Instructions 1

Please select the best answer.

Question 2

In the spread of disease model, contact results in infection, but in most real-world diseases every time people come into contact they necessarily spread disease. Moreover, some people are more resistant to disease than others. What would be the best way to have th not spread disease every time they come in contact, and to have some individuals be less likely to get a disease?

- A. add turtles-own property that controls the susceptibility of a disease, and set it differently for each turtle, then use that property along with a random num determine if the person contracts the disease when they come in contact with an infected person
- B. add turtles-own property that controls the susceptibility of a disease, and set it differently for each turtle
- C. have a global property that controls the probability of one turtle infecting another
- D. use a social network

Question 3

We spent most of this unit looking at the effect of population density on disease spread. What other variables might affect disease sp how might you include them in the model?

- A. the size of the world, since this would directly affect the population density, we could run the model with different size worlds, but with the same populatio
- B. the speed with which agents move through the world, we could add a slider to control how much the turtles move each time step
- C. how big the radius around a turtle is where they will infect another turtle, right now they infect turtles on the same patch, but we could add an input to ma patches nearby
- D. all of the above

Question 4

In the environmental variant, the disease stays where ever the person was and then decays, but what if you wanted to model a diseas spread in the air? How might you model that?

- A. there is no way to model that
- B. you could model the disease itself as an agent which moved according to air patterns
- C. the current model already has the disease move within the environment independent of the turtles
- D. you could use links

Question 5

Why do we need to run the model multiple times in agent-based modeling?

- A. because often the model does not work the first time
- B. the models are often stochastic and so we need to run them multiple times to see what patterns are part of the model and what are just random noise
- C. agent-based models run faster over time
- D. we don't one model run is good enough

Question 6

In our current model, the disease does not actually harm anyone. What if the disease killed the infected person after 5 ticks? Feel fre NetLogo and make this change if you want. What would be different about the model?

- A. nothing the results would be very similar
- B. the results would depend on how many individuals were infected by each infected individual before they died
- C. it would not change the network variant unless the num-infected was greater than 10
- D. if the num-people ← 50 it would not affect the model

Question 7

In the network variant when the average degree was in the middle cases sometimes the number infected at 50 time steps was high, sometimes it was low. What could you do to make this result more consistent?

- A. it would be wrong to change the model at all
- B. you could create networks where every agent was connected to the largest component of the network in some way
- C. you could increase the infection rate
- D. you could decrease the initial number of agents infected

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Question 8

What is the benefit of a 3D plot over a 2D plot?

- A. you can explore the interaction of two input variables with the output variable
- B. you can explore the interaction of as many input variables as you want with as many output variables as you want
- C. they look better and are more convincing
- D. there is no benefit

Question 9

Linear regression gives you an indication of:

- A. how good your agent-based model is
- B. whether your agents are behaving as they should
- C. how much each of your input variables affects your output measure
- D. the statistical significance of your output measure

Question 10

In R, the basic command to draw a graph is:

- A. read.csv
- B. draw
- C. graph
- D. plot

Question 11

BehaviorSpace outputs the data to a csv file. In this file what data is not automatically recorded?

- A. the name of the model and the experiment
- B. the input parameters and output measures
- C. when the model was run
- D. the random number seed