CS108L Lab 11: Independent Project Suggestions

Project Suggestions (remember you do not have to choose one of these):

Ecosystem Ideas:
- Change the fish ecosystem model to another species such as sea turtles or birds. Include a specific location where eggs can be created (beaches or trees) and predators for the eggs.
- Change the fish ecosystem to include fishing (fisher-peoples and their effect on the population – perhaps only at certain locations)
- Change the fish ecosystem to include the effect of pollution.

Epidemiology Ideas:
- Include a point source for the infection, like a well or other source.
- Other factors might include health coverage, previous infections, infections turtles who are not sick …

Combine the Ecosystem with Epidemiology:
- Take your ecosystem and introduce illness!

Pick a NetLogo or NetLogo 3D model to expand. NetLogo model library has many very cool models.   Here is an example of what you can do:

Example: Model to the Game of Life: One of these is one of the earliest and simplest artificial life programs called *The Game of Life.* What is remarkable about this model is that using a "world" consisting of a simple, 2D grid and only 4 simple rules, the model exhibits many complex emergent, behaviors.
Open the model, read the info tab, run the model then read the info tab again. Then start creating. You could try changing some of the rules, adding more rules (for example, use a larger neighborhood that includes neighbors a distance of 2 from the center). One cool extension is to port the existing model to NetLogo 3D. In addition to modifying the existing code, this would mean extending the rules to apply to 3D. For example, this set of rules works in 3D (3D Rules: Cubes with only 1 or less neighbors die, (0 or 1 neighbor dies) as if by loneliness. If 5 cubes surround an empty cell, they breed and fill it. If a cube has 8 or more neighbors, it dies from overcrowding.