

LAMPIRAN

Tabel 1 Jarak Pada Titik Lokasi Awal

No	Jarak antar Gen	(m)
1	1	-
2	2	108.7
3	3	31.03
4	4	13.77
5	5	59.79
6	6	37.5
7	7	20.95
8	8	140.86
9	9	58.43
10	10	40.37
11	11	40.37
12	12	143.38
13	13	171
14	14	161.68
15	15	75.18
16	16	126.96
17	17	107.22
18	18	105.46
19	19	77.64
20	20	96.89
21	21	35
22	22	238.78
23	23	256.11
24	24	145.53
25	25	650.61
26	26	255.69
27	27	264.1
28	28	38.61
29	29	222.75
30	30	167.64
31	31	205.24
32	32	212.64
33	33	207.51
34	34	96.07

35	35	104.72
36	36	241.66
37	37	530.27
38	38	300.98
39	39	239.99
40	40	236.75
41	41	6.52
42	42	147.07
43	43	51.22
44	44	181.18
45	45	69.09
46	49	291.16
47	50	194.5
48	51	11.98
49	52	214.82
50	61	126.85
51	61 ke ODC	147.7
52	Total	7709.92

Tabel 2 Titik Lokasi Perangkat ODP

No	Lokasi	Latitude	Longitude
1	SGB FS 01	331.004	11667.16
2	SGB FS 02	331.017	11667.05
3	SGB FS 03	330.988	11667.05
4	SGB FS 04	330.989	11667.04
5	SGB FS 05	330.937	11667.04
6	SGB FS 06	330.9	11667.04
7	SGB FS 07	330.924	11667.04
8	SGB FS 08	330.927	11666.99
9	SGB FS 09	330.937	11666.93
10	SGB FS 10	330.944	11666.89
11	SGB FS 11	330.976	11666.87
12	SGB FS 12	330.919	11666.78
13	SGB FS 13	330.868	11666.83
14	SGB FS 14	330.923	11666.92
15	SGB FS 15	330.854	11666.89
16	SGB FS 16	330.752	11666.85
17	SGB FS 17	330.76	11666.78
18	SGB FS 18	330.693	11666.74

19	SGB FS 19	330.688	11666.81
20	SGB FS 20	330.594	11666.83
21	SGB FS 21	330.581	11666.85
22	SGB FS 22	330.476	11666.84
23	SGB FS 23	330.527	11666.79
24	SGB FS 24	330.669	11666.76
25	SGB FS 25	331.048	11666.22
26	SGB FS 26	331.011	11666.13
27	SGB FS 27	331.022	11666.08
28	SGB FS 28	330.983	11666.07
29	SGB FS 29	331.138	11666.01
30	SGB FS 30	331.156	11665.84
31	SGB FS 31	331.031	11665.8
32	SGB FS 32	331.051	11665.98
33	SGB FS 33	330.959	11665.88
34	SGB FS 34	330.952	11665.97
35	SGB FS 35	330.942	11666.08
36	SGB FS 36	330.765	11666.16
37	SGB FS 37	331.045	11666.61
38	SGB FS 38	330.981	11666.59
39	SGB FS 39	330.845	11666.56
40	SGB FS 40	330.892	11666.53
41	SGB FS 41	330.895	11666.52
42	SGB FS 42	330.865	11666.42
43	SGB FS 43	330.909	11666.45
44	SGB FS 44	330.836	11666.37
45	SGB FS 45	330.791	11666.36
46	SGB FS 49	330.5	11666.32
47	SGB FS 50	330.555	11666.32
48	SGB FS 51	330.563	11666.32
49	SGB FS 52	330.611	11666.3
50	SGB FS 61	330.491	11666.45

Tabel 3 Jarak Pada Perangkat FTTH

No	Parameter	OLT ke ODC (Km)	ODC ke ODP (Km)	ODP ke ONT (Km)
1	1	0.53	2.94321	0.09044
2	2	0.53	2.83451	0
3	3	0.53	2.80348	0
4	4	0.53	2.78971	0
5	5	0.53	2.72992	0
6	6	0.53	2.69242	0
7	7	0.53	2.67147	0
8	8	0.53	2.53061	0
9	9	0.53	2.47218	0
10	10	0.53	2.43181	0
11	11	0.53	2.39144	0
12	12	0.53	2.24806	0
13	13	0.53	2.07706	0
14	14	0.53	1.91538	0
15	15	0.53	1.8402	0
16	16	0.53	1.71324	0
17	17	0.53	1.60602	0
18	18	0.53	1.50056	0
19	19	0.53	1.42292	0
20	20	0.53	1.32603	0
21	21	0.53	1.29103	0
22	22	0.53	1.05225	0
23	23	0.53	0.79614	0
24	24	0.53	0.65061	0
25	25	0.53	2.5469	0
26	26	0.53	2.29121	0
27	27	0.53	2.02711	0
28	28	0.53	1.9885	0
29	29	0.53	1.76575	0
30	30	0.53	1.59811	0
31	31	0.53	1.39287	0
32	32	0.53	1.18023	0
33	33	0.53	0.97272	0

34	34	0.53	0.87665	0
35	35	0.53	0.77193	0
36	36	0.53	0.53027	0
37	37	0.53	1.70027	0
38	38	0.53	1.39929	0
39	39	0.53	1.1593	0
40	40	0.53	0.92255	0
41	41	0.53	0.91603	0
42	42	0.53	0.76896	0
43	43	0.53	0.71774	0
44	44	0.53	0.53656	0
45	45	0.53	0.46747	0
46	46	0.53	0.54815	0
47	47	0.53	0.35365	0
48	48	0.53	0.34167	0
49	49	0.53	0.12685	0
50	50	0.53	0.1477	0.02422

Tabel 4 Perhitungan Link Power Budget Downlink

No	Total (dB)	Pr (dBm)
1	17.8641	-18.8641
2	17.8402	-18.8402
3	17.8334	-18.8334
4	17.8303	-18.8303
5	17.8172	-18.8172
6	17.8089	-18.8089
7	17.8043	-18.8043
8	17.7733	-18.7733
9	17.7605	-18.7605
10	17.7516	-18.7516
11	17.7427	-18.7427
12	17.7112	-18.7112
13	17.6736	-18.6736
14	17.6380	-18.638
15	17.6214	-18.6214
16	17.5935	-18.5935
17	17.5699	-18.5699
18	17.5467	-18.5467

19	17.5296	-18.5296
20	17.5083	-18.5083
21	17.5006	-18.5006
22	17.4481	-18.4481
23	17.3918	-18.3918
24	17.3597	-18.3597
25	17.7769	-18.7769
26	17.7207	-18.7207
27	17.6626	-18.6626
28	17.6541	-18.6541
29	17.6051	-18.6051
30	17.5682	-18.5682
31	17.5230	-18.523
32	17.4763	-18.4763
33	17.4306	-18.4306
34	17.4095	-18.4095
35	17.3864	-18.3864
36	17.3333	-18.3333
37	17.5907	-18.5907
38	17.5244	-18.5244
39	17.4717	-18.4716
40	17.4196	-18.4196
41	17.4181	-18.4181
42	17.3858	-18.3858
43	17.3745	-18.3745
44	17.3346	-18.3346
45	17.3194	-18.3194
46	17.3372	-18.3372
47	17.2944	-18.2944
48	17.2918	-18.2918
49	17.2445	-18.2445
50	17.2491	-18.2491

Tabel 5 Link Power Budget Uplink

No	Total (dB)	Pr (dBm)
1	18.3473	-19.3473

2	18.2776	-19.2776
3	18.2667	-19.2667
4	18.2619	-19.2619
5	18.2410	-19.241
6	18.2279	-19.2278
7	18.2205	-19.2205
8	18.1712	-19.1712
9	18.1508	-19.1508
10	18.1366	-19.1366
11	18.1225	-19.1225
12	18.0723	-19.0723
13	18.0125	-19.0125
14	17.9559	-18.9559
15	17.9296	-18.9296
16	17.8851	-18.8851
17	17.8476	-18.8476
18	17.8107	-18.8107
19	17.7835	-18.7835
20	17.7496	-18.7496
21	17.7374	-18.7374
22	17.6538	-18.6538
23	17.5642	-18.5641
24	17.5132	-18.5132
25	18.1769	-19.1769
26	18.0874	-19.0874
27	17.9950	-18.995
28	17.9815	-18.9815
29	17.9035	-18.9035
30	17.8448	-18.8448
31	17.7730	-18.773
32	17.6986	-18.6986
33	17.6260	-18.626
34	17.5923	-18.5923
35	17.5557	-18.5557
36	17.4711	-18.4711
37	17.8806	-18.8806
38	17.7753	-18.7753
39	17.6913	-18.6913
40	17.6084	-18.6084

41	17.6061	-18.6061
42	17.5546	-18.5546
43	17.5367	-18.5367
44	17.4733	-18.4733
45	17.4491	-18.4491
46	17.4774	-18.4774
47	17.4093	-18.4093
48	17.4051	-18.4051
49	17.3299	-18.3299
50	17.3457	-18.3457

Tabel 6 Jarak Pengukuran Redaman pada Jaringan FTTH

No	Nama Perangkat	Redaman (dBm)
1	SGB FS-01	-16.1
2	SGB FS-02	-16.25
3	SGB FS-03	-16.03
4	SGB FS-04	-16.42
5	SGB FS-05	-16.17
6	SGB FS-06	-16.73
7	SGB FS-07	-16.02
8	SGB FS-08	-15.87
9	SGB FS-09	-18.77
10	SGB FS-10	-18.62
11	SGB FS-11	-18.42
12	SGB FS-12	-17.22
13	SGB FS-13	-18.68
14	SGB FS-14	-18.51
15	SGB FS-15	-19.43
16	SGB FS-16	-18.84
17	SGB FS-17	-16.38
18	SGB FS-18	-15.39
19	SGB FS-19	-19.91
20	SGB FS-20	-16.02
21	SGB FS-21	-16.42
22	SGB FS-22	-15.83
23	SGB FS-23	-16.15
24	SGB FS-24	-16.17

25	SGB FS-25	-19.06
26	SGB FS-26	-18.87
27	SGB FS-27	-20.06
28	SGB FS-28	-18.87
29	SGB FS-29	-19
30	SGB FS-30	-18.21
31	SGB FS-31	-19.08
32	SGB FS-32	-18.57
33	SGB FS-33	-16.36
34	SGB FS-34	-17.07
35	SGB FS-35	-15.88
36	SGB FS-36	-15.78
37	SGB FS-37	-16.56
38	SGB FS-38	-17.72
39	SGB FS-39	-16.22
40	SGB FS-40	-16.19
41	SGB FS-41	-19.91
42	SGB FS-42	-19.45
43	SGB FS-43	-20.1
44	SGB FS-44	-20.66
45	SGB FS-45	-15.99
46	SGB FS-49	-16.47
47	SGB FS-50	-16.3
48	SGB FS-51	-16.75
49	SGB FS-52	-16.03
50	SGB FS-61	-15.39

Tabel 7 Perhitungan Algoritma Genetika

No	Jarak Minimal (Km)	Generasi	Rute
1	10.70	16	35-36-37-38-39-42-43-45-46-40-44-49-48-50-1-3-4-2-6 5-7-9-11-8-15-14-10-47-12-13-16-17-32-19-41-18-22-23-21-20-24-26-25-28-27-29-30-31-33-34
2	15.22	17	14-1-4-8-2-6-40-36-37-43-11-39-49-5-15-42-44-50-46-3-38-35-9-7-10-45-48-47-12-14-16-17-32-19-41-18-22-23-21-20-24-26-25-28-27-29-30-31-33-34
3	16.42	22	6-8-11-40-14-2-36-39-3-37-42-43-44-4-15-5-50-49-46-1-38-35-9-7-10-45-48-47-12-13-16 17-32-19-41-18-22-23-21-20-24-26-25-28-27-29-30-310-33-34
4	15.16	31	48-46-44-43-45-39-37-41-12-18-33-38-49-36-24-21-31-32-28-29-34-30-26-35-9-17-27-25-20-8-16-14-23-15-19-22-10-11-13-7-5-6-4-3-2-1-50-47-42-40
5	16.54	36	3-45-27-41-43-47-48-49-46-40-37-44-33-36-39-38-34-35-31-32-23-30-9-15-14-50-1-5-12-13-20-17-11-21-16-24-22-18-19-8-7-26-25-28-42-29-10-6-4-2
6	15.37	39	2-3-4-5-7-6-8-15-10-9-24-27-20-21-28-12-17-26-18-11-23-13-19-16-14-25-29-32-31-30-22-33-34-36-35-37-38-39-42-41-43-44-45-48-49-40-47-46-50-1
7	13.35	40	2-3-4-5-7-6-8-13-10-9-24-11-20-21-15-17-14-26-18-28-23-12-16-19-27-25-29-32-31-30-22-33-34-36-35-37-38-39-42-41-43-44-45-48-49-40-47-46-50-1
8	9.84	46	48-47-46-45-44-43-42-41-40-39-38-37-36-35-34-33-32-31-30-29-28-27-26-25-24-23-22-21-20-19-18-17-16-15-14-13-12-11-10-9-8-7-6-5-4-3-2-1-50-49
9	17.38	46	49-47-48-45-43-44-37-35 18-22-23-8-12-4-5-9 10-1-30-32-36-33-28-17-20-46-24-25-50-2-3-34-41-39-38-27-31-29-40-21-26-42-19-7-6-16-13-14-15-11
10	12.63	47	2-3-4-5-7-6-8-13-10-9-11-24-20-21-15-17-14-26-18-19 23-12-16-28-22-27-29-30-31-32-25-37-35-34-36-33-

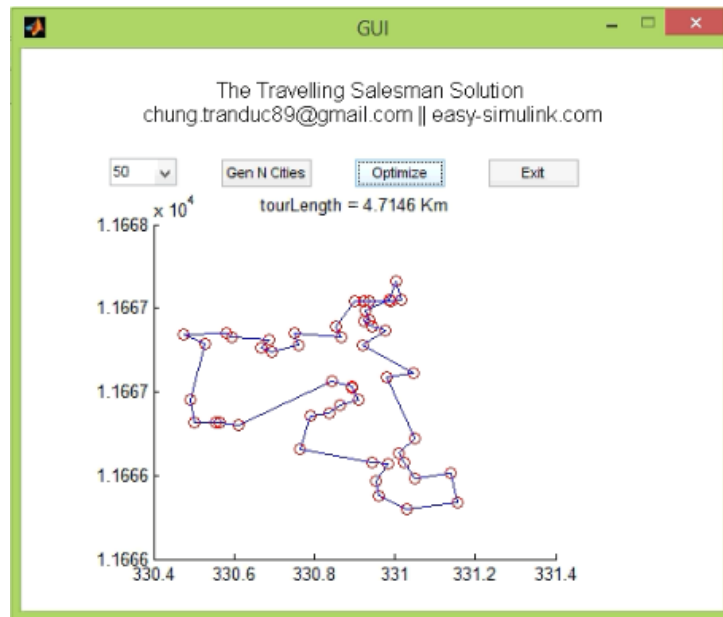
			38-39-42-41-43-44-45-48-49-40-47-46-50-1
11	13.89	47	41-43-44-45-48-49-40-47 46-50-24-11 20-21-15-17-14-26-18-28-23-12-16-19 27-25-29-32-31-30-22-33-34-36-35-37 38-39-42-2-3-4-5-7-6-8-13-10-9-1
12	16.91	53	49-47-48-45-43-44-37-35 18-22-23-8- 12-4 5-9-10-1-30-32-36-33-28 17-20- 46-42-25-50-2-3-34-41-39-38-27-31- 29-40-21-26-24-19-7-6-16-13-14-15- 11
13	15.49	54	41-43-44-46-45-39-49-48 12-18-33-38 37-36-24-21-31-32-28-29-34-30-26- 35-9-17-27-25-20-8-16-14-23-15 19- 22-10-11-13-7-5-6-4-3-2-1-50-47-42- 40
14	4.63	55	16-13-15-6-7-3-5-1-2-4-8-9-14-10- 11-12-37-38-39-40-41-43-42-44-45- 25-26-28-27-32-29-30-31-33-34-35- 36-49-48-47-46-50-23-22-21-20-19 24-18-17
15	4.46	55	2-4-8-9-14-10-11-12-37-38-39-40-41- 43-42-44 45-25-26-28-27-32-29-30- 31-33-34-35-36-49-48-47-46-50-23- 22-21-20-19-24-18-17-16-13-15-6-7- 5-3-1

Tabel 8 Pengujian pada Metode TSP (*Travelling Salesman Problem*)

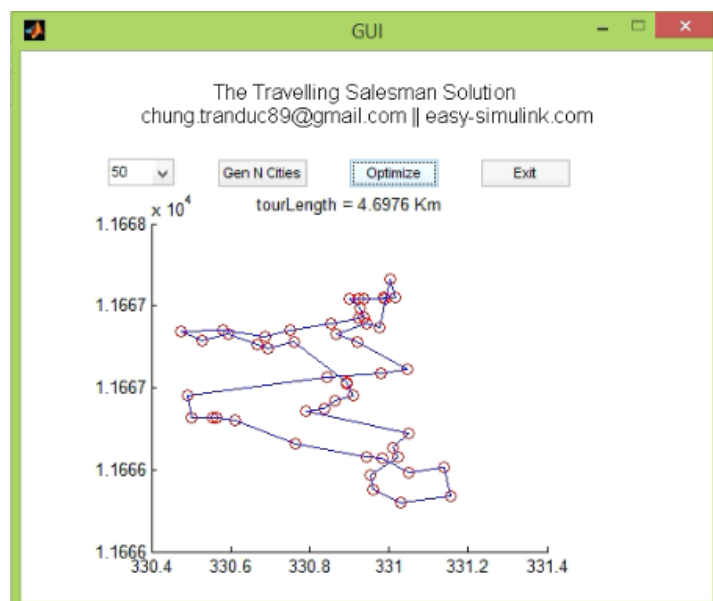
Pengujian	Jarak Rute (Km)	Rute
1	4.7146	2-4-5-7-6-15-13-16-17-18-24-19-20-21- 22-23-50-46-47-48-49-39-40-41-43-42- 44-45-36-35-28-34-33-31-30-29-32-27- 26-25-38-37-12-11-10-14-9-8-3-1
2	4.6976	11-10-13-12-37-38-39-50-46-47-48-49- 36-35-28-32-29-30-31-33-34-27-26-25- 45-44-42-43-41-40-17-18-24-20-23-22- 21-19-16-15-14-9-8-6-7-5-4-3-2-1
3	4.5270	4-9-14-10-11-12-37-38-39-40-41-43-42- 44-45-25-26-27-32-29-30-31-33-34-28- 35-36-49-48-47-46-50-19-24-23-22-21- 20-19-16-17-13-15-8-6-7-5-3-2-1
4	4.6210	2-3-4-11-10-13-12-37-38-39-40-41-43- 42-44-45-25-26-27-32-29-30-31-33-34- 28-35-36-49-48-47-46-50-24-18-17-19- 20-23-22-21-16-15-14-9-8-6-7-5-1
5	4.5691	1-2-10-11-12-37-38-39-40-41-43-42-44- 45-25-26-27-32-29-30-31-33-34-28-35- 36-49-48-47-46-50-23-22-21-20-24-18- 19-16-17-13-15-14-9-8-6-7-5-4-3
6	4.5478	1-2-11-10-13-12-37-38-39-40-41-43-42- 44-45-25-26-27-32-29-30-31-33-34-28- 35-36-49-48-47-46-50-23-22-21-20-19-

		24-18-17-16-15-14-9-8-6-7-5-4-3
7	4.6034	1-2-3-4-8-9-14-10-11-12-37-38-39-40-41-43-42-44-45-25-26-32-29-30-31-33-34-27-28-35-36-49-48-47-46-50-23-22-21-20-24-18-19-16-17-13-15-6-7-5
8	4.5678	2-3-4-8-9-14-10-11-13-12-37-38-25-26-27-32-29-30-31-33-34-28-35-36-49-48-47-46-50-45-44-42-43-41-40-39-18-24-23-22-21-20-19-17-16-15-6-7-5-1
9	4.5412	2-3-4-8-9-14-10-11-12-37-38-39-40-41-43-42-44-45-25-26-27-34-33-31-30-29-32-28-35-36-49-48-47-46-50-18-24-23-22-21-20-19-16-17-13-15-6-7-5-1
10	4.4574	2-11-12-37-38-39-40-41-43-42-44-45-25-26-27-34-33-31-30-29-32-28-35-36-49-48-47-46-50-23-22-21-20-19-24-18-17-16-15-13-10-14-9-8-6-7-5-4-3-1
11	4.4596	2-3-4-8-9-14-10-11-15-13-12-37-38-39-40-41-43-42-44-45-25-26-27-34-33-31-30-29-32-28-35-36-49-48-47-46-50-23-22-21-20-19-24-18-17-16-6-7-5-1
12	4.4396	9-14-10-11-12-37-38-39-40-41-43-42-44-45-25-26-27-34-33-31-30-29-32-28-35-36-49-48-47-46-50-23-22-21-20-24-18-19-16-17-13-15-8-6-7-5-4-3-2-1
13	4.4582	5-7-6-8-9-14-10-12-13-15-16-17-18-24-19-20-21-22-23-50-46-47-48-49-36-35-28-34-33-31-30-29-32-27-26-25-45-44-42-43-41-40-39-38-37-11-4-3-2-1
14	4.6463	2-3-4-8-9-14-10-11-12-37-38-25-26-27-29-32-30-31-33-34-28-35-36-49-48-47-46-50-45-44-42-43-41-40-39-18-24-23-22-21-20-19-16-17-13-15-6-7-5-1
15	4.4174	2-3-4-8-9-14-10-11-12-37-38-39-40-41-43-42-44-45-25-26-27-28-32-29-31-33-34-35-36-49-48-47-46-50-18-23-22-21-20-19-24-18-16-17-13-15-6-7-5-1

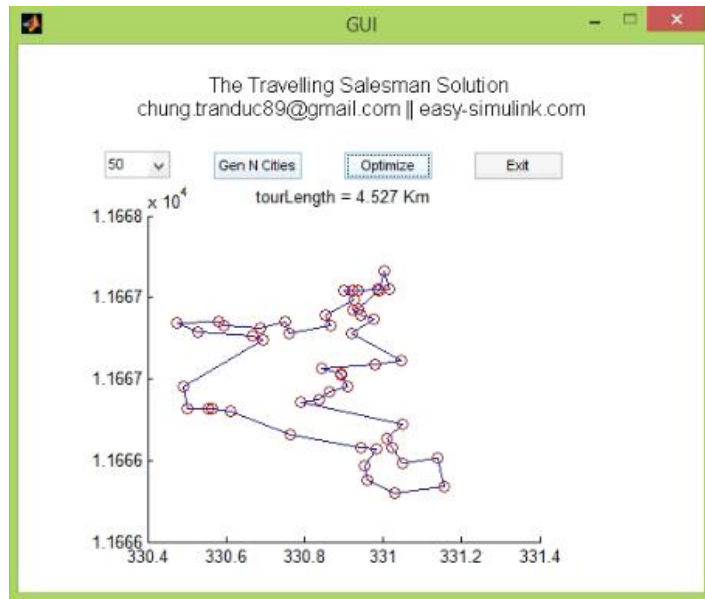
Rute yang di dapat pada Pengujian Aplikasi Matlab pada metode TSP (Travelling Salesman Problem)



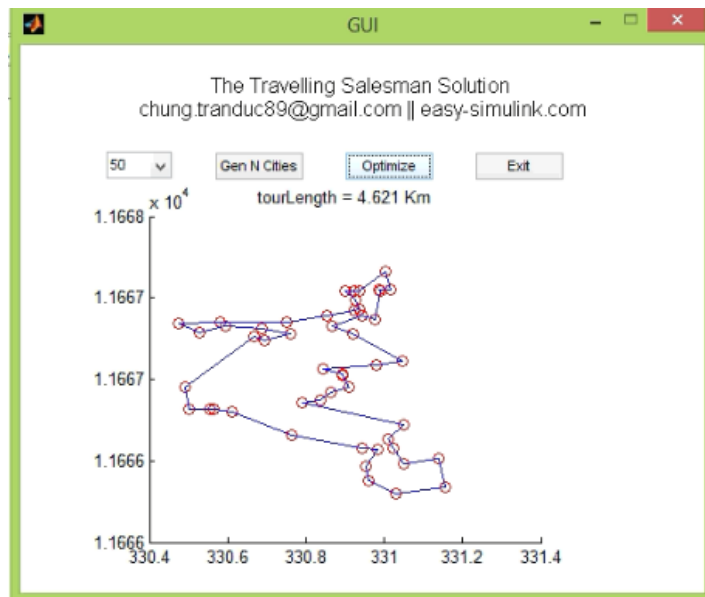
Gambar Hasil Pengujian ke-1



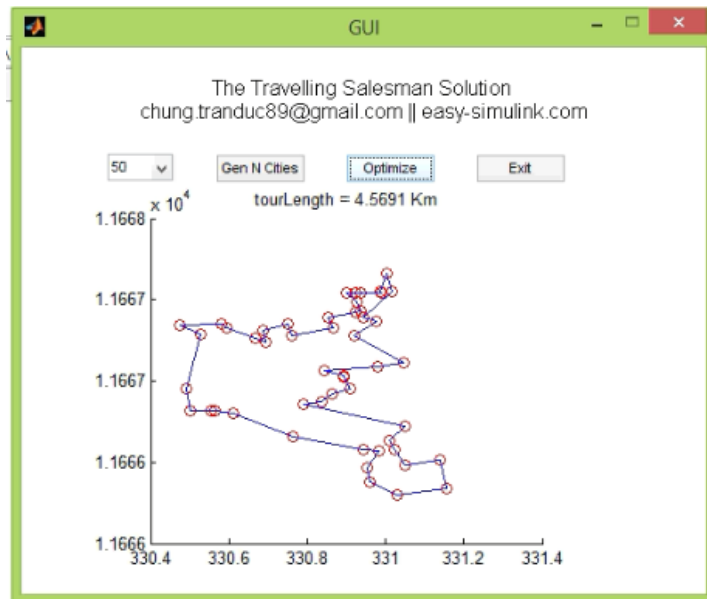
Gambar Hasil Pengujian ke-2



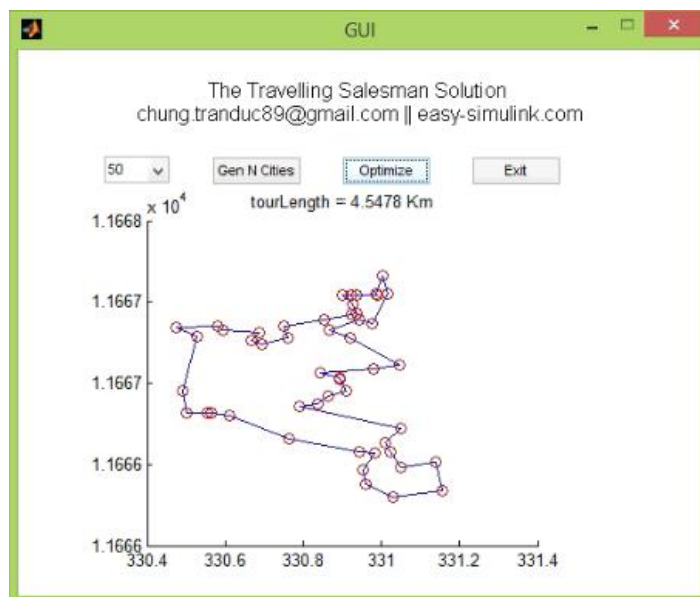
Gambar Hasil Pengujian ke-3



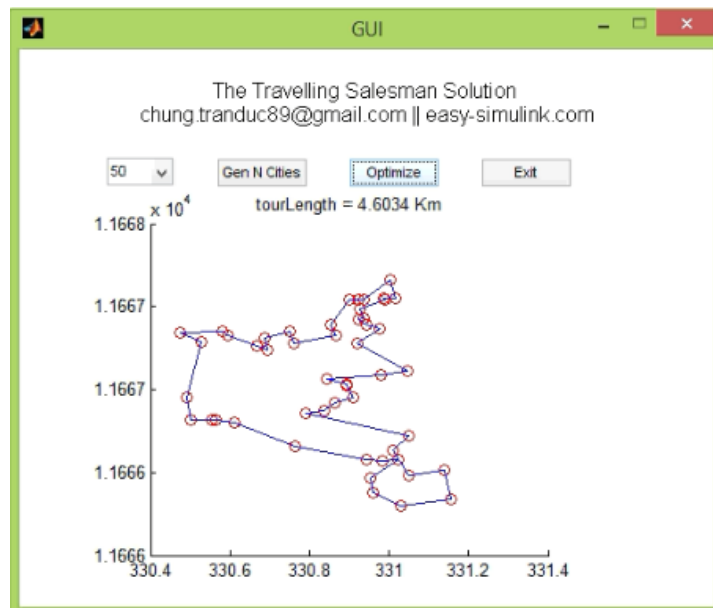
Gambar Hasil Pengujian ke-4



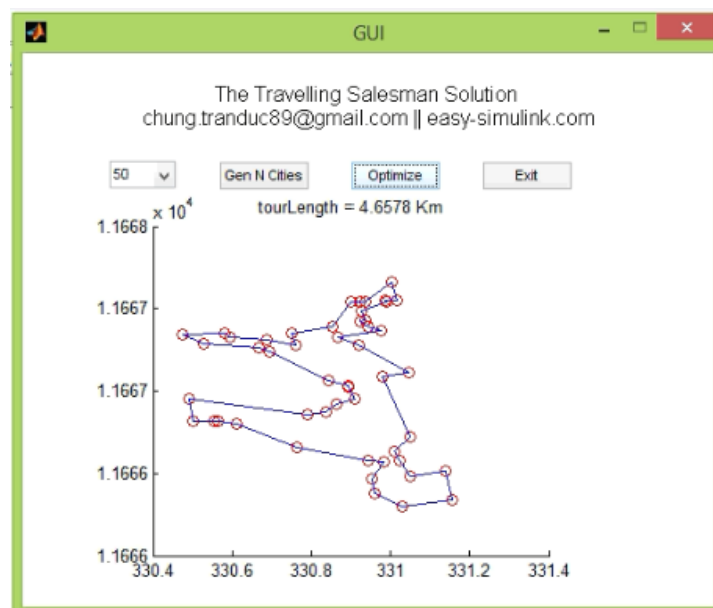
Gambar Hasil Pengujian ke-5



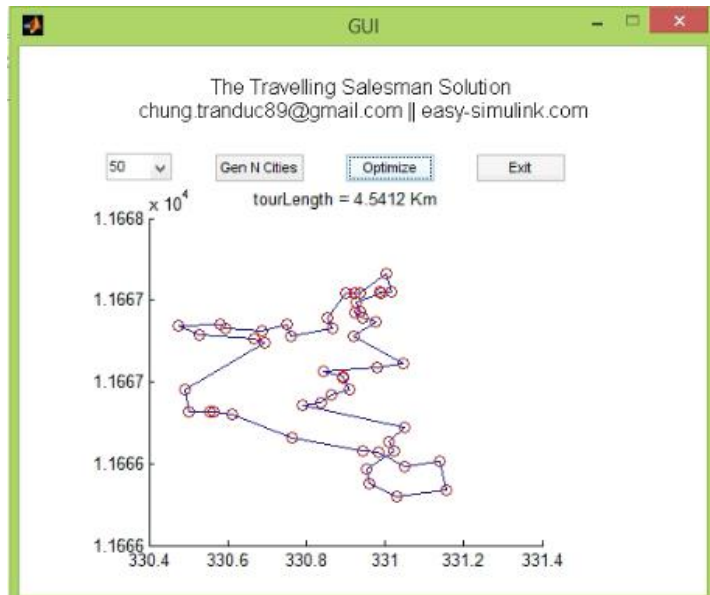
Gambar Hasil Pengujian ke-6



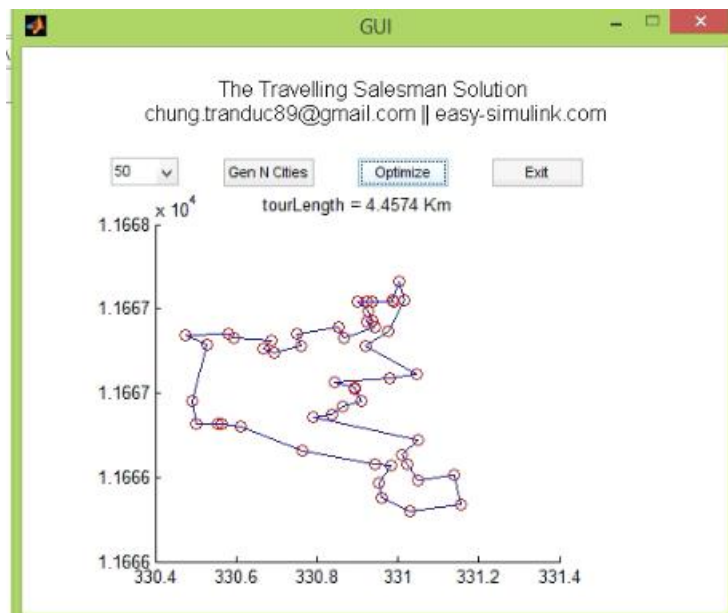
Gambar Hasil Pengujian ke-7



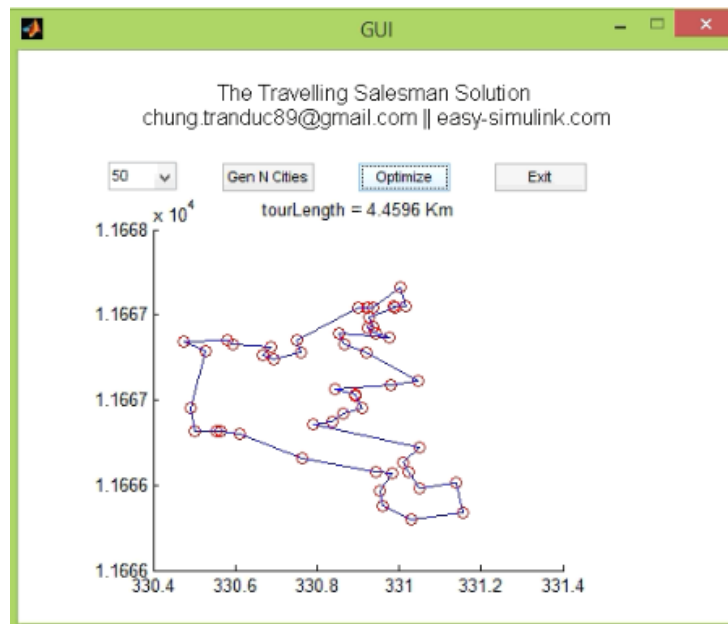
Gambar Hasil Pengujian ke-8



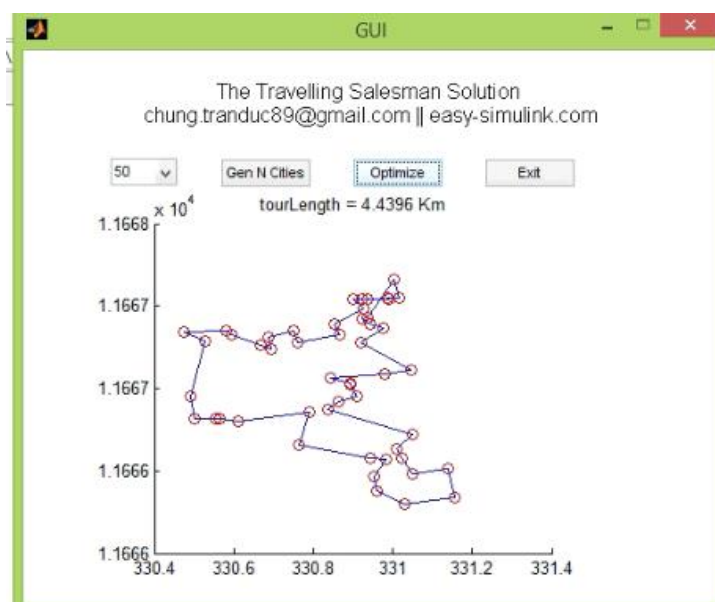
Gambar Hasil Pengujian ke-9



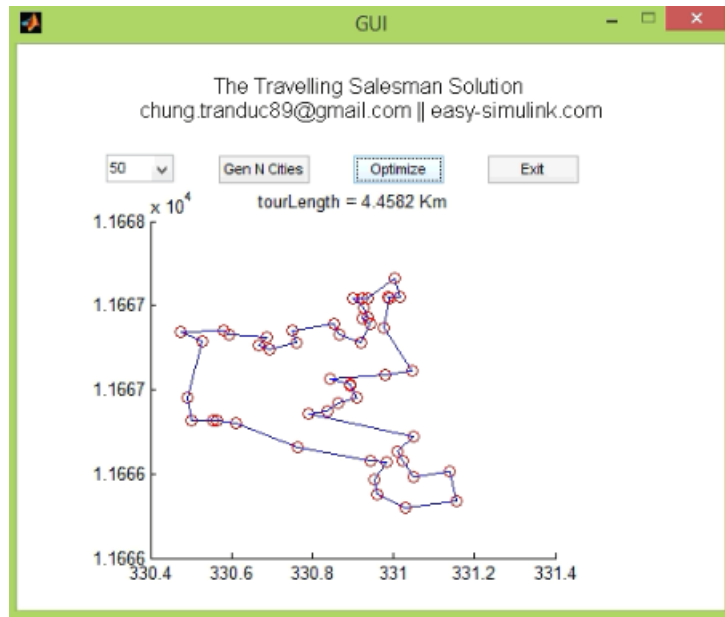
Gambar Hasil Pengujian ke-10



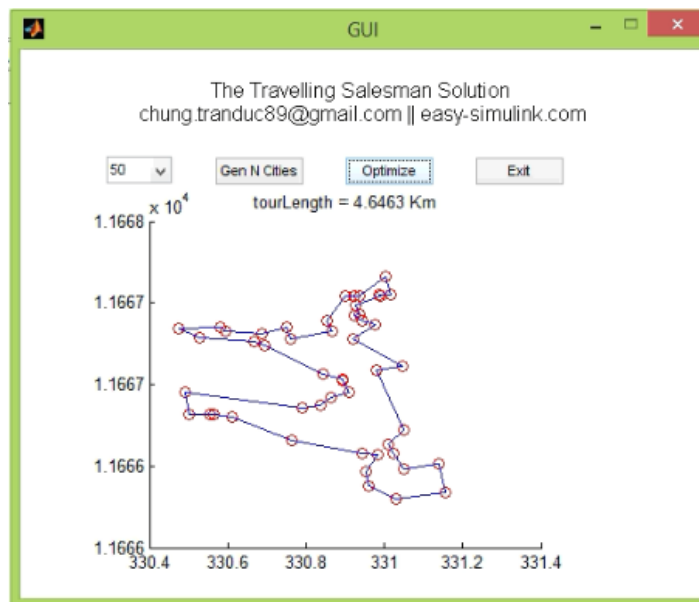
Gambar Hasil Pengujian ke-11



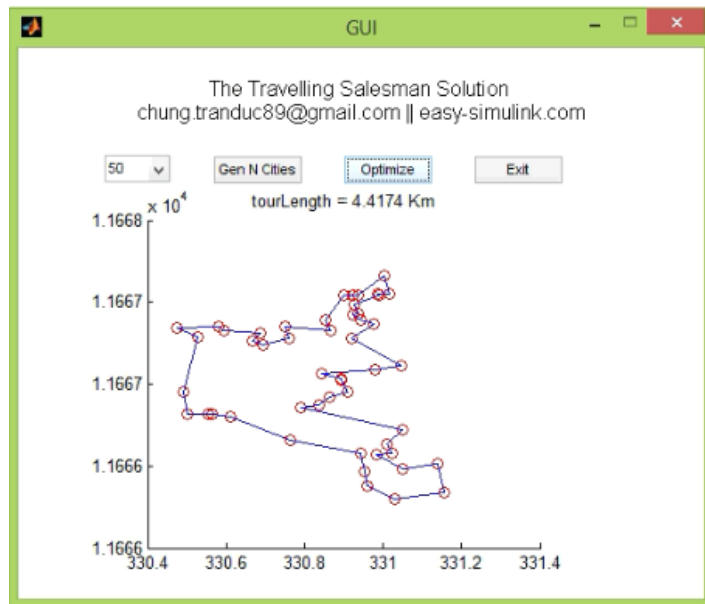
Gambar Hasil Pengujian ke-12



Gambar Hasil Pengujian ke-13



Gambar Hasil Pengujian ke-14



Gambar Hasil Pengujian ke-15