# NetLogo Sims

General Idea: a life simulator loosely based on the game The Sims. Turtles are governed by activities (playing a game, reading a book, talking on the phone) and needs (hunger, sleep, bathroom). The observer views the floorplan of a house containing all the rooms and facilities needed by the person or people. Each turtle leaves a path behind them that, over time, will show how patterns (daily routines) form, and what might cause them to change.

Learning Potential: I believe this project has the potential to illustrate how we can change our daily routines, if those changes are necessarily conscious, and how quickly a routine can change when affected. For instance, if our person suddenly starts a new relationship, then aspects of their routine may change. A married individual has a different routine than a single individual, as well as an individual who has kids. Depending on the severity of the change, it could take a short time or a long time to make the transition, and cause more or less satisfaction on the part of the

person. If a person has more time to do activities that give them happiness, they will become more efficient at those activities and their speed or efficiency on less desirable activities may be affected. However, if they don't have time to do things that make them happy, or some of their basic needs aren't being met, this could lead to low performance, negative emotions, and other bad things.
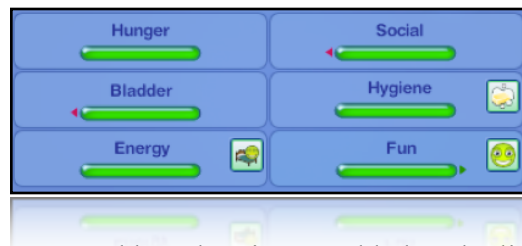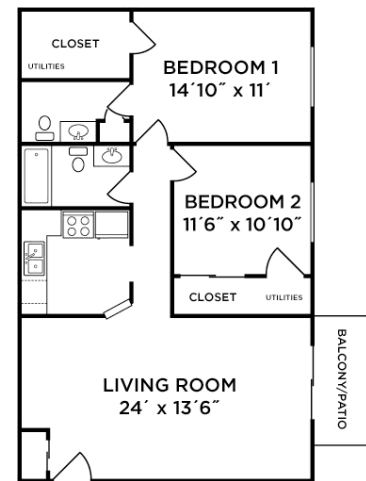
Implementation: Before setup, the observer chooses how many people to have living together

(1-4), and the type of person each sim is (preset or custom). When the program starts, each sim starts creating a list of activities which contains things it needs to do and things it wants to do. The order is governed by when it was added to the list and the urgency with which it needs to be completed. For instance, going to the bathroom may be fourth on the list, but as it becomes more urgent, it will move up until it's the first thing. If it's still not completed, the sim will become increasingly

dissatisfied, and performance on the current task will go down. If the sim is able to stop what they're doing and come back, or cancel the current task, they will move on the urgent task, and when it's completed, their satisfaction will go up relative to how urgent the task was. Throughout the process, the turtle will have their pen down, so they trace their path around the house as it moves around their life. If a pattern begins to emerge, that is the routine. If a life event occurs (not yet decided on how this will work) the activities in their list will start to be different. Possibly life progression will become a factor. Age will make certain tasks more difficult, or impossible. Very young sims will have simple tasks, most of which involve having fun, older sims have work tasks and other responsibilities that have the potential to provide satisfaction or dissatisfaction.

The house floorplan will be set up during the setup method, with different colored patches acting as different rooms or furniture. Walls may be implemented also, but only for realism; if something is further away, it may be less desirable to go to. Sims move towards target patch when it becomes the next task, and the task starts when they're on the patch. Other rules will apply when multiple sims are present, such as if one sim is using the bathroom, other sims won't be allowed to enter, but if they're in there for a different reason, other sims can come in. Also, sims won't be able to start going to the bathroom if another sim is present in the bathroom. If a sim is working in the bedroom while another sim is trying to sleep, their sleep will be less efficient, and their satisfaction will go down. If age is a factor, program ends when all sims die, but is potentially endless if sims have children and bringing in new sims as spouses is possible (no yucky incest).

Rationale: I'm choosing this idea because I'm fascinated by how patterns in our lives develop and change. Sometimes, I have the same routine every day or week for months, and sometimes I go through periods where every day feels completely different. I've never taken the time, nor do I think it would be possible, to analyze every day of my life and compile it into a spreadsheet or graph, to see if my daily life contains patterns beyond the obvious (going to class, eating meals, etc.)