

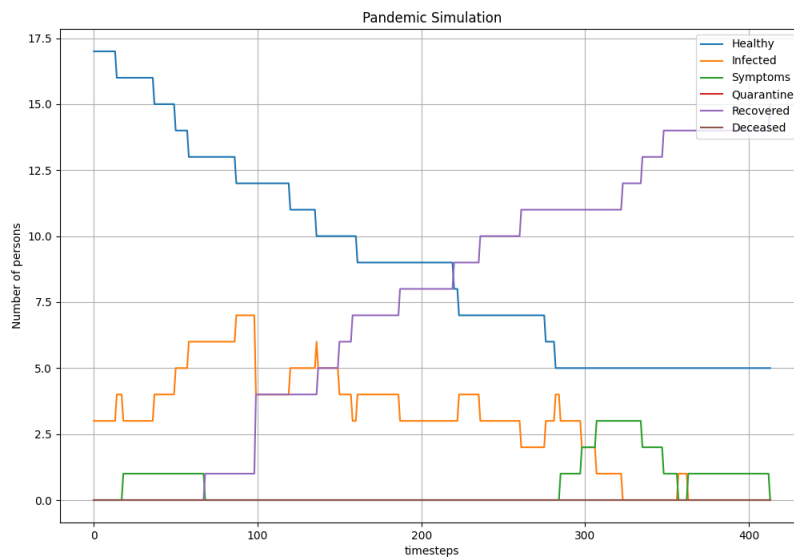
# Pandemic Simulation Results

Jan Johannsen 31.1.24

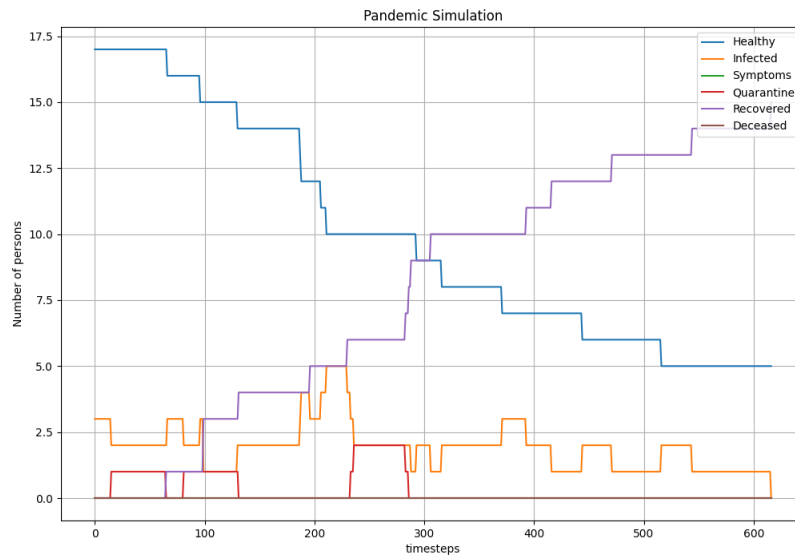
Default parameters:

- ZONEHEIGHT = 100
- ZONEWIDTH = 100
- NUMPEOPLE = 20
- INFECTIONDURATION = 100
- INFECTIONRADIUS = 5
- INFECTIONCHANCE = 0.2
- MAXMOVESPEED = 2
- INITIALINFECTED = 3
- INFECTEDTOFOLLOWINGCHANCE = 0.005
- FATALITYRATE = 0.02
- NOIMMINUTYCHANCE = 0.1
- SOCIALDISTANCING = False
- QUARANTINE = False

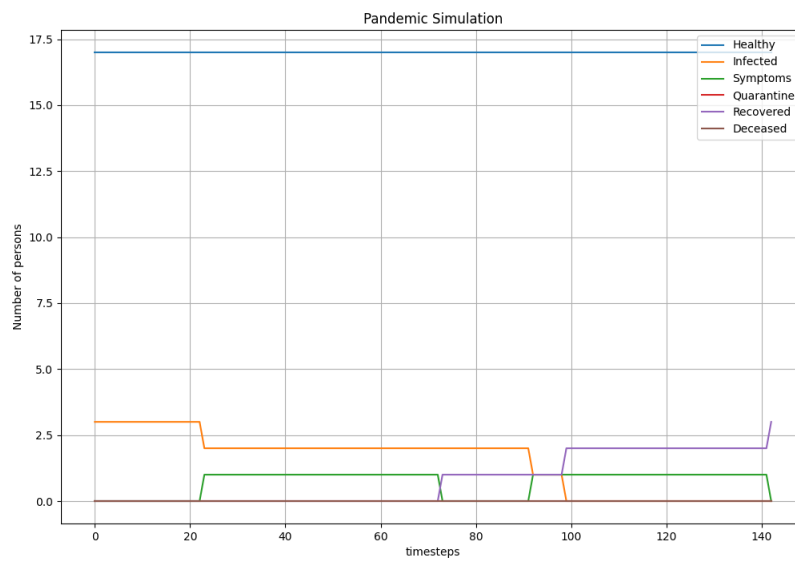
Default



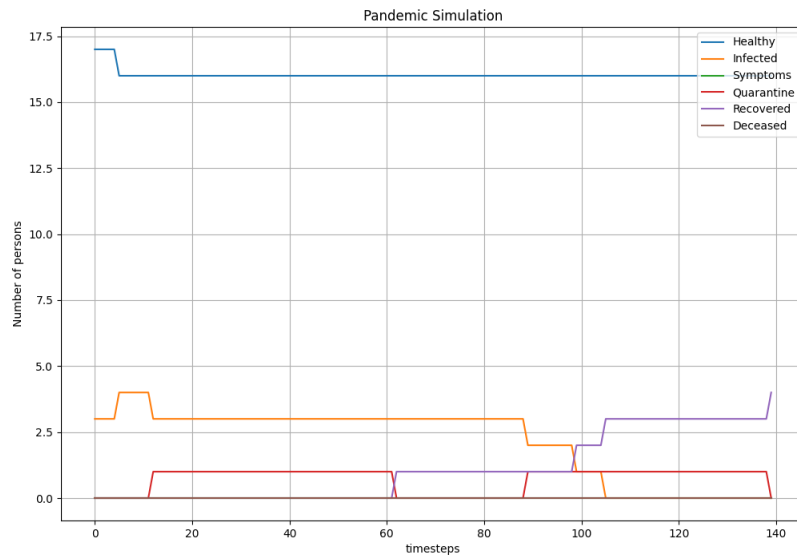
Quarantine -> True



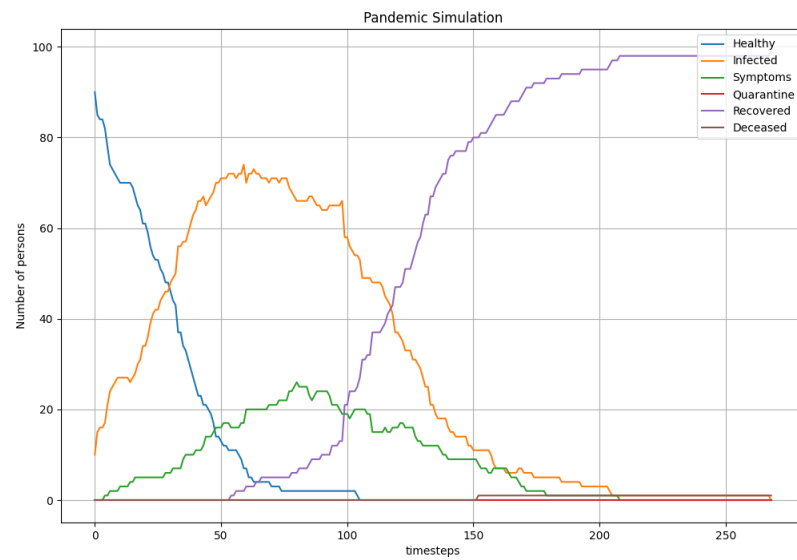
Socialdistancing -> True



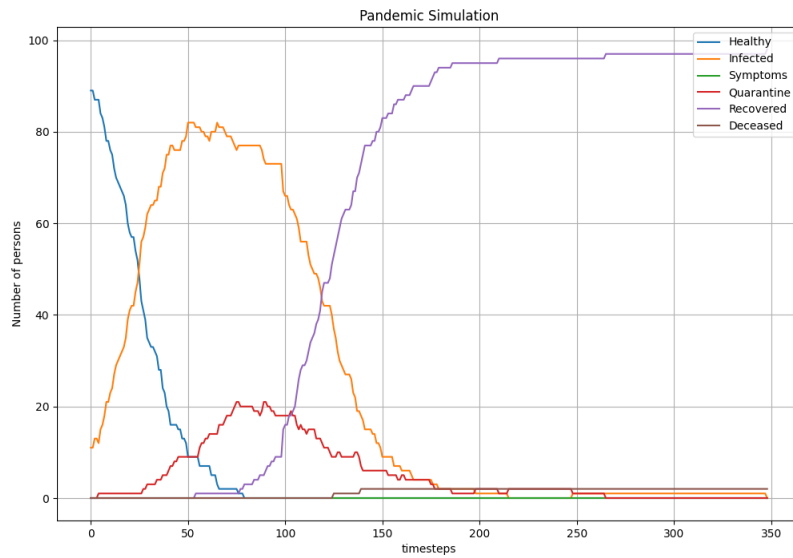
Quarantine -> True, Socialdistancing -> True



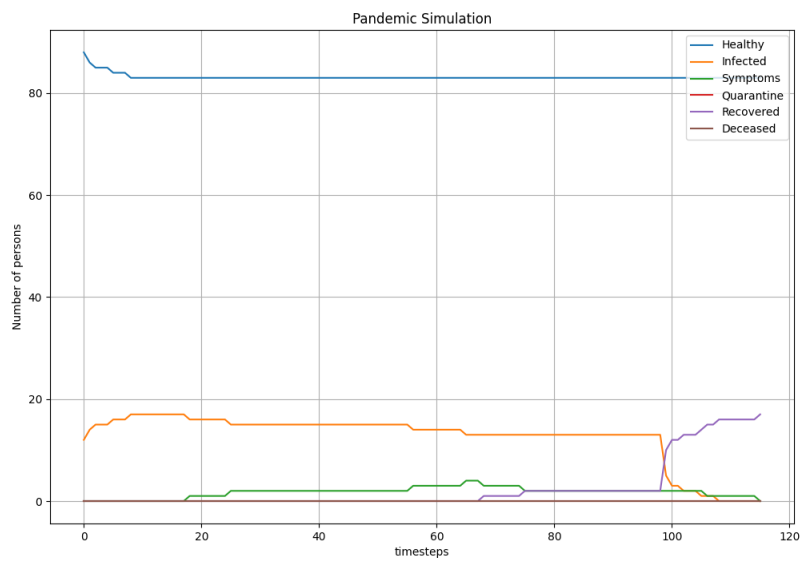
People -> 100, initially infected -> 10



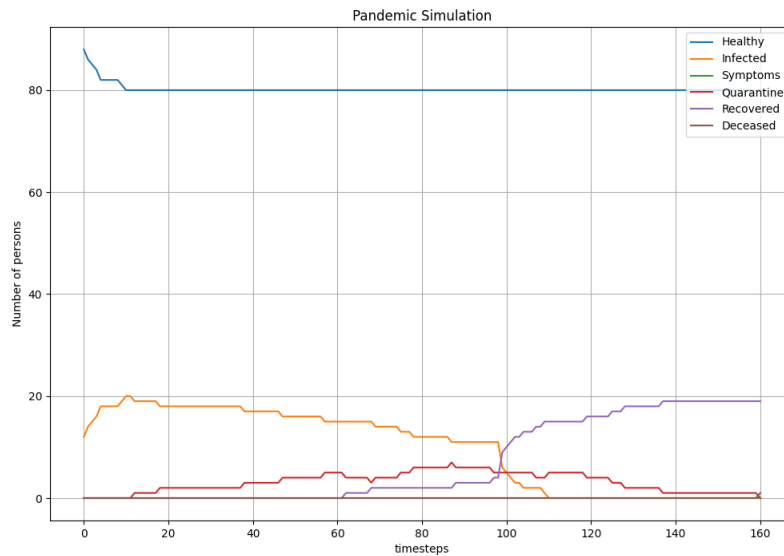
People -> 100, initially infected -> 10, Quarantine -> True



People -> 100, initially infected -> 10, Socialdistancing -> True



People -> 100, initially infected -> 10, Quarantine -> True, Socialdistancing -> True



## Interpretation of results:

When looking at the experiment results in Graphics 1 through 8 the impact of social distancing is far greater than quarantine. When comparing the default setup for both 20 and 100 people, social distancing almost completely stops new infections after people have distanced themselves from each other's random starting positions. However, this effect gets less effective when the population increases from 20 to 100 people. This is most likely due to people having less space overall to distance themselves from each other. Contrary to this, when comparing the quarantine results with the ones without infection numbers seem to increase. Since quarantine results in infected individuals not being able to infect others, this effect goes against expectations. Considering this, the most likely explanation for these results is either errors in the implementation or the sample size for the results being too small.