

CISC 7412 Fall 2011, Project I

Description

The project is to build a simulation of the Steels Mars rover, described on pages 45 to 47 of the notes to Lecture 3, in Netlogo.

Start at the beginning

You need to start by downloading and installing Netlogo. This is free software which runs under Windows, OSX and Linux. There is a link to where you can download it from on the course website (projects page).

You would also be well advised to complete the tutorials that you can find in the Netlogo User Manual:

Help > Netlogo User Manual > Learning Netlogo

Implement the Mars Rover

Write a Netlogo simulation of agents that follow the rules for Steels' Mars rover. Since this is your first Netlogo simulation, I've given you a start on the project. The file:

`rover-student-version.nlogo`

which you can download from the course website (projects page), does the grunt work of setting the world up. All you have to do is to implement the rules that tell the rover what to do.

Aside from making sure that the agents in the simulation follow these rules, I don't mind how else you modify the code in `rover-student-version.nlogo` (and the more, different, solutions I get, the better :-)

Document it

All you are going to hand in is the Netlogo program so make sure you:

1. Write lots of comments in your code. If I don't understand what your code does, you won't get full credit.
2. Write a description of your program in the Information tab. I have made a start on this, but you will need to modify what I wrote and add more material of your own.

Experiment with it

Once your simulation is complete, experiment with different numbers of agents and different rock densities, seeing how long it takes to collect all the rocks. (You can use the tick counter to time how long it takes.) Since there is randomness in the simulation, you'll need to do several runs (say 10) of each combination in order to get a reliable idea of how they perform.

Describe the results of your experiments, including the statistics you collect, in the Information pages of your project.

Hand it in

Save your model as `<my-name>-rover.nlogo`, where you replace `<my-name>` with your own name (so my program would be called `parsons-rover.nlogo`) and email it to me at `parsons@sci.brooklyn.cuny.edu`.

The subject line of your email should say: 7412, Project 1.

If you don't get an acknowledgement within 24 hours, send me a follow-up email.

The due date for the project is November 3rd.