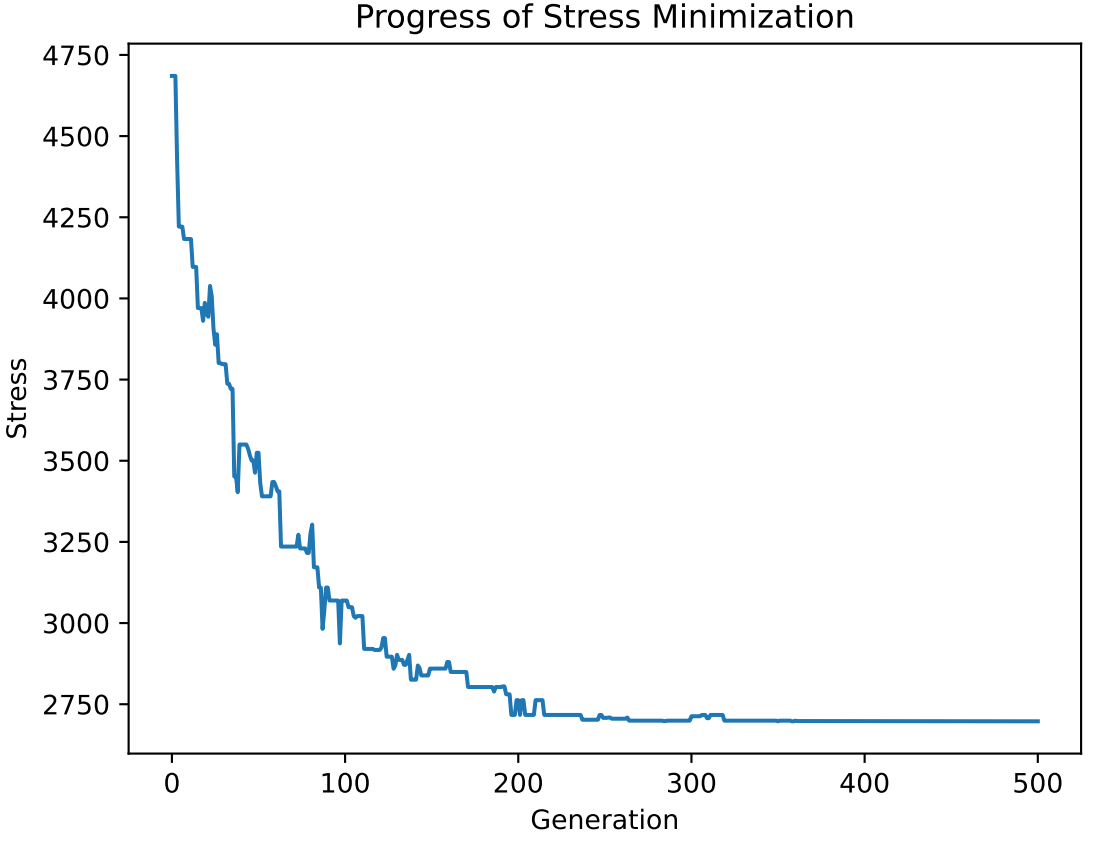
[1, 2, 3, 4, 5,
6, 7, 8, 9, 10,
11, 12, 13, 14, 15,
16, 17, 18, 19, 20,
21, 22, 23, 24, 25]

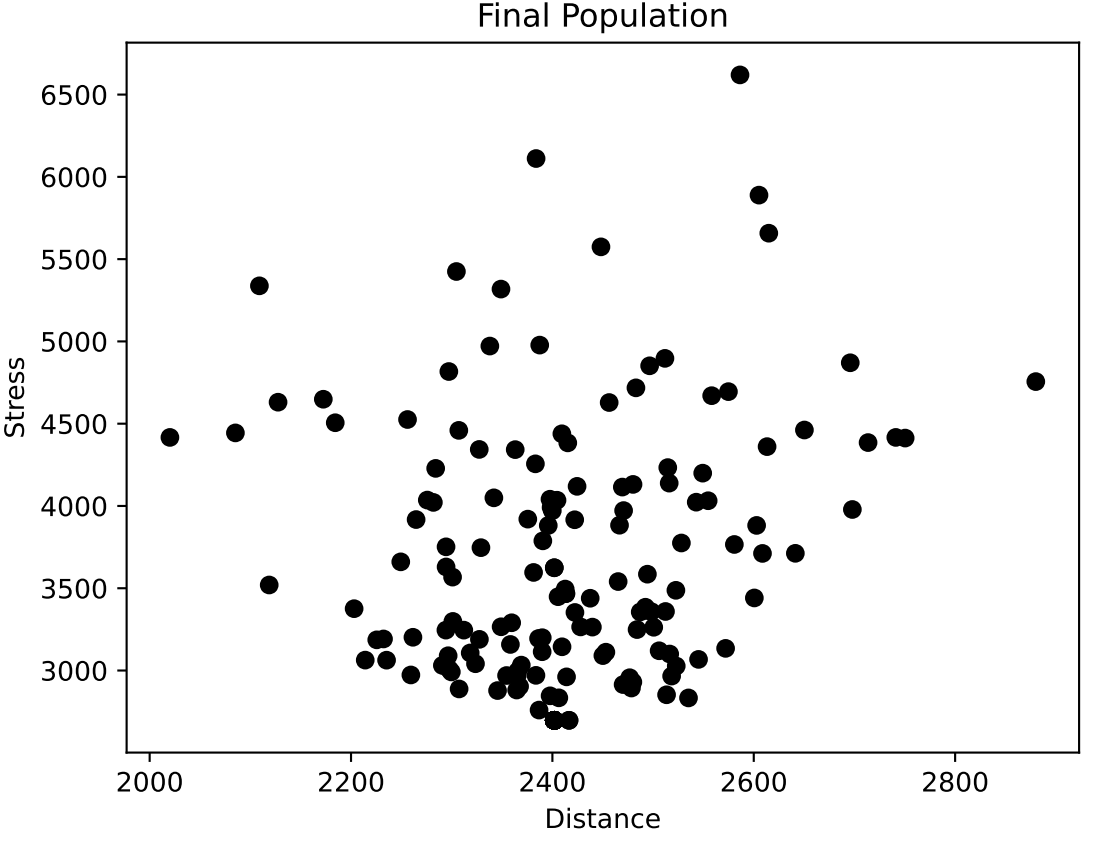

Best initial route
Y-Coordinate
X-Coordinate
0
25
50
75
100
125
150
175
200
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25


Initial Population
Stress
Distance
8500
8000
7500
7000
6500
6000
5500
5000
4500
2000
2200
2400
2600
2800
3000

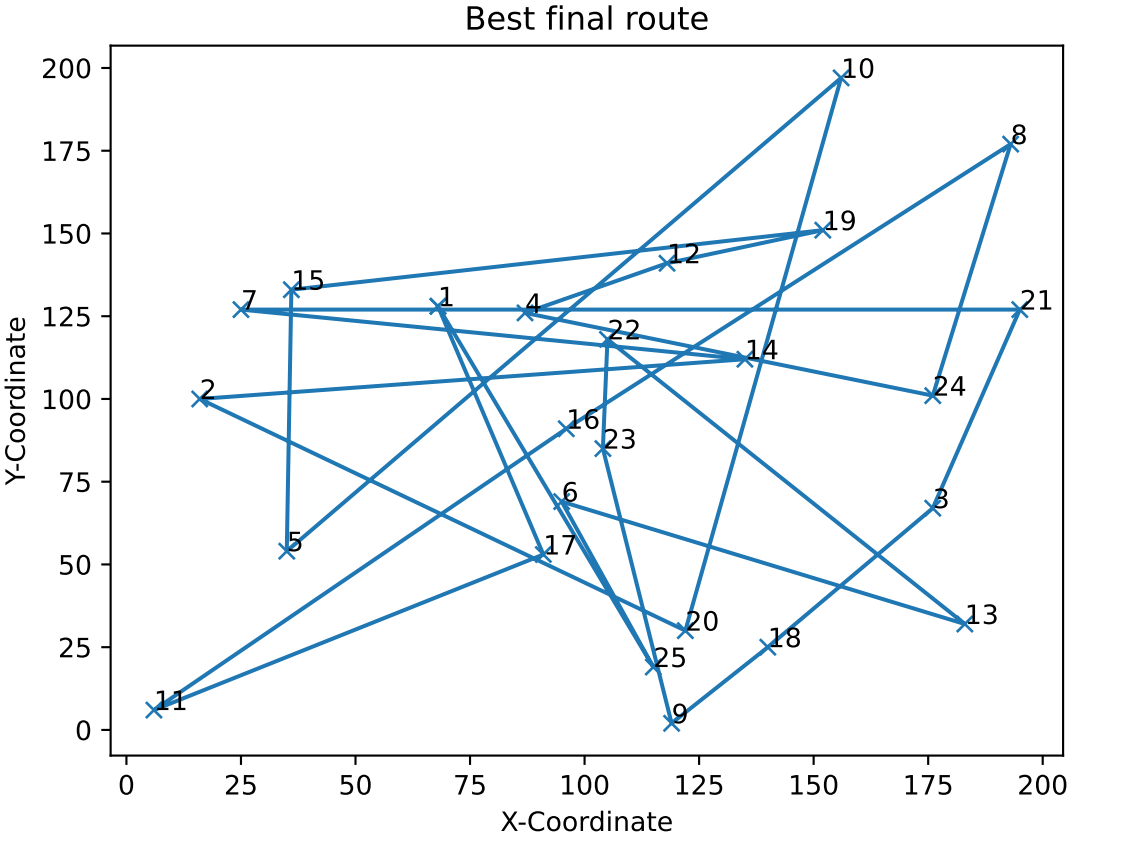

Progress of Distance Minimization
Distance
Generation
2300
2200
2100
2000
1900
1800
0
100
200
300
400
500


Progress of Stress Minimization
Stress
Generation
4750
4500
4250
4000
3750
3500
3250
3000
2750
0
100
200
300
400
500

Initial distance : 2452.450588775557
Initial stress: 4685.400000000001
Initial objective: 4685.400000000001
Final objective: 2697.3999999999996
Final distance : 2401.8751090149026
Final stress: 2697.3999999999996


Final Population
Stress
Distance
6500
6000
5500
5000
4500
4000
3500
3000
2000
2200
2400
2600
2800

[1, 17, 11, 16, 8,
24, 4, 12, 19, 15,
5, 10, 20, 2, 14,
7, 21, 3, 18, 9,
23, 22, 13, 6, 25]


Best final route
Y-Coordinate
X-Coordinate
0
25
50
75
100
125
150
175
200
10
8
19
12
15
7
1
4
21
22
14
2
24
16
23
6
3
5
17
13
20
18
25
11
9