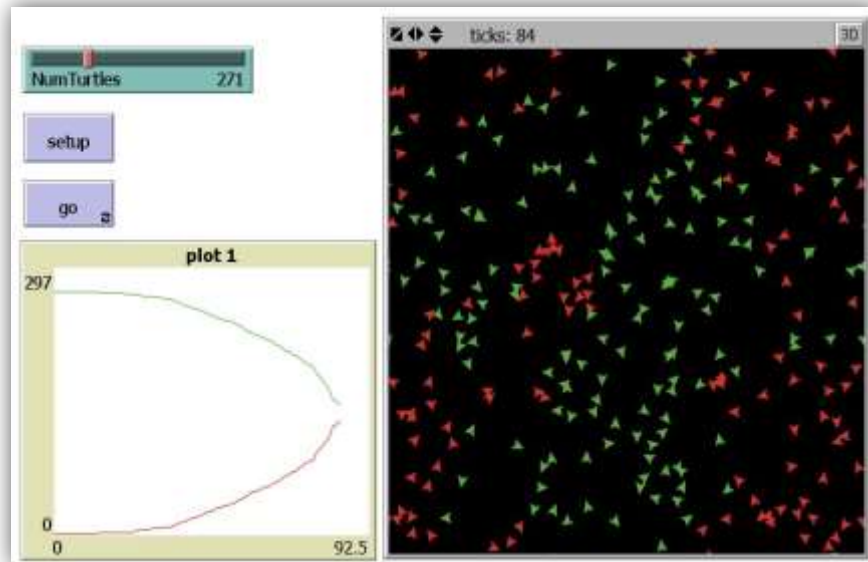


CS108L Computer Science for All
Module 9: Spread the Red: An Epidemiology Model



Model Overview:

In this lab, you will be writing a model that represents a simple epidemic spreading through a group of agents. The epidemic starts with one sick agent and the disease spreads to the rest of the agents by contact (sharing the same patch). We will build the simple Epidemic Model first and then add different disease related things to the model (doctors, immunity, etc.). The more things you add, the more points you get!

The Basic Setup:

Minimum Requirements:

- ❖ Agents
- ❖ Slider to adjust the number of agents.
- ❖ Agents are healthy or sick.
 - o Healthy and sick agents must be two distinct colors.
 - o Boolean variable needed to state whether agent is sick healthy.
- ❖ Initially only one agent is sick.
- ❖ Sick agents spread the disease by colliding with healthy agents.



- ❖ Agents wiggle to move around.
- ❖ World must be set to wrapping.
- ❖ Add a graph that tracks the number of sick and healthy agents.

Add one of the following features:

- ❖ Sick agents to die after a certain amount of time.
- ❖ Implement hospitals that will cure agents that visit.
- ❖ After a certain period of time, infected agents will develop immunity to the disease and cannot be re-infected.

Module 9: Epidemiology Grading Rubric (20 Points Total)		
Done	Points	Task
	1	A: <ul style="list-style-type: none">• Submit a NetLogo source code with the file name: <code>M1_firstname.lastname.nlogo</code>.• The first few lines of your Code tab are comments including the following: <code>;Student's Name:</code> <code>;School:</code> <code>;Teacher's Name:</code> <code>;Date:</code>• If working in a group, include the initials of the individual who coded their respective procedures.
	3	B: <ul style="list-style-type: none">• The code has appropriate in-line comments.
	2	C: <ul style="list-style-type: none">• Complete Info Tab. See Coding Standards Guidelines for more information.
	3	D: <ul style="list-style-type: none">• “Setup” button clears the world and populates the world with a single infected agent and the rest as healthy agents.



	3	E: <ul style="list-style-type: none">• “Go” button activates agents’ movements, cause healthy agents to become sick when sharing a patch with a sick agent, and newly infected agents will change colors when first infected.
	3	F: <ul style="list-style-type: none">• Include a slider that controls the population in the world.• Include a graph that plots the number of sick and healthy agents over time.
	5	G: <ul style="list-style-type: none">• Using a variable, sick agents die after a period of time.
	5	H: <ul style="list-style-type: none">• Include a hospital that will cure infected agents.
	5	I: <ul style="list-style-type: none">• Agents become immune using a variable. Their color changes to a color distinct from the color of sick and healthy agents.