Part 1:

Mean Vector:

[2886.38, 6.7823, 0.136548, 50.8607, 0.0111399, 124.836]

Total Variance: 9932429.717196042

Covariance Matrix from Inner Product:

	0	1	2	3	4	5
0	9.9321e+06	-5085.67	-1.07878	6557.77	-9.53323	-8491.74
1	-5085.67	35.0009	-0.279302	5.41178	0.0585937	-6.36918
2	-1.07878	-0.279302	0.00874405	0.00551227	-0.000271474	-0.152295
3	6557.77	5.41178	0.00551227	242.35	-0.00081328	13.431
4	-9.53323	0.0585937	-0.000271474	-0.00081328	0.000172814	-0.0283462
5	-8491.74	-6.36918	-0.152295	13.431	-0.0283462	47.5598

Covariance Matrix from Outer Product:

	0	1	2	3	4	5
0	9.9321e+06	-5085.67	-1.07878	6557.77	-9.53323	-8491.74
1	-5085.67	35.0009	-0.279302	5.41178	0.0585937	-6.36918
2	-1.07878	-0.279302	0.00874405	0.00551227	-0.000271474	-0.152295
3	6557.77	5.41178	0.00551227	242.35	-0.00081328	13.431
4	-9.53323	0.0585937	-0.000271474	-0.00081328	0.000172814	-0.0283462
5	-8491.74	-6.36918	-0.152295	13.431	-0.0283462	47.5598

Correlation Matrix (did it as Upper Triangle):

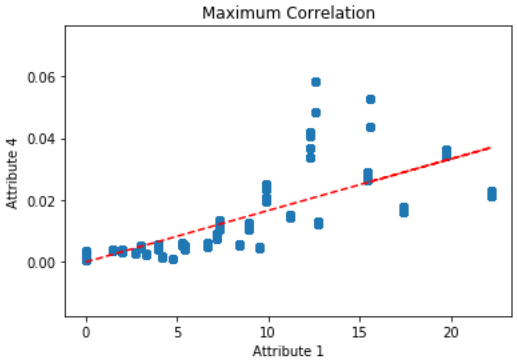
	0	1	2	3	4	5
0	0	-0.272765	-0.00366064	0.133664	-0.230107	-0.390711
1	0	0	-0.504868	0.0587596	0.753394	-0.156108
2	0	0	0	0.00378663	-0.220842	-0.236162
3	0	0	0	0	-0.00397401	0.125103
4	0	0	0	0	0	-0.31267
5	0	0	0	0	0	0

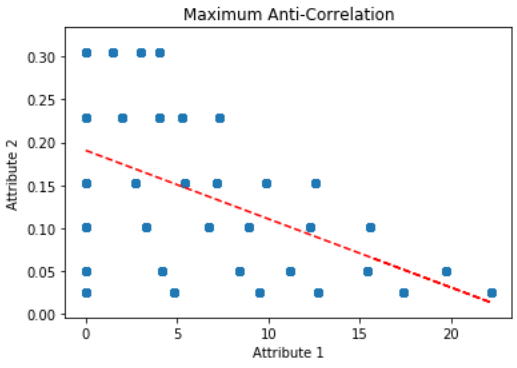
Max Correlation [index values of attributes] = [1,4]

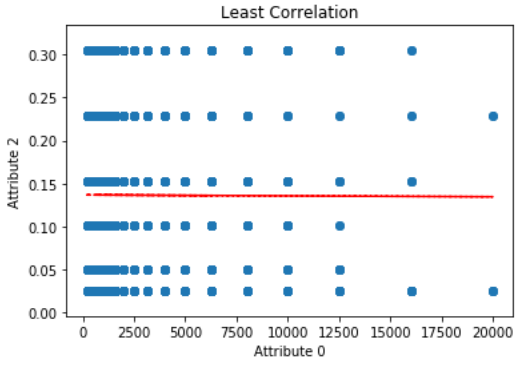
Min Correlation [index values of attributes] = [0,2]

Max Anti Correlation [index values of attributes] = [1,2]

Graphs:







Part 2: Did it partially!