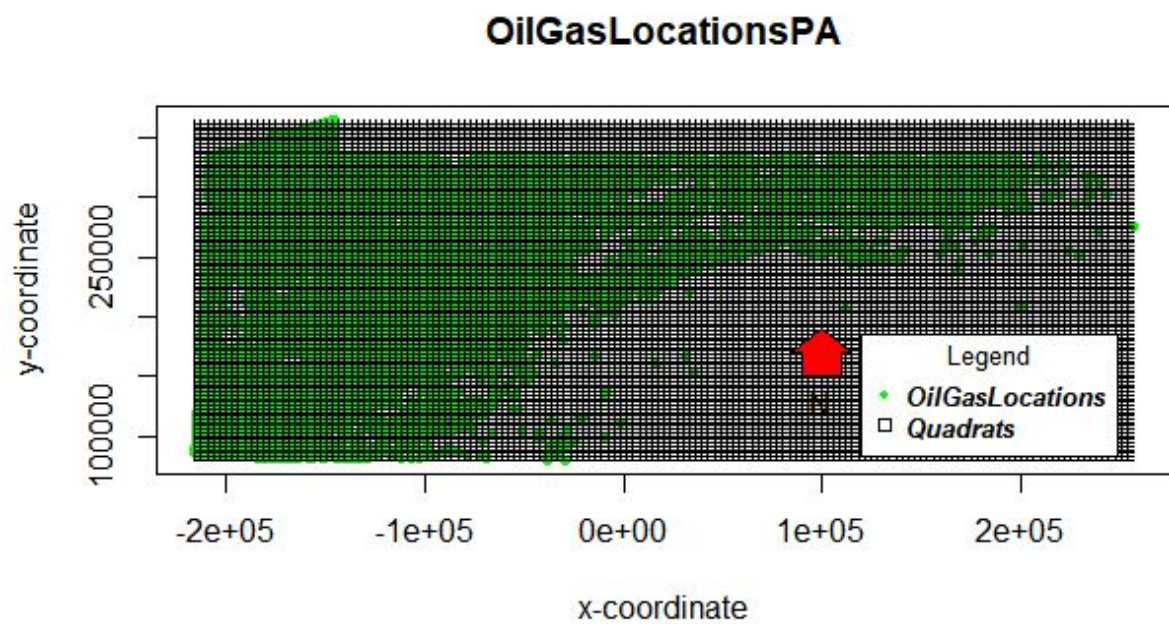


INFSCI 2809: Spatial Data Analytics Project 2

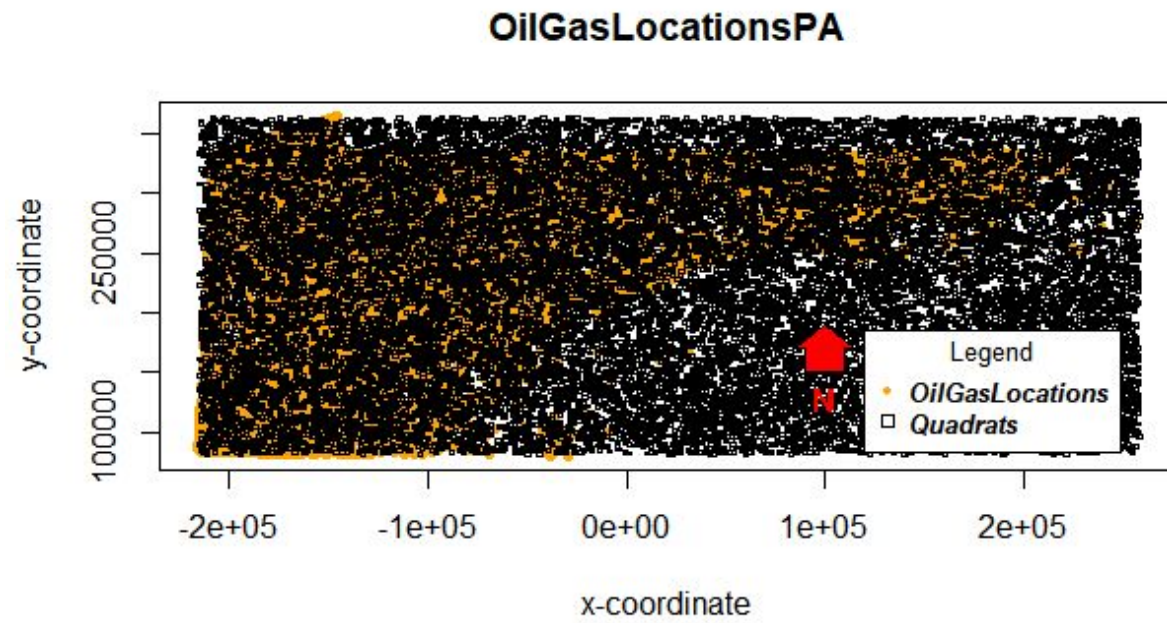
Submitted By: Charu Sreedharan(chs263)

1) Map

(a) Regular Quadrat Count method:



(b) Random Quadrat Count method:



2) Statistics Table

(a) Regular Quadrat Count method

	Number of Events(K)	Number of Quadrants(X)	K- Mean	(K- Mean)^2	X(K- Mean)^2
1	0	12536	-7.81295	6.104219e+01	765224.86504
2	1	895	-6.81295	4.641629e+01	41542.57749
3	2	543	-5.81295	3.379039e+01	18348.18052
4	3	393	-4.81295	2.316449e+01	9103.64367
5	4	383	-3.81295	1.453859e+01	5568.27909
6	5	273	-2.81295	7.912688e+00	2160.16374
7	6	291	-1.81295	3.286788e+00	956.45522
8	7	222	-0.81295	6.608877e-01	146.71707
9	8	235	0.18705	3.498770e-02	8.22211
10	9	225	1.18705	1.409088e+00	317.04473
11	10	197	2.18705	4.783188e+00	942.28798
12	11	173	3.18705	1.015729e+01	1757.21077
13	12	190	4.18705	1.753139e+01	3330.96366
14	13	174	5.18705	2.690549e+01	4681.55486
15	14	164	6.18705	3.827959e+01	6277.85238
16	15	161	7.18705	5.165369e+01	8316.24372
17	16	151	8.18705	6.702779e+01	10121.19594
18	17	125	9.18705	8.440189e+01	10550.23596
19	18	137	10.18705	1.037760e+02	14217.31032
20	19	107	11.18705	1.251501e+02	13391.05938
21	20	119	12.18705	1.485242e+02	17674.37834
22	21	91	13.18705	1.738983e+02	15824.74418
23	22	97	14.18705	2.012724e+02	19523.42161
24	23	97	15.18705	2.306465e+02	22372.70931
25	24	86	16.18705	2.620206e+02	22533.77054

25	24	86	16.18705	2.620206e+02	22533.77054
26	25	79	17.18705	2.953947e+02	23336.18033
27	26	86	18.18705	3.307688e+02	28446.11574
28	27	72	19.18705	3.681429e+02	26506.28791
29	28	63	20.18705	4.075170e+02	25673.57023
30	29	67	21.18705	4.488911e+02	30075.70288
31	30	57	22.18705	4.922652e+02	28059.11570
32	31	56	23.18705	5.376393e+02	30107.80011
33	32	47	24.18705	5.850134e+02	27495.62922
34	33	45	25.18705	6.343875e+02	28547.43695
35	34	46	26.18705	6.857616e+02	31545.03303
36	35	40	27.18705	7.391357e+02	29565.42751
37	36	37	28.18705	7.945098e+02	29396.86214
38	37	39	29.18705	8.518839e+02	33223.47162
39	38	29	30.18705	9.112580e+02	26426.48164
40	39	46	31.18705	9.726321e+02	44741.07603
41	40	41	32.18705	1.036006e+03	42476.25370
42	41	35	33.18705	1.101380e+03	38548.31007
43	42	34	34.18705	1.168754e+03	39737.64918
44	43	34	35.18705	1.238128e+03	42096.36858
45	44	33	36.18705	1.309503e+03	43213.58539
46	45	27	37.18705	1.382877e+03	37337.67057
47	46	35	38.18705	1.458251e+03	51038.77757
48	47	24	39.18705	1.535625e+03	36854.99730
49	48	29	40.18705	1.614999e+03	46834.97064

49	48	29	40.18705	1.614999e+03	46834.97064
50	49	26	41.18705	1.696373e+03	44105.70028
51	50	32	42.18705	1.779747e+03	56951.91001
52	51	31	43.18705	1.865121e+03	57818.75992
53	52	41	44.18705	1.952495e+03	80052.31090
54	53	30	45.18705	2.041869e+03	61256.08463
55	54	31	46.18705	2.133244e+03	66130.55122
56	55	27	47.18705	2.226618e+03	60118.67757
57	56	23	48.18705	2.321992e+03	53405.81112
58	57	36	49.18705	2.419366e+03	87097.17196
59	58	29	50.18705	2.518740e+03	73043.45964
60	59	26	51.18705	2.620114e+03	68122.96628
61	60	19	52.18705	2.723488e+03	51746.27557
62	61	26	53.18705	2.828862e+03	73550.41948
63	62	25	54.18705	2.936236e+03	73405.90969
64	63	21	55.18705	3.045610e+03	63957.82024
65	64	18	56.18705	3.156985e+03	56825.72258
66	65	13	57.18705	3.270359e+03	42514.66294
67	66	23	58.18705	3.385733e+03	77871.85412
68	67	11	59.18705	3.503107e+03	38534.17576
69	68	12	60.18705	3.622481e+03	43469.77185
70	69	8	61.18705	3.743855e+03	29950.84070
71	70	18	62.18705	3.867229e+03	69610.12538
72	71	8	63.18705	3.992603e+03	31940.82630

73	72	10	64.18705	4.119977e+03	41199.77388
74	73	10	65.18705	4.249351e+03	42493.51488
75	74	5	66.18705	4.380726e+03	21903.62794
76	75	7	67.18705	4.514100e+03	31598.69781
77	76	7	68.18705	4.649474e+03	32546.31651
78	77	4	69.18705	4.786848e+03	19147.39155
79	78	3	70.18705	4.926222e+03	14778.66596
80	79	4	71.18705	5.067596e+03	20270.38435
81	80	6	72.18705	5.210970e+03	31265.82113
82	81	6	73.18705	5.356344e+03	32138.06573
83	82	8	74.18705	5.503718e+03	44029.74710
84	83	3	75.18705	5.653092e+03	16959.27746
85	84	6	76.18705	5.804467e+03	34826.79953
86	85	6	77.18705	5.957841e+03	35747.04413
87	86	2	78.18705	6.113215e+03	12226.42958
88	87	4	79.18705	6.270589e+03	25082.35555
89	89	2	81.18705	6.591337e+03	13182.67418
90	90	7	82.18705	6.754711e+03	47282.97831
91	91	3	83.18705	6.920085e+03	20760.25586
92	92	5	84.18705	7.087459e+03	35437.29694
93	93	3	85.18705	7.256833e+03	21770.50046
94	94	2	86.18705	7.428208e+03	14856.41518
95	95	3	87.18705	7.601582e+03	22804.74506
96	96	4	88.18705	7.776956e+03	31107.82315

97	99	1	91.18705	8.315078e+03	8315.07809
98	100	4	92.18705	8.498452e+03	33993.80875
99	101	3	93.18705	8.683826e+03	26051.47886
100	102	6	94.18705	8.871200e+03	53227.20233
101	103	2	95.18705	9.060574e+03	18121.14898
102	104	1	96.18705	9.251949e+03	9251.94859
103	105	2	97.18705	9.445323e+03	18890.64538
104	106	2	98.18705	9.640697e+03	19281.39358
105	107	2	99.18705	9.838071e+03	19676.14178
106	108	1	100.18705	1.003744e+04	10037.44499
107	109	3	101.18705	1.023882e+04	30716.45726
108	110	1	102.18705	1.044219e+04	10442.19319
109	111	1	103.18705	1.064757e+04	10647.56729
110	112	2	104.18705	1.085494e+04	21709.88278
111	113	3	105.18705	1.106432e+04	33192.94646
112	114	3	106.18705	1.127569e+04	33827.06876
113	115	2	107.18705	1.148906e+04	22978.12738
114	116	1	108.18705	1.170444e+04	11704.43779
115	117	3	109.18705	1.192181e+04	35765.43566
116	119	4	111.18705	1.236256e+04	49450.24035
117	120	2	112.18705	1.258593e+04	25171.86838
118	121	1	113.18705	1.281131e+04	12811.30829
119	122	1	114.18705	1.303868e+04	13038.68239

120	124	1	116.18705	1.349943e+04	13499.43059
121	127	1	119.18705	1.420555e+04	14205.55289
122	130	1	122.18705	1.492968e+04	14929.67519
123	131	1	123.18705	1.517505e+04	15175.04929
124	132	2	124.18705	1.542242e+04	30844.84678
125	133	1	125.18705	1.567180e+04	15671.79749
126	135	3	127.18705	1.617655e+04	48529.63706
127	136	3	128.18705	1.643192e+04	49295.75936
128	138	2	130.18705	1.694867e+04	33897.33598
129	139	1	131.18705	1.721004e+04	17210.04209
130	140	2	132.18705	1.747342e+04	34946.83238
131	141	1	133.18705	1.773879e+04	17738.79029
132	142	2	134.18705	1.800616e+04	36012.32878
133	143	1	135.18705	1.827554e+04	18275.53849
134	145	2	137.18705	1.882029e+04	37640.57338
135	146	2	138.18705	1.909566e+04	38191.32158
136	147	1	139.18705	1.937303e+04	19373.03489
137	148	2	140.18705	1.965241e+04	39304.81798
138	149	1	141.18705	1.993378e+04	19933.78309
139	150	1	142.18705	2.021716e+04	20217.15719
140	151	3	143.18705	2.050253e+04	61507.59386
141	152	1	144.18705	2.078991e+04	20789.90539
142	154	1	146.18705	2.137065e+04	21370.65359
143	156	1	148.18705	2.195940e+04	21959.40179

144	158	1	150.18705	2.255615e+04	22556.14999
145	159	1	151.18705	2.285752e+04	22857.52409
146	160	3	152.18705	2.316090e+04	69482.69456
147	161	1	153.18705	2.346627e+04	23466.27229
148	162	2	154.18705	2.377365e+04	47547.29278
149	164	1	156.18705	2.439439e+04	24394.39459
150	165	1	157.18705	2.470777e+04	24707.76869
151	167	2	159.18705	2.534052e+04	50681.03378
152	168	2	160.18705	2.565989e+04	51319.78198
153	170	3	162.18705	2.630464e+04	78913.91756
154	174	1	166.18705	2.761814e+04	27618.13559
155	176	1	168.18705	2.828688e+04	28286.88379
156	178	1	170.18705	2.896363e+04	28963.63199
157	179	2	171.18705	2.930501e+04	58610.01218
158	180	1	172.18705	2.964838e+04	29648.38019
159	181	2	173.18705	2.999375e+04	59987.50858
160	183	2	175.18705	3.069050e+04	61381.00498
161	184	3	176.18705	3.104188e+04	93125.62976
162	185	2	177.18705	3.139525e+04	62790.50138
163	186	1	178.18705	3.175062e+04	31750.62479
164	188	1	180.18705	3.246737e+04	32467.37299
165	189	2	181.18705	3.282875e+04	65657.49418
166	191	1	183.18705	3.355750e+04	33557.49529

167	192	1	184.18705	3.392487e+04	33924.86939
168	197	1	189.18705	3.579174e+04	35791.73989
169	198	2	190.18705	3.617111e+04	72342.22798
170	200	1	192.18705	3.693586e+04	36935.86219
171	201	1	193.18705	3.732124e+04	37321.23629
172	205	1	197.18705	3.888273e+04	38882.73269
173	208	1	200.18705	4.007485e+04	40074.85499
174	210	1	202.18705	4.087960e+04	40879.60319
175	212	1	204.18705	4.169235e+04	41692.35139
176	214	1	206.18705	4.251310e+04	42513.09959
177	216	1	208.18705	4.334185e+04	43341.84779
178	219	2	211.18705	4.459997e+04	89199.94018
179	220	3	212.18705	4.502334e+04	135070.03256
180	223	1	215.18705	4.630547e+04	46305.46649
181	224	1	216.18705	4.673684e+04	46736.84059
182	226	2	218.18705	4.760559e+04	95211.17758
183	228	1	220.18705	4.848234e+04	48482.33699
184	237	1	229.18705	5.252670e+04	52526.70389
185	240	2	232.18705	5.391083e+04	107821.65238
186	244	1	236.18705	5.578432e+04	55784.32259
187	245	1	237.18705	5.625770e+04	56257.69669
188	246	2	238.18705	5.673307e+04	113466.14158
189	249	1	241.18705	5.817119e+04	58171.19309
190	258	1	250.18705	6.259356e+04	62593.55999

191	261	1	253.18705	6.410368e+04	64103.68229
192	266	1	258.18705	6.666055e+04	66660.55279
193	267	1	259.18705	6.717793e+04	67177.92689
194	271	1	263.18705	6.926742e+04	69267.42329
195	272	1	264.18705	6.979480e+04	69794.79739
196	273	1	265.18705	7.032417e+04	70324.17149
197	284	1	276.18705	7.627929e+04	76279.28659
198	286	1	278.18705	7.738803e+04	77388.03479
199	290	2	282.18705	7.962953e+04	159259.06238
200	292	1	284.18705	8.076228e+04	80762.27939
201	293	1	285.18705	8.133165e+04	81331.65349
202	303	1	295.18705	8.713539e+04	87135.39449
203	307	1	299.18705	8.951289e+04	89512.89089
204	313	1	305.18705	9.313914e+04	93139.13549
205	318	1	310.18705	9.621601e+04	96216.00599
206	328	1	320.18705	1.025197e+05	102519.74699
207	343	1	335.18705	1.123504e+05	112350.35849
208	349	1	341.18705	1.164086e+05	116408.60309
209	355	1	347.18705	1.205388e+05	120538.84769
210	368	1	360.18705	1.297347e+05	129734.71099
211	376	1	368.18705	1.355617e+05	135561.70379
212	411	1	403.18705	1.625598e+05	162559.79729
213	413	1	405.18705	1.641765e+05	164176.54549

(b) Random Quadrat Count method

	Number of Events(K)	Number of Quadrants(X)	K- Mean	(K- Mean)^2	X(K- Mean)^2
1	1	815	-6.81295	4.641629e+01	3.782927e+04
2	2	13109	-5.81295	3.379039e+01	4.429582e+05
3	3	388	-4.81295	2.316449e+01	8.987821e+03
4	4	370	-3.81295	1.453859e+01	5.379277e+03
5	5	303	-2.81295	7.912688e+00	2.397544e+03
6	6	293	-1.81295	3.286788e+00	9.630288e+02
7	7	240	-0.81295	6.608877e-01	1.586130e+02
8	8	223	0.18705	3.498770e-02	7.802258e+00
9	9	221	1.18705	1.409088e+00	3.114084e+02
10	10	192	2.18705	4.783188e+00	9.183720e+02
11	11	190	3.18705	1.015729e+01	1.929885e+03
12	12	179	4.18705	1.753139e+01	3.138118e+03
13	13	175	5.18705	2.690549e+01	4.708460e+03
14	14	170	6.18705	3.827959e+01	6.507530e+03
15	15	151	7.18705	5.165369e+01	7.799707e+03
16	16	140	8.18705	6.702779e+01	9.383890e+03
17	17	144	9.18705	8.440189e+01	1.215387e+04
18	18	118	10.18705	1.037760e+02	1.224557e+04
19	19	115	11.18705	1.251501e+02	1.439226e+04
20	20	122	12.18705	1.485242e+02	1.811995e+04
21	21	99	13.18705	1.738983e+02	1.721593e+04
22	22	83	14.18705	2.012724e+02	1.670561e+04
23	23	112	15.18705	2.306465e+02	2.583241e+04
24	24	80	16.18705	2.620206e+02	2.096165e+04
25	25	88	17.18705	2.953947e+02	2.599473e+04

26	26	89	18.18705	3.307688e+02	2.943842e+04
27	27	63	19.18705	3.681429e+02	2.319300e+04
28	28	51	20.18705	4.075170e+02	2.078337e+04
29	29	53	21.18705	4.488911e+02	2.379123e+04
30	30	65	22.18705	4.922652e+02	3.199724e+04
31	31	52	23.18705	5.376393e+02	2.795724e+04
32	32	48	24.18705	5.850134e+02	2.808064e+04
33	33	39	25.18705	6.343875e+02	2.474111e+04
34	34	44	26.18705	6.857616e+02	3.017351e+04
35	35	33	27.18705	7.391357e+02	2.439148e+04
36	36	43	28.18705	7.945098e+02	3.416392e+04
37	37	45	29.18705	8.518839e+02	3.833477e+04
38	38	42	30.18705	9.112580e+02	3.827284e+04
39	39	46	31.18705	9.726321e+02	4.474108e+04
40	40	30	32.18705	1.036006e+03	3.108019e+04
41	41	40	33.18705	1.101380e+03	4.405521e+04
42	42	29	34.18705	1.168754e+03	3.389388e+04
43	43	38	35.18705	1.238128e+03	4.704888e+04
44	44	41	36.18705	1.309503e+03	5.368961e+04
45	45	38	37.18705	1.382877e+03	5.254931e+04
46	46	29	38.18705	1.458251e+03	4.228927e+04
47	47	31	39.18705	1.535625e+03	4.760437e+04
48	48	24	40.18705	1.614999e+03	3.875998e+04
49	49	39	41.18705	1.696373e+03	6.615855e+04

50	50	34	42.18705	1.779747e+03	6.051140e+04
51	51	38	43.18705	1.865121e+03	7.087461e+04
52	52	36	44.18705	1.952495e+03	7.028983e+04
53	53	37	45.18705	2.041869e+03	7.554917e+04
54	54	34	46.18705	2.133244e+03	7.253028e+04
55	55	39	47.18705	2.226618e+03	8.683809e+04
56	56	36	48.18705	2.321992e+03	8.359170e+04
57	57	37	49.18705	2.419366e+03	8.951654e+04
58	58	25	50.18705	2.518740e+03	6.296850e+04
59	59	34	51.18705	2.620114e+03	8.908388e+04
60	60	24	52.18705	2.723488e+03	6.536372e+04
61	61	20	53.18705	2.828862e+03	5.657725e+04
62	62	20	54.18705	2.936236e+03	5.872473e+04
63	63	19	55.18705	3.045610e+03	5.786660e+04
64	64	21	56.18705	3.156985e+03	6.629668e+04
65	65	18	57.18705	3.270359e+03	5.886646e+04
66	66	15	58.18705	3.385733e+03	5.078599e+04
67	67	11	59.18705	3.503107e+03	3.853418e+04
68	68	12	60.18705	3.622481e+03	4.346977e+04
69	69	10	61.18705	3.743855e+03	3.743855e+04
70	70	10	62.18705	3.867229e+03	3.867229e+04
71	71	7	63.18705	3.992603e+03	2.794822e+04
72	72	7	64.18705	4.119977e+03	2.883984e+04

73	73	17	65.18705	4.249351e+03	7.223898e+04
74	74	3	66.18705	4.380726e+03	1.314218e+04
75	75	6	67.18705	4.514100e+03	2.708460e+04
76	76	10	68.18705	4.649474e+03	4.649474e+04
77	77	9	69.18705	4.786848e+03	4.308163e+04
78	78	6	70.18705	4.926222e+03	2.955733e+04
79	79	3	71.18705	5.067596e+03	1.520279e+04
80	80	5	72.18705	5.210970e+03	2.605485e+04
81	81	8	73.18705	5.356344e+03	4.285075e+04
82	82	2	74.18705	5.503718e+03	1.100744e+04
83	83	2	75.18705	5.653092e+03	1.130618e+04
84	84	4	76.18705	5.804467e+03	2.321787e+04
85	85	6	77.18705	5.957841e+03	3.574704e+04
86	86	3	78.18705	6.113215e+03	1.833964e+04
87	87	5	79.18705	6.270589e+03	3.135294e+04
88	89	1	81.18705	6.591337e+03	6.591337e+03
89	90	3	82.18705	6.754711e+03	2.026413e+04
90	91	1	83.18705	6.920085e+03	6.920085e+03
91	92	2	84.18705	7.087459e+03	1.417492e+04
92	93	2	85.18705	7.256833e+03	1.451367e+04
93	94	2	86.18705	7.428208e+03	1.485642e+04
94	95	7	87.18705	7.601582e+03	5.321107e+04
95	96	2	88.18705	7.776956e+03	1.555391e+04
96	97	1	89.18705	7.954330e+03	7.954330e+03

97	98	3	90.18705	8.133704e+03	2.440111e+04
98	99	2	91.18705	8.315078e+03	1.663016e+04
99	101	5	93.18705	8.683826e+03	4.341913e+04
100	102	3	94.18705	8.871200e+03	2.661360e+04
101	105	4	97.18705	9.445323e+03	3.778129e+04
102	106	2	98.18705	9.640697e+03	1.928139e+04
103	108	2	100.18705	1.003744e+04	2.007489e+04
104	109	3	101.18705	1.023882e+04	3.071646e+04
105	110	1	102.18705	1.044219e+04	1.044219e+04
106	111	3	103.18705	1.064757e+04	3.194270e+04
107	113	2	105.18705	1.106432e+04	2.212863e+04
108	114	1	106.18705	1.127569e+04	1.127569e+04
109	116	2	108.18705	1.170444e+04	2.340888e+04
110	118	1	110.18705	1.214119e+04	1.214119e+04
111	119	3	111.18705	1.236256e+04	3.708768e+04
112	120	4	112.18705	1.258593e+04	5.034374e+04
113	121	1	113.18705	1.281131e+04	1.281131e+04
114	122	5	114.18705	1.303868e+04	6.519341e+04
115	123	2	115.18705	1.326806e+04	2.653611e+04
116	124	1	116.18705	1.349943e+04	1.349943e+04
117	125	1	117.18705	1.373280e+04	1.373280e+04
118	126	1	118.18705	1.396818e+04	1.396818e+04
119	127	2	119.18705	1.420555e+04	2.841111e+04

120	128	1	120.18705	1.444493e+04	1.444493e+04
121	130	2	122.18705	1.492968e+04	2.985935e+04
122	132	1	124.18705	1.542242e+04	1.542242e+04
123	133	1	125.18705	1.567180e+04	1.567180e+04
124	134	2	126.18705	1.592317e+04	3.184634e+04
125	135	1	127.18705	1.617655e+04	1.617655e+04
126	136	1	128.18705	1.643192e+04	1.643192e+04
127	139	2	131.18705	1.721004e+04	3.442008e+04
128	140	1	132.18705	1.747342e+04	1.747342e+04
129	141	1	133.18705	1.773879e+04	1.773879e+04
130	142	2	134.18705	1.800616e+04	3.601233e+04
131	144	2	136.18705	1.854691e+04	3.709383e+04
132	146	1	138.18705	1.909566e+04	1.909566e+04
133	148	3	140.18705	1.965241e+04	5.895723e+04
134	149	2	141.18705	1.993378e+04	3.986757e+04
135	150	2	142.18705	2.021716e+04	4.043431e+04
136	151	4	143.18705	2.050253e+04	8.201013e+04
137	152	1	144.18705	2.078991e+04	2.078991e+04
138	155	2	147.18705	2.166403e+04	4.332806e+04
139	156	3	148.18705	2.195940e+04	6.587821e+04
140	157	1	149.18705	2.225678e+04	2.225678e+04
141	158	3	150.18705	2.255615e+04	6.766845e+04
142	159	2	151.18705	2.285752e+04	4.571505e+04
143	160	1	152.18705	2.316090e+04	2.316090e+04

144	162	1	154.18705	2.377365e+04	2.377365e+04
145	163	1	155.18705	2.408302e+04	2.408302e+04
146	164	1	156.18705	2.439439e+04	2.439439e+04
147	165	2	157.18705	2.470777e+04	4.941554e+04
148	171	2	163.18705	2.663001e+04	5.326003e+04
149	174	1	166.18705	2.761814e+04	2.761814e+04
150	175	1	167.18705	2.795151e+04	2.795151e+04
151	176	2	168.18705	2.828688e+04	5.657377e+04
152	177	2	169.18705	2.862426e+04	5.724852e+04
153	178	1	170.18705	2.896363e+04	2.896363e+04
154	179	2	171.18705	2.930501e+04	5.861001e+04
155	180	1	172.18705	2.964838e+04	2.964838e+04
156	182	1	174.18705	3.034113e+04	3.034113e+04
157	183	4	175.18705	3.069050e+04	1.227620e+05
158	184	1	176.18705	3.104188e+04	3.104188e+04
159	185	2	177.18705	3.139525e+04	6.279050e+04
160	193	1	185.18705	3.429424e+04	3.429424e+04
161	195	1	187.18705	3.503899e+04	3.503899e+04
162	197	1	189.18705	3.579174e+04	3.579174e+04
163	198	1	190.18705	3.617111e+04	3.617111e+04
164	199	1	191.18705	3.655249e+04	3.655249e+04
165	201	1	193.18705	3.732124e+04	3.732124e+04
166	202	1	194.18705	3.770861e+04	3.770861e+04

167	205	3	197.18705	3.888273e+04	1.166482e+05
168	206	1	198.18705	3.927811e+04	3.927811e+04
169	208	2	200.18705	4.007485e+04	8.014971e+04
170	209	1	201.18705	4.047623e+04	4.047623e+04
171	212	1	204.18705	4.169235e+04	4.169235e+04
172	214	1	206.18705	4.251310e+04	4.251310e+04
173	216	2	208.18705	4.334185e+04	8.668370e+04
174	219	1	211.18705	4.459997e+04	4.459997e+04
175	220	1	212.18705	4.502334e+04	4.502334e+04
176	223	1	215.18705	4.630547e+04	4.630547e+04
177	230	1	222.18705	4.936709e+04	4.936709e+04
178	233	1	225.18705	5.070921e+04	5.070921e+04
179	236	1	228.18705	5.206933e+04	5.206933e+04
180	237	1	229.18705	5.252670e+04	5.252670e+04
181	240	1	232.18705	5.391083e+04	5.391083e+04
182	248	1	240.18705	5.768982e+04	5.768982e+04
183	252	2	244.18705	5.962732e+04	1.192546e+05
184	256	1	248.18705	6.159681e+04	6.159681e+04
185	259	1	251.18705	6.309493e+04	6.309493e+04
186	262	2	254.18705	6.461106e+04	1.292221e+05
187	277	1	269.18705	7.246167e+04	7.246167e+04
188	278	1	270.18705	7.300104e+04	7.300104e+04
189	280	1	272.18705	7.408579e+04	7.408579e+04
190	281	1	273.18705	7.463116e+04	7.463116e+04

191	287	1	279.18705	7.794541e+04	7.794541e+04
192	289	1	281.18705	7.906616e+04	7.906616e+04
193	290	2	282.18705	7.962953e+04	1.592591e+05
194	294	1	286.18705	8.190303e+04	8.190303e+04
195	298	1	290.18705	8.420852e+04	8.420852e+04
196	305	1	297.18705	8.832014e+04	8.832014e+04
197	311	1	303.18705	9.192239e+04	9.192239e+04
198	328	1	320.18705	1.025197e+05	1.025197e+05
199	346	1	338.18705	1.143705e+05	1.143705e+05
200	349	1	341.18705	1.164086e+05	1.164086e+05
201	350	1	342.18705	1.170920e+05	1.170920e+05
202	353	1	345.18705	1.191541e+05	1.191541e+05
203	362	1	354.18705	1.254485e+05	1.254485e+05
204	409	1	401.18705	1.609510e+05	1.609510e+05
205	449	1	441.18705	1.946460e+05	1.946460e+05

3) Report

VMR Value of Regular Quadrat Sampling Approach is: 62.7399985307824

VMR Value of Random Quadrat Sampling Approach is: 58.9512521969029

Shown above is the VMR values for 150 x 100 quadrat sizes.

As we can see above, very high VMR values of 62.74 and 58.95 indicates high variability among the quadrat counts, implying that more quadrats contain very few or very many events than would be expected by chance. This is suggestive of clustering.

Generally, a VMR greater than 1.0 indicates a tendency towards clustering in the pattern, and a VMR less than 1.0 indicates an evenly scattered arrangement.

If a set of points is randomly scattered, an intermediate value of variance will occur. So, as a result, VMR of near 1 suggests a random arrangement.

Thus, we can safely say that the set of points provided is clustered.

Strength of Quadrat Count Method:

A relatively easy way to analyze the spatial point pattern.

Weakness of Quadrat Count Method:

- Quadrat size affects results. If the quadrat size is too large or too small, the point pattern may not be detected, thus leading to a different conclusion. Instead of using 150 x 100 size, if we use 300 x 200, the VMR for Regular Quadrant count fell sharply to 27.6019.
- Gives markedly different point patterns which can give rise to identical frequency distributions of points by quadrats.
- Quadrat Count is actually a measure of dispersion, and not really pattern, because it is based primarily on the density of points, and not their arrangement in relation to one another. This results in a single measure for the entire distribution, so variations within the region are not recognized.