

ASSIGNMENT 1: EXPLORING NETLOGO

Objective: To develop your personal website for the course, explore the NetLogo software, and export a model simulation video to your website.

Description: In this course you will be submitting all your assignments through your personal website that you will create using the University of Oregon's WordPress license. This week you will learn how to create this website that will host a different page for each of the course's assignments. Each assignment page will include text that addresses specific assignment questions and a set of model simulation videos that provide a visualization to aid your explanation. You will create your first NetLogo model, and capture the model in a video that you will upload to your site.

INSTRUCTIONS

PART 1: SETTING UP YOUR PERSONAL WEBSITE

1. Follow the instructions on the university's website that explains how to create your personal website (also referred to as a blog – they are basically the same thing): <https://it.uoregon.edu/blogs/firstblog>
2. Create a homepage that describes something about who you are. Information on this page can include your major, why you are taking this course, and what you hope to be doing with your degree in the future. Feel free to change this page as the term progresses.
3. Create a second page titled A1 (for Assignment 1). Here you will answer the questions for the assignment and embed your simulation videos (instructions on how to do this are below). You will be creating a separate page for each assignment, which will result in 7 pages by the end of the course (home page + 6 assignments = 7 pages).

PART 2: EXPLORING NETLOGO

3. NetLogo is a software application that allows you to create models of complex systems. The syntax (programming language) might appear strange at first, especially to those who have not programmed before, but it has been created in a way to allow non-programmers to develop models with “relative” ease. Go to the NetLogo User Manual at <https://ccl.northwestern.edu/netlogo/faq.html> and complete Tutorials #1 - #3 (links are on the left side of the page). Be sure to go through the tutorials with a deliberate intention of understanding the steps in creating and interrogating a model. The more time you put into this now, the better you will enjoy and succeed in the course.

PART 3: EMBEDDING VIDEOS IN YOUR WEBSITE

4. When you have completed developing the model from Tutorial 3, add a button in the model interface labeled “make-movie”

5. In the Code panel, add the following section of code

```
to make-movie

  ;; prompt user for movie location
  user-message "First, save your new movie file (choose a name ending with .mpg)"
  let path user-new-file
  if not is-string? path [ stop ] ;; stop if user canceled

  ;; run the model
  setup
  movie-start path
  movie-grab-view
  while [ ticks < 2000 ]
    [ go
      movie-grab-view ]

  ;; export the movie
  movie-close
  user-message (word "Exported movie to " path)
end
```

NOTES:

- The code “while [ticks < 2000]” means the model will record when this condition is true. Make sure there is a stop condition or the movie export will continue until you force close the application. 2000 ticks will likely be too many, so select a number of ticks that you are comfortable with.
- Set the model speed before starting to record. Adjustments during recording will be visible in the movie.

6. After you export your movie, you will need to upload it to YouTube. You will need to first create a YouTube account, and then upload your video to your account page. Remember that uploading a video can take a long time depending on size and restrictions from the service you are using, so keep that in mind if you are thinking of waiting until the last minute to complete the assignment. After uploading the video, click on the video link provided to go to your video, and then right-click on the video frame and select “embed code”.

7. In WordPress, past the code directly into the page where you want it to appear. Be sure to be in “Text” mode while editing.

PART 4: DISCUSSION

8. On your Assignment 1 page, address the following three questions:

- How does the “energy-from-grass” parameter influence the emergent patterns observed in the model simulation?
- How does the “birth-energy” parameter influence the emergent patterns observed in the model simulation?
- Is the emergent pattern sensitive to the initial population size?

NOTE: A “B” assignment is one that answers these questions correctly. An “A” assignment is one that answers these questions correctly and goes beyond expectations by providing visualizations that support each answer.

GRADING

You will be graded based on the following criteria:

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| • Correct development of your personal website | 5 POINTS |
| • Correctly developing the NetLogo model from Tutorial 3 in the NetLogo manual | 5 POINTS |
| • Answering the three questions from PART 4 | 15 POINTS |

TOTAL	25 POINTS
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DUE DATE:

Tuesday, April 7th at 11:59pm

*Late submissions will be penalized 5% per day.