Project #3 Functional Decomposition

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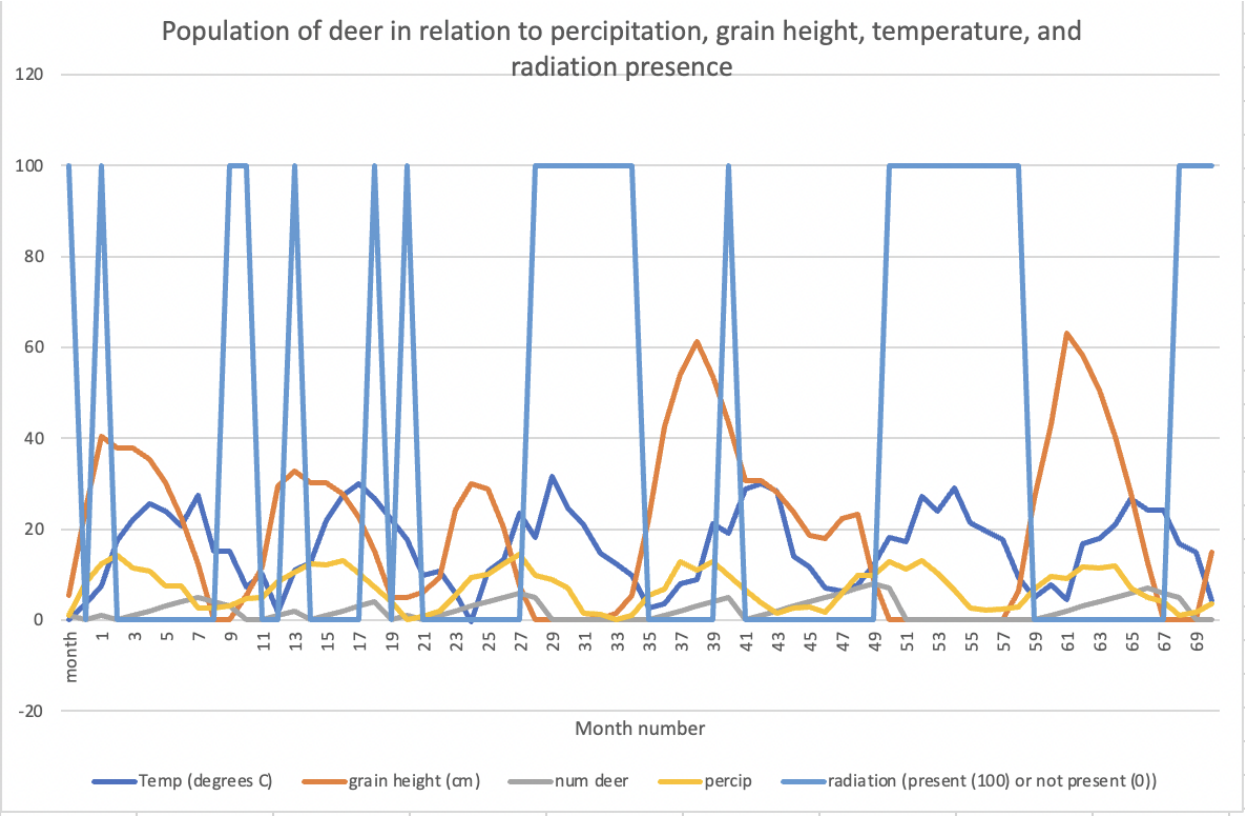
What your own-choice quantity was and how it fits into the simulation.

Less grain means less food. Hungry workers means more chances to make mistakes when operating RBMK-1000 Nuclear reactors. So, when there is less grain, there are random Chernobyl 2.0 events that are more likely to happen (a lot of radiation). Assuming that grains are not affected by radiation, **the deer population becomes 0**. The fallout only stays for one month. **Presence of radiation is measured in 0 (not present), and 100 (present) – these are the only two possible values.**

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?

As seen on the graph and table, when the radiation is present (100), the number of deer drops to 0. The intervals where radiation is continuously present the deer population remains at 0. This allows for the two peaks of grain height seen (there are no deer eating the grain, so it can grow more).

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



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.

Temp (degrees C)	grain height (cm)	num deer	percip	radiation (present (100) or not present (0))	month	year
0	5.362277	1	1	100	0	2022
3.52459	24.36391	0	8.211525	0	1	2022
7.524459	40.305679	1	12.303991	100	2	2022
17.486905	37.842138	0	14.347074	0	3	2022
22.135264	37.84302	1	11.540895	0	4	2022
25.619617	35.303032	2	10.665057	0	5	2022
23.999176	30.223121	3	7.612801	0	6	2022
20.835639	22.60667	4	7.444946	0	7	2022
27.328635	12.44667	5	2.625403	0	8	2022
15.061929	0.091081	4	2.632337	0	9	2022
15.228651	0	3	3.147608	100	10	2022
7.363949	5.394616	0	4.641324	100	11	2022
10.090618	11.737301	0	5.008028	0	12	2023
1.836836	29.629504	1	8.427871	0	13	2023
10.990971	32.776817	2	10.508251	100	14	2023
12.536903	30.298017	0	12.27175	0	15	2023
21.888118	30.299156	1	12.218725	0	16	2023
27.41027	27.759156	2	13.046718	0	17	2023
30.012343	22.679156	3	10.397435	0	18	2023
26.697587	15.059158	4	7.275826	100	19	2023
22.096926	4.899824	0	4.105068	0	20	2023
17.671462	4.928863	1	0	100	21	2023
9.844246	6.140201	0	0.71258	0	22	2023
10.756921	9.396939	1	1.890696	0	23	2023
5.94428	24.190646	2	5.485006	0	24	2024
-0.332724	29.993615	3	9.472935	0	25	2024
10.702663	28.799468	4	10.101641	0	26	2024

13.319675	20.315744	5	12.463222	0	27	2024
23.541896	7.615883	6	14.367908	0	28	2024
18.167564	0	5	9.834898	100	29	2024
31.723022	0	0	8.865444	100	30	2024
24.755245	0.000033	0	7.105925	100	31	2024
21.002405	0.001597	0	1.593318	100	32	2024
14.672318	0.360916	0	1.261638	100	33	2024
12.453382	1.4134	0	0	100	34	2024
9.762484	5.496802	0	1.021492	100	35	2024
2.714791	22.314752	0	5.417305	0	36	2025
3.678396	42.608296	1	6.836576	0	37	2025
8.012443	54.018137	2	12.85392	0	38	2025
8.814674	61.152982	3	10.890614	0	39	2025
21.239671	53.535255	4	12.756821	0	40	2025
19.163144	43.395689	5	9.715156	100	41	2025
28.829672	30.695689	0	6.610838	0	42	2025
29.9278	30.695689	1	3.76574	0	43	2025
28.281759	28.155689	2	1.541254	0	44	2025
14.02729	23.746373	3	2.560085	0	45	2025
11.64612	18.715108	4	2.944353	0	46	2025
6.940361	18.013343	5	1.749764	0	47	2025
6.442816	22.262798	6	5.879757	0	48	2026
7.66335	23.360982	7	9.867357	0	49	2026
12.114703	8.976346	8	9.718415	0	50	2026
18.207936	0	7	12.954822	100	51	2026
17.151173	0	0	11.165858	100	52	2026
27.204018	0.000001	0	13.12015	100	53	2026
23.936806	0.000104	0	10.192652	100	54	2026
29.127036	0.000104	0	6.683089	100	55	2026

21.341044	0.00138	0	2.628541	100	56	2026
19.538172	0.009102	0	2.179237	100	57	2026
17.692462	0.053254	0	2.49677	100	58	2026
9.331756	6.396067	0	2.871424	100	59	2026
4.993161	26.730556	0	6.724102	0	60	2027
7.68049	42.980957	1	9.555202	0	61	2027
4.56024	63.162753	2	9.249686	0	62	2027
16.802873	58.240355	3	11.69066	0	63	2027
17.904888	50.683433	4	11.496996	0	64	2027
20.882369	40.526916	5	11.842679	0	65	2027
26.681184	27.826918	6	7.144926	0	66	2027
24.212808	12.586974	7	5.040005	0	67	2027
24.302351	0	6	4.091763	0	68	2027
16.820183	0	5	0.964667	100	69	2027
14.977211	0	0	1.746752	100	70	2027
4.185172	14.90381	0	3.476245	100	71	2027