

APPENDIX

A k-means clustering

All the iterations done during the calculation of k-means clustering are presented here.

C1		C2		C3	
X	Y	X	Y	X	Y
22.28815022	70.78148298	22.28659521	70.78433731	22.28498171	70.78434266

Table 1: Iteration 1

Stops	Co-ordinates		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0.021233922	0.024143369	0.02431115	C1
2	22.29037206	70.78024775	0.002542119	0.005566785	0.006769352	C1
3	22.28906167	70.77968985	0.002011484	0.0052614	0.006188274	C1
4	22.28691738	70.77999026	0.001936002	0.004358973	0.004763428	C1
5	22.28648058	70.78153521	0.001670457	0.002804441	0.003182513	C1
6	22.28635036	70.78251657	0.002075527	0.001837123	0.002282058	C2
7	22.28703269	70.78407489	0.002822568	0.00051015	0.002068381	C2
8	22.28743179	70.7855219	0.004102325	0.001450223	0.002719095	C2
9	22.28632461	70.78504884	0.004006025	0.000761254	0.001517253	C2
10	22.28598988	70.78617584	0.005166241	0.001935624	0.002092115	C2
11	22.28535904	70.78716371	0.006329405	0.003084908	0.002846167	C3
12	22.28481832	70.78557756	0.005278936	0.002166926	0.001245661	C3
13	22.28395573	70.78460361	0.005228008	0.002652876	0.00105865	C3
14	22.28367249	70.78447839	0.005387254	0.002926118	0.00131624	C3
15	22.28297727	70.78432534	0.005902408	0.003617958	0.002004522	C3

Table 2: k-means iteration - 1

C1		C2		C3	
X	Y	X	Y	X	Y
22.2882119	70.77634245	22.28662586	70.78466761	22.28415657	70.78522972

Table 3: Iteration - 2

Stops	Stops		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0.014800938	0.023951611	0.025310103	C1
2	22.29037206	70.78024775	0.005482695	0.005422987	0.007965699	C2
3	22.28906167	70.77968985	0.004664259	0.005089689	0.00739934	C1
4	22.28691738	70.77999026	0.005238947	0.004167266	0.005922337	C2
5	22.28648058	70.78153521	0.006842215	0.002613142	0.004364681	C2
6	22.28635036	70.78251657	0.007816619	0.001648241	0.003489109	C2
7	22.28703269	70.78407489	0.009173382	0.000436792	0.003099307	C2
8	22.28743179	70.7855219	0.010547616	0.001607327	0.003288228	C2
9	22.28632461	70.78504884	0.010270082	0.000944829	0.002175573	C2
10	22.28598988	70.78617584	0.011443789	0.002120467	0.00206305	C3
11	22.28535904	70.78716371	0.012556938	0.003263954	0.002277332	C3
12	22.28481832	70.78557756	0.011206773	0.002287128	0.000747597	C3
13	22.28395573	70.78460361	0.010647431	0.002685279	0.000657534	C3
14	22.28367249	70.78447839	0.01066423	0.002948009	0.000893774	C3
15	22.28297727	70.78432534	0.010874669	0.00362884	0.001486156	C3

Table 4: k-means iteration - 2

C1		C2		C3	
X	Y	X	Y	X	Y
22.28864472	70.77504426	22.28660165	70.78414554	22.28415657	70.78522972

Table 5: Iteration - 3

Stops	Stops		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0.014800938	0.023951611	0.025310103	C1
2	22.29037206	70.78024775	0.005482695	0.005422987	0.007965699	C2
3	22.28906167	70.77968985	0.004664259	0.005089689	0.00739934	C1
4	22.28691738	70.77999026	0.005238947	0.004167266	0.005922337	C2
5	22.28648058	70.78153521	0.006842215	0.002613142	0.004364681	C2
6	22.28635036	70.78251657	0.007816619	0.001648241	0.003489109	C2
7	22.28703269	70.78407489	0.009173382	0.000436792	0.003099307	C2
8	22.28743179	70.7855219	0.010547616	0.001607327	0.003288228	C2
9	22.28632461	70.78504884	0.010270082	0.000944829	0.002175573	C2
10	22.28598988	70.78617584	0.011443789	0.002120467	0.00206305	C3
11	22.28535904	70.78716371	0.012556938	0.003263954	0.002277332	C3
12	22.28481832	70.78557756	0.011206773	0.002287128	0.000747597	C3
13	22.28395573	70.78460361	0.010647431	0.002685279	0.000657534	C3
14	22.28367249	70.78447839	0.01066423	0.002948009	0.000893774	C3
15	22.28297727	70.78432534	0.010874669	0.00362884	0.001486156	C3

Table 6: k-means iteration - 3

C1		C2		C3	
X	Y	X	Y	X	Y
22.28864473	70.76996952	22.28727278	70.78270506	22.28446212	70.78538741

Table 7: Iteration - 4

Stops	Stops		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0.009729263	0.022476161	0.02541869	C1
2	22.29037206	70.78024775	0.010422359	0.003955238	0.007832207	C2
3	22.28906167	70.77968985	0.009729263	0.003505944	0.007322436	C2
4	22.28691738	70.77999026	0.010168521	0.002737969	0.005929381	C2
5	22.28648058	70.78153521	0.011766419	0.001412848	0.004348978	C2
6	22.28635036	70.78251657	0.0127551	0.000941484	0.003436151	C2
7	22.28703269	70.78407489	0.014197187	0.001390713	0.002886265	C2
8	22.28743179	70.7855219	0.015599609	0.002821329	0.002972713	C2
9	22.28632461	70.78504884	0.015256764	0.002528309	0.001893011	C3
10	22.28598988	70.78617584	0.016422334	0.003700293	0.001719208	C3
11	22.28535904	70.78716371	0.017505306	0.004852004	0.001989901	C3
12	22.28481832	70.78557756	0.016070229	0.003778313	0.000403773	C3
13	22.28395573	70.78460361	0.015366951	0.003821952	0.000933151	C3
14	22.28367249	70.78447839	0.015337219	0.004013324	0.00120409	C3
15	22.28297727	70.78432534	0.015434038	0.00459094	0.00182559	C3

Table 8: k-means iteration - 4

C1		C2		C3	
X	Y	X	Y	X	Y
22.28822779	70.7602492	22.28766379	70.78193949	22.28472819	70.78533904

Table 9: Iteration - 5

Stops	Stops		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0	0.021697624	0.025332734	C1
2	22.29037206	70.78024775	0.020113177	0.003193228	0.007600955	C2
3	22.28906167	70.77968985	0.019458527	0.002648578	0.007119864	C2
4	22.28691738	70.77999026	0.019784502	0.002087256	0.005779452	C2
5	22.28648058	70.78153521	0.021357598	0.001250374	0.004188079	C2
6	22.28635036	70.78251657	0.02234638	0.001434618	0.00325542	C2
7	22.28703269	70.78407489	0.023855649	0.002226709	0.002628458	C2
8	22.28743179	70.7855219	0.025285239	0.003589919	0.002709777	C3
9	22.28632461	70.78504884	0.024872565	0.003385481	0.001622581	C3
10	22.28598988	70.78617584	0.026023051	0.00455507	0.001513967	C3
11	22.28535904	70.78716371	0.027066964	0.00571002	0.001930642	C3
12	22.28481832	70.78557756	0.025556807	0.004618687	0.000254978	C3
13	22.28395573	70.78460361	0.024726258	0.004565878	0.001066562	C3
14	22.28367249	70.78447839	0.024653688	0.004730377	0.001362067	C3
15	22.28297727	70.78432534	0.024642006	0.005258874	0.002023197	C3

Table 10: k-means iteration - 5

C1		C2		C3	
X	Y	X	Y	X	Y
22.28822779	70.7602492	22.28770246	70.78134242	22.28506614	70.7853619

Table 11: Iteration - 6

Stops	Stops		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0	0.021099764	0.025310942	C1
2	22.29037206	70.78024775	0.020113177	0.002885322	0.007369349	C2
3	22.28906167	70.77968985	0.019458527	0.002139735	0.006938044	C2
4	22.28691738	70.77999026	0.019784502	0.001563551	0.005681694	C2
5	22.28648058	70.78153521	0.021357598	0.001236994	0.00407973	C2
6	22.28635036	70.78251657	0.02234638	0.001790755	0.003121714	C2
7	22.28703269	70.78407489	0.023855649	0.002813359	0.002350257	C3
8	22.28743179	70.7855219	0.025285239	0.004188239	0.002371054	C3
9	22.28632461	70.78504884	0.024872565	0.003954242	0.001296823	C3
10	22.28598988	70.78617584	0.026023051	0.005127855	0.001231178	C3
11	22.28535904	70.78716371	0.027066964	0.006275268	0.00182546	C3
12	22.28481832	70.78557756	0.025556807	0.005123931	0.000328522	C3
13	22.28395573	70.78460361	0.024726258	0.004967224	0.001344624	C3
14	22.28367249	70.78447839	0.024653688	0.005106359	0.001650106	C3
15	22.28297727	70.78432534	0.024642006	0.005587952	0.002331919	C3

Table 12: k-means iteration - 6

C1		C2		C3	
X	Y	X	Y	X	Y
22.28822779	70.7602492	22.28783641	70.78079593	22.28528465	70.7852189

Table 13: Iteration - 7

Stops	Stops		Distances			Cluster
	X	Y	C1	C2	C3	
1	22.28822779	70.7602492	0	0.020550456	0.025142554	C1
2	22.29037206	70.78024775	0.020113177	0.002594227	0.007112953	C2
3	22.28906167	70.77968985	0.019458527	0.001650661	0.006695994	C2
4	22.28691738	70.77999026	0.019784502	0.001222177	0.005477639	C2
5	22.28648058	70.78153521	0.021357598	0.001544286	0.003872961	C2
6	22.28635036	70.78251657	0.02234638	0.002273538	0.002904877	C2
7	22.28703269	70.78407489	0.023855649	0.003376031	0.002089117	C3
8	22.28743179	70.7855219	0.025285239	0.004743268	0.002168419	C3
9	22.28632461	70.78504884	0.024872565	0.004513629	0.001053776	C3
10	22.28598988	70.78617584	0.026023051	0.005687986	0.001188738	C3
11	22.28535904	70.78716371	0.027066964	0.006832716	0.001946231	C3
12	22.28481832	70.78557756	0.025556807	0.005654459	0.000588304	C3
13	22.28395573	70.78460361	0.024726258	0.005436739	0.001464445	C3
14	22.28367249	70.78447839	0.024653688	0.005558663	0.001774091	C3
15	22.28297727	70.78432534	0.024642006	0.006005665	0.002474357	C3

Table 14: k-means iteration - 7