Using a List

9/24/2009

Opening Discussion

- What did we talk about last class?
- Consider just listening during class if you find it is hard to keep up with the typing.
- Code has simple rules that are always followed. It is much simpler than natural language, but less forgiving.
- Minute Essay comments
  - Usefulness of different programming languages for different tasks.

More Minute Essays

- I don't give trick questions on quizzes or tests. (At least I try not to.)
- Adding sound.
  - Matching parentheses and curly braces.
  - Creating code on your own without resources.
  - Does this quiz reflect difficulty of other quizzes and tests?

Lists

- Right now one variable refers to one object. We want to be able to deal with collections of objects.
- The Greenfoot API has methods in World that tell us about Actors. These all return lists. Let's look at them.
- We can also look at List in the full API. The main methods we need now are get(int index) and size().
- List indexes start at zero.

Generics and the Class class

- When we declare a list, we tell Java what type the list holds with a generic type.
- The syntax is a class name inside of angle braces (less than and greater than).
- Methods like getObjects in Greenfoot must be passed an argument of type Class. One of these is a static member of every class.
  - List<Building> list=getWorld().getObjects(Building.class);

Import Statements

- Sometimes Java needs help figuring out where to find some classes. The import statement does this.
- All your Greenfoot files have started with one of these to bring in the Greenfoot classes.
- To use the List type we want to an an import statement at the top of the file.
  - import java.util.List;

House Hunting

- Let's work on a method in our person called findNearestHouse().
- First, we should see if we can figure out how to run through all the buildings.
- Once we can do that we need to figure out how to determine which one is closest.

One Person Per House

- The last step is to only allow one person in each house.
- This requires giving each house the ability to remember if it has a person there already and allowing people to ask if a house is occupied.
- Once we have that we just add a little logic into our existing code.

Minute Essay

- Is the purpose of a List clear to you?