



## CS108L Computer Science for All

### Module 8: The Final Project (Independent)

If you have decided to do an independent project (not networks) you are in the right place! Make it cool! Make it awesome! Make it yours!

#### The Working Model and Results

Your final project must be a NetLogo Model together with a data sheet and a written discussion of the results obtained by running that model in the info tab under 'Things to Notice'.

You may create a model from scratch, change a model we have developed during the course, or expand one of the models in the NetLogo Model's Library.

- If you create a model from scratch, it should be as complex or sophisticated as the ecosystem or epidemiology models.
- If you change a model that we have developed, then the new model must include some significant feature that it did not have before. You cannot just change the species or add a couple of variables in the model.
- If you expand a model we created during this class, the expansion must not be an extra credit that was offered for that model in the lab assignment.
- Look in the example section of the website for some ideas on projects.

To ensure completion of the project and ease of development the project is divided up into 3 different milestones as listed below (refer to UNM Learn for due dates):

- Milestone 1: Discuss with your instructor in class and due Networks Milestone 1 (20 pts).
- Milestone 2: Complete an outline of your model similar to the epidemiology model, complete the rubric (refer to template on webpage), submit the beginnings of the work in NetLogo. (20 pts).
- Milestone 3: Finished product including results and report.



## Milestone 1: Making sure you and the instructor know what you are doing.

Discuss with your instructor what you want to do in the first week. On 1<sup>st</sup> day of class the following week **in class** have a written proposal that is part of the initial outline. This is done to ensure you have a good grasp on what you want to do and so the instructor may verify the project is short enough to complete within the remaining time frame.

The proposal will include

- You name.
- Project Title.
- Project Overview.
- Description of model you are developing - please be specific so that we can understand what you plan to do. Use the scientific method to organize this (have a question, hypothesis, prediction).

## Milestone 2: Planning it all out and getting started.

The Outline will be a continuation of the proposal (1<sup>st</sup> 4 are the same):

- Your name.
- Project Title.
- Project Overview.
- Description of model you are developing - please be specific so that we can understand what you plan to do. Use the scientific method to organize this (have a question, hypothesis, prediction).
- What agents you are using and what they represent.
- How are you represented the agents (color, shape, breed, etc..)
- What variables (include type) you believe you need.
- What procedures you believe you need and their intended use (e.g. Movement: moves cat breed in a wiggle walk (+/-60 degrees)).
- What data you are collecting for your test/results.
- What buttons, monitors, graphs you need.
- Extensions if any.
- If this is a modification of an existing model, note what is new, don't just put



the existing items.

### The Grading Rubric

Use the template on the webpage. Milestones 1 and 2 are completed, you will do milestone 3.

It must add up to 40 points divided between:

- The basics (included on template, do not change these...10pts).
- Model Development (generally easiest to associate with the buttons, procedures and GUI features. Refer to your outline a previous assignments, max 30 pts).
- Experimentation, data collection and data representation (table, graphs, max 6 pts).
- Results write-up (what you found, max 5 pts).

Note: You may vary the points but don't exceed the max for each one (they add up to more than 40 pts).

### The NetLogo Program

Submit what you have to this point. We do not expect a complete program but rather a 'good' start. You may have the setup mostly done, some additional procedures with some work in them and some other procedures that are their but not listed. GUI items like buttons, sliders and monitors organized even if they aren't being used yet.

### Milestone 3: Finishing it up.

For the completed project make sure you address the following:

- A. Proper file naming(M8.MS3.firstname.lastname.nlogo and for the data sheet it's the same except for the extension (aka .docx for word or .xlsx for excel) and the initial comments will include name, lab, UNM etc... just like all the previous modules.
- B. Code is organized well and has appropriate in-line comments
- C. Info tab must be filled out. You should include as much information as you



can, since the grader may not be familiar with your project. Also avoid 'walls of text'.

- a. What is it: A good description.
  - b. How to use (Explain how to use any sliders or buttons).
  - c. How it works (Explain how the code works to a user, not a programmer).
  - d. Things to notice (The discussion of your work/results. It should be concise but detailed).
  - e. Fill out the remainder of the tabs as appropriate.
- D. A separate file that is a data sheet with all your data on it organized in a clear and concise method. If you have tons of individual data points, summaries are acceptable.
- E. The program runs.

Keep in mind your final model, and results will be graded according to the grading rubric you submitted.