

Project 4

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CS 475

Write Up

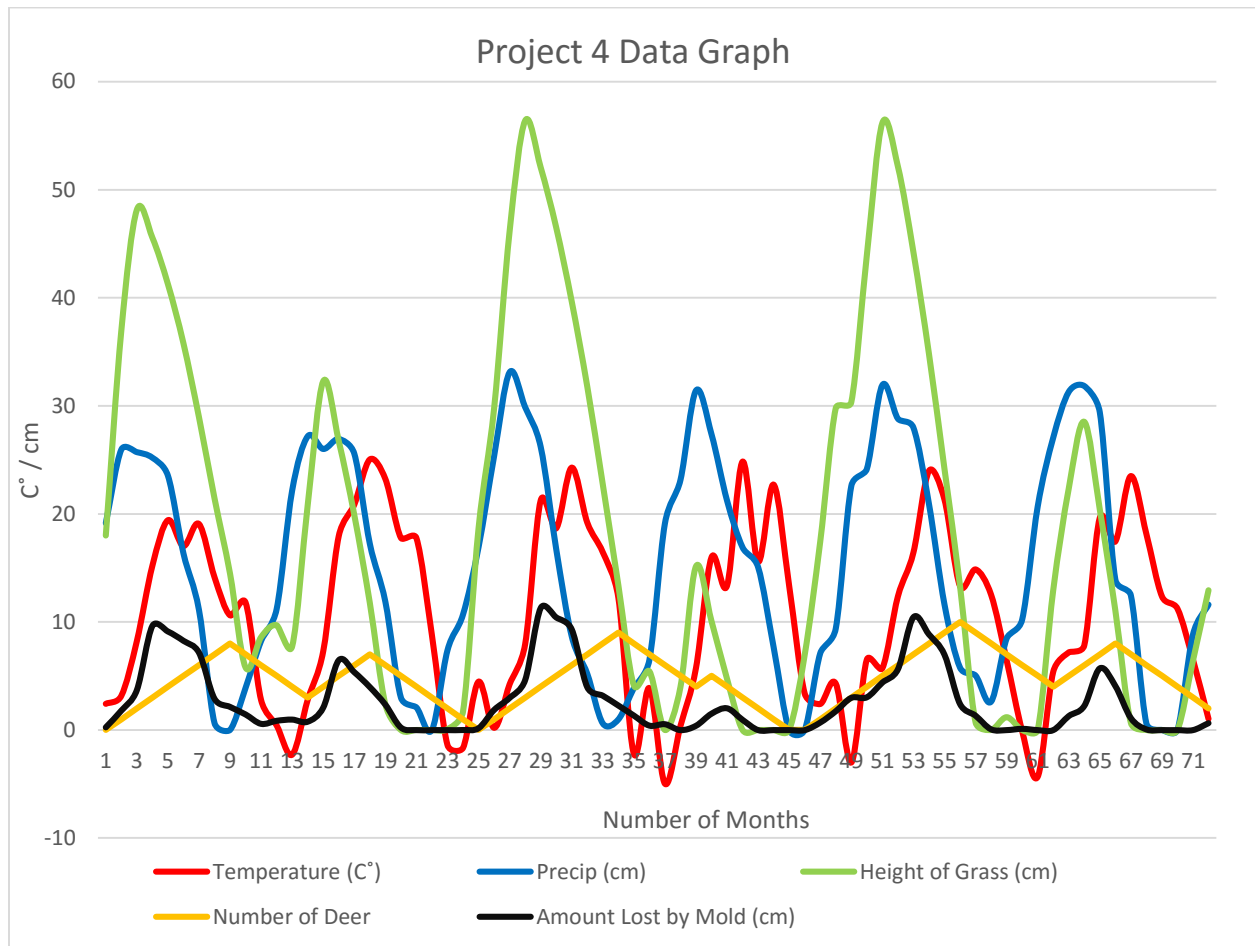
I decided to use moss as a factor in the project. I had it where a factor of the moss is affected by the temperature and the precipitation. If the moss was in benefiting conditions, it's factor would be higher. The mold loss factor is the percentage of grass lost by mold that month. So it's graph can show how much it's affecting the grass by each month.

Table of data for Project 4

Months	Temperature (C°)	Precip (cm)	Height of Grass (cm)	Number of Deer	Amount Lost by Mold (cm)
0	2.428697222	19.14179365	17.9975256	0	0.254
1	3.168949444	25.9612339	36.95172442	1	1.79975256
2	8.239741667	25.7245051	48.1379784	2	3.69517168
3	15.210385	25.2071141	45.56491776	3	9.62759568
4	19.42858778	23.5442697	41.26097412	4	9.11298406
5	17.03229278	16.3451603	35.78017228	5	8.25219584
6	19.07177833	11.09942855	28.9368738	6	7.15603598
7	14.14815667	0.6368677	21.43522002	7	2.89368738
8	10.61857444	0	14.46511712	8	2.14352124
9	11.80561889	3.89758495	5.78231254	7	1.44651222
10	2.774603333	8.24576655	8.59286572	6	0.578231
11	0.430168333	11.1911051	9.69357726	5	0.85928708
12	-2.279731111	22.18004845	7.74339574	4	0.96935798
13	2.798565556	27.18638335	20.79951898	3	0.77433932
14	7.300003889	26.01630255	32.27802536	4	2.07995266
15	17.96022222	26.9423217	26.74411974	5	6.45560558
16	20.86620778	25.58361785	19.88937348	6	5.34882344
17	25.05221056	17.24286725	11.76139126	7	3.97787368
18	23.24333167	11.864468	2.3635589	6	2.35227876
19	17.79577889	3.00644155	0	5	0.23635462
20	17.77248833	2.083529	0	4	0
21	8.758506667	0	0	3	0
22	-1.386549444	7.3759847	0.07922006	2	0
23	-1.656004444	10.6912267	1.71412916	1	0.00792226
24	4.476996667	16.91909975	18.65421974	0	0.1714119
25	0.207383889	25.3460977	29.74486558	1	1.86542172
26	4.238402222	33.1171498	46.15171872	2	2.97448732
27	7.940813889	29.8891572	56.38627788	3	4.61517238
28	21.25067389	26.21982405	52.07042164	4	11.2772571
29	18.67124333	16.75311715	46.50850744	5	10.41408382

30	24.29548889	8.66181085	39.65054808	6	9.30170098
31	19.20786556	5.202428	31.78591306	7	3.9650543
32	16.45354389	0.60255545	22.71526318	8	3.17859156
33	12.26609556	0.971033	13.41433944	9	2.27152708
34	-2.198266111	3.88688335	4.12696914	8	1.34143496
35	3.883196667	6.48504465	5.42629598	7	0.41269666
36	-4.968343333	19.11712215	0	6	0.54263036
37	0.378886111	23.14517205	3.98415256	5	0
38	5.744342778	31.42841135	15.13905278	4	0.39841424
39	15.98978889	27.37683165	10.0719382	5	1.51390604
40	13.37121111	21.2335963	4.72372182	4	2.01438764
41	24.84742056	16.9030988	0	3	0.94474538
42	15.58190667	15.07208395	0	2	0
43	22.71899333	7.6561471	0	1	0
44	13.33163778	0	0	0	0
45	3.381707778	0	6.95271152	0	0
46	2.411876111	7.09630985	17.42982036	1	0.69527166
47	4.303228333	9.38788305	29.78640474	2	1.74298102
48	-3.008647222	22.58128495	30.33149382	3	2.97864022
49	6.522691667	24.15768845	43.93047856	4	3.03314862
50	5.716069444	31.9328247	56.18372558	5	4.39304684
51	12.36885278	28.8211042	52.15485378	6	5.61837332
52	16.435195	27.99119365	44.21564436	7	10.43096974
53	23.98953778	20.93377265	34.81772818	8	8.84312938
54	21.32891333	11.61462435	24.15122932	9	6.96354462
55	13.32936611	5.77531885	13.34512952	10	2.41512344
56	14.86940611	5.0370971	0.71072502	9	1.33451346
57	12.53040944	2.61644565	0	8	0.07107174
58	6.466310556	8.4622804	1.18193058	7	0
59	-0.090592778	10.21037255	0	6	0.11819382
60	-4.329763889	20.66990275	0	5	0
61	5.385475	27.05861095	12.92709632	4	0
62	7.187775556	31.300269	22.33548238	5	1.29271014
63	7.837965	31.84760145	28.5199836	6	2.233549
64	19.64563556	29.41379105	20.40292338	7	5.70399672
65	17.457805	13.9404461	11.07480132	8	4.08058366
66	23.51373056	12.4599699	0.66092324	7	1.10748064
67	18.14903278	0.6047629	0	6	0.06609334
68	12.378415	0	0	5	0
69	11.23802611	0	0	4	0
70	6.508068333	8.84074905	6.43079994	3	0
71	1.032968889	11.60351115	12.9307336	2	0.64307974

Graph of Data Given Above



Commentary:

I am gladly seeing a fluctuation between the deer and the grass height. When the grass is very high the deer get to eat and grow and grass falls. This pattern is followed throughout the whole test. I can also see that my mold function is working where at higher temperatures it's growing faster therefore killing off more grass. It is interesting that it had a bit of a fault between months 35-45. I'm thinking this is because the measurement is more of a ratio to the grass, and since there is such little grass in those months the moss wouldn't be killing much grass. The grass does grow properly where when the temperature is good and precipitation is high the grass does thrive.

Something very noticeable about the grass is how much it is affected by both the mold and deer. One big example is after the 29th month both deer and mold were either at their greatest value or close to it and the grass drastically died off. I looked at the rate at which the grass is losing height and I saw that it had an average rate of loss of 6.3 cm per month.

I was glad to see a graph similar to population graphs I've seen in textbooks.