

CS 1410

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Final Project Idea

My idea for my final project is an evolution simulator. I'm a Bioinformatics major and my areas of interest tend to be in plant and fungal ecology. I had the thought to create a simulation focused on those kinds of ecological interactions. I think this would work well with OO. It would be text-based to keep it simple. I'm thinking along the lines of a user inputting whatever number of generations to have the program run, and each generation that passes outputs something like "X species population is now y. A species population is now B. C species has gone extinct." The simulation could have up to say 5 species with some attributes defined by the user. Ex. "Evergreen? y/n:, Woody? y/n, etc." I think this is interesting because things when I've seen like this they're usually focused on vertebrates. I'd also like to have at least one environmental variable like temperature or humidity that affects the species.

I'm not sure exactly how difficult this will be. To start, I'll try creating something like the classic Daisyworld experiment. Just two predefined species with one attribute and one environmental variable that makes one or the other dominant every few generations. Then adding more complexity later (more attributes, environmental stuff, user input, etc.) Making a true evolution simulator with new traits that could appear is probably too complicated, but I think something like a complex version of Daisyworld, which is more of an evolutionary strategy simulator, is doable. I'm sure it would be quite complicated, but I would love to be able to do incorporate things like herbivory, parasitism, or some kind of spacing element that things fight over.