CS 201 Homework 12-5-2021

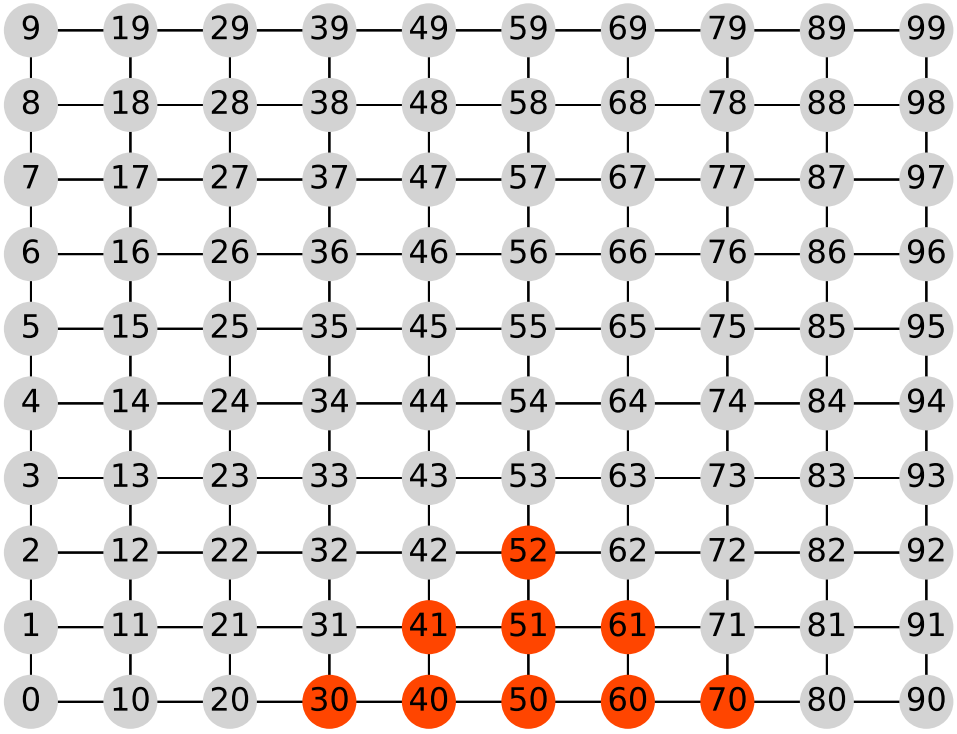
Task 1

Start with the classwork code posted on Google Classroom. As you can see, the problem with the model is that a transmission happens as we go over the for loop instead of the next time period.

To fix this problem, change the .getsick method. Instead of updating .inf attribute of the agent, update .inf_t1 attribute (self.inf_t1 = 1). This way, you know who will get sick in the next time period (but not right away).

Then, after you are done checking all the edges for the disease transmission (for g in G.edges loop), you need to update the .inf attribute of all agents. All agents who has .inf_t1 == 1 should become actually infected (.inf = 1). Make sure to reset .inf_t1 = 0 after that.

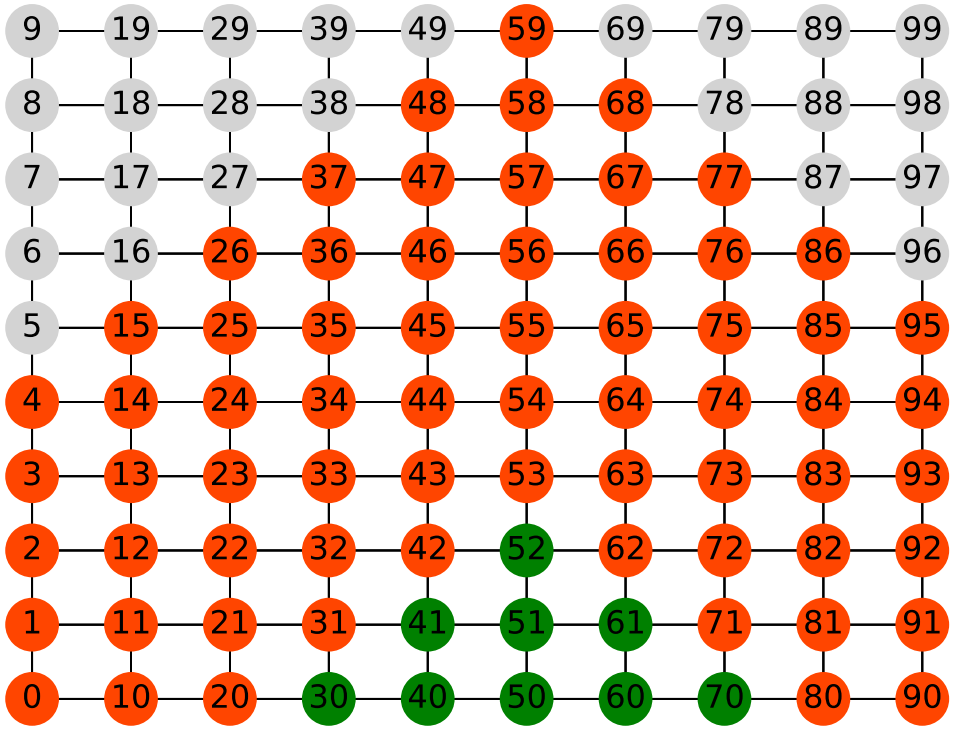
As a result, the disease transmission will occur only between the neighbors. For T = 3 and agent 50 being initially sick, the grid would look like this:



Make sure you are able to replicate the above.

Task 2

Assume that a person is sick for 7 days after which they are recovered. Can you implement this modeling assumption? Hint: You need to use the days_sick attribute. If days_sick == 7 the person should recover. For T = 10 and agent 50 being initially sick, your grid should look like the below:



Make sure you are able to replicate the above.