Introduction to Agent-Based Modeling (Summer 2018)

1.11 Review » Unit 1 Exam

Question 1

What does ABM not model well?

- A. A single, erratic individual.
- B. A group of despotic leaders who act in a similar manner.
- C. Individuals connected via a social network.
- D. Individuals living in a geographical space.

Question 2

Why is the representation of ABM important?

- A. It can make problems that are difficult in another representation easy to explain.
- B. It concretizes abstract notions.
- C. Agent descriptions are often easier for non-technical people to understand.
- D. All of the above.

Question 3

What is one limitation of agent-based modeling?

- A. It does not work well with social network data.
- B. It requires that you have knowledge or a theory about aggregate-level behavior.
- C. It requires that you have knowledge or a theory about individual-level behavior.
- D. It does not allow for agent interactions.

Question 4

Why should you use ABM instead of another method?

- A. ABM will provide me with the most value for the problem I am studying.
- B. ABM is the only method I know.
- C. ABM solves all problems faster and cheaper.
- D. ABM is better than all other methods.

Question 5

What is the best level of representation to create a model of wolves and sheep?

- A. Each agent should represent exactly one wolf or exactly one sheep.
- B. It depends on the question you are trying to answer.
- C. Each agent should represent a flock of sheep or pack of wolves.
- D. Each agent should represent one wolf and one sheep.

Question 6

Open the Daisyworld model, which is found in the Biology section of NetLogo Models Library. This model is meant as a thought exper explores how different aspects of the world control the temperature of the world. If you run it as is, the temperature is usually slight and the model ends with only black daisies left. Explore the scenario chooser. Under which scenario are you most likely to get a mix and black daisies to survive? [Make sure to hit SETUP between trying each scenario. The scenarios themselves do not reset the worl fail to hit SETUP you will be starting with the world state from the previous scenario]

- A. our solar luminosity
- B. ramp-up-ramp-down
- C. maintain current luminosity
- D. high solar luminosity

Question 7

Open the Termites Model in the NetLogo Models Library. It is in the Biology section. In this model there are two objects, wood chips termites. Without looking at the code, describe the rules of behavior that control the Termites? Hint: You can reduce the number of t wood chips, and slow the model down.

- A. Termites turn orange then white, and the wood chips move on their own.
- B. Termites pick up a wood chip when they run into one, and set it down when they find a blank space.
- C. Termites move toward the center of wood chip piles.
- D. A central controller tells the termites where to put the chips.

Question 8

What feature of a complex system almost requires an agent-based model?

- A. Temporal Dynamics
- B. Adaptation
- C. Social Networks
- D. GIS

Question 9

Which of these is not an ABM platform / language?

- A. NetLogo
- B. Repast
- C. Swarm
- D. Beehive

Question 10

What are the agents in Schelling's Tipping Model supposed to represent?

- A. Tip Tops
- B. Family Units in Houses
- C. Green and Red People
- D. Nothing at All