CS575 Project 3

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1. What your own-choice quantity was and how it fits into the simulation.

I chose to use monster to be MyAgent(). Each monster will eat two deer.

If the number of monster >= (number of deer / 2), the number of monsters will increase by one.

If the number of monsters < (number of deer / 2), the number of monsters will decrease by one.

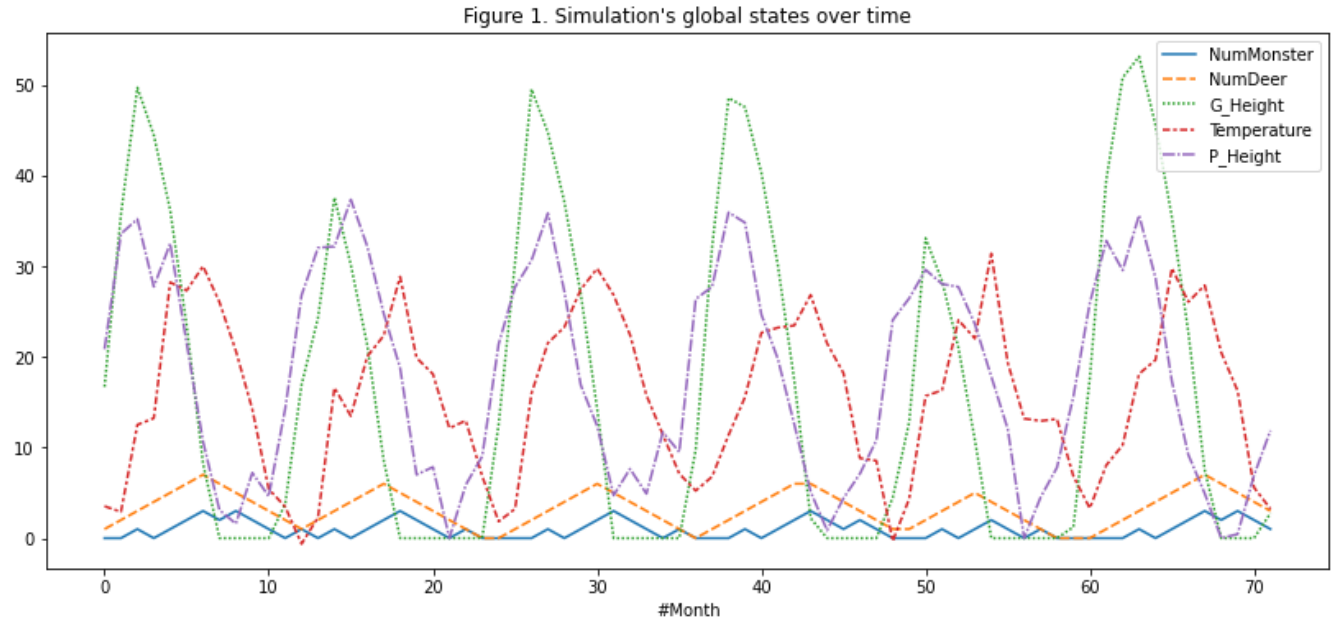
2. A table showing values for temperature, precipitation, number of deer, height of the grain, and your own-choice quantity as a function of month number.

Month	Year	NumMonster	NumDeer	G_Height	Temperature	P_Height
1	2022	0	1	16.6884	3.52459	20.8573
2	2022	0	2	35.69	2.89625	33.5665
3	2022	1	3	49.6846	12.5054	35.1965
4	2022	0	4	44.4642	13.2295	27.735
5	2022	1	5	36.1639	28.2194	32.4972
6	2022	2	6	23.4639	27.3028	21.5088
7	2022	3	7	8.22388	29.992	10.6488
8	2022	2	6	0	26.0307	3.09263
9	2022	3	5	0	20.6386	1.59223
10	2022	2	4	0	14.2165	7.20671
11	2022	1	3	0	5.40993	4.6158
12	2023	0	2	3.73447	3.46187	14.2585
1	2023	1	1	16.9325	-0.629377	26.799
2	2023	0	2	24.2898	2.28661	32.0361
3	2023	1	3	37.5715	16.5961	32.1655
4	2023	0	4	30.1295	13.4714	37.3445
5	2023	1	5	21.277	20.0429	32.1832
6	2023	2	6	8.58503	22.3349	24.7791
7	2023	3	5	0	28.8369	18.7712

8	2023	2	4	0	19.8946	7.00126
9	2023	1	3	0	18.0965	7.84456
10	2023	0	2	0	12.1328	0
11	2023	1	1	0	12.9664	5.88848
12	2024	0	0	0	6.83049	9.02656
1	2024	0	0	12.5458	1.83684	21.4068
2	2024	0	1	30.438	3.2317	27.6969
3	2024	0	2	49.5168	15.9719	30.6354
4	2024	1	3	44.7324	21.5261	35.8382
5	2024	0	4	37.1139	23.2694	27.2258
6	2024	1	5	26.9542	27.4308	16.8909
7	2024	2	6	14.2542	29.7449	12.3704
8	2024	3	5	0	26.8135	4.71644
9	2024	2	4	0	22.4293	7.64164
10	2024	1	3	0	15.7606	4.8966
11	2024	0	2	0	11.4231	11.6888
12	2025	1	1	0	7.10554	9.50491
1	2025	0	0	9.74447	5.23257	26.3694
2	2025	0	1	32.1164	6.78843	27.7311
3	2025	0	2	48.5482	11.3644	35.9239
4	2025	1	3	47.5487	15.5431	34.799
5	2025	0	4	40.297	22.6524	24.6619
6	2025	1	5	30.1375	23.2204	19.7898
7	2025	2	6	17.4378	23.4525	12.5863
8	2025	3	6	2.19792	26.8294	5.12142
9	2025	2	5	0	21.4894	0.857965
10	2025	1	4	0	18.1948	4.40922
11	2025	2	3	0	8.82005	7.10001
12	2026	1	2	0	8.53558	10.7819
1	2026	0	1	4.46368	-0.332722	24.0613
2	2026	0	1	12.8067	4.34227	26.4552
3	2026	0	2	33.0795	15.6836	29.6026
4	2026	1	3	28.3708	16.3115	28.037
5	2026	0	4	20.9868	24.0522	27.7122
6	2026	1	5	10.8268	22.0208	23.6095
7	2026	2	4	0	31.3986	17.8294
8	2026	1	3	0	19.3693	12.0613
9	2026	0	2	0	13.1866	0
10	2026	1	1	0	12.9351	4.4953
11	2026	0	0	0	13.1338	7.79752

12	2027	0	0	1.2248	6.82894	15.6134
1	2027	0	0	17.6155	3.29023	25.9379
2	2027	0	1	39.4999	8.03625	32.7992
3	2027	0	2	50.7857	10.2699	29.544
4	2027	1	3	53.1188	18.1182	35.6155
5	2027	0	4	45.5443	19.6533	28.7016
6	2027	1	5	35.3968	29.7671	17.2964
7	2027	2	6	22.6968	26.0617	9.19562
8	2027	3	7	7.4568	27.8891	4.91583
9	2027	2	6	0	20.495	0
10	2027	3	5	0	16.2489	0.445878
11	2027	2	4	0	5.59056	6.92804
12	2028	1	3	2.74929	3.22504	11.8848

3. A graph showing temperature, precipitation, number of deer, height of the grain, and your own-choice quantity as a function of month number. Note: if you change the units to °C and centimeters, the quantities might fit better on the same set of axes.



4. A commentary about the patterns in the graph and why they turned out that way. What evidence in the curves proves that your own quantity is actually affecting the simulation correctly?

The number of deer and monsters will start to decrease every year around July and August to about December, when the grain height drops to zero, because the number of deer is significantly

tied to the grain height, and the number of monsters is related to the number of deer. Because of the grain height, the number of deer and monsters will increase from around January to around July, and the cycle will repeat itself each year. We can also notice from the curve that the curve starts to fall around month 6 and then starts to increase around month 10. Every year, the max number of deer is seven, while the number of dinosaurs is three.