

# Using a List

2/11/2009

# Opening Discussion

- Minute Essay comments
  - Consider just listening during class.
  - Converting English to Java.
  - Trial and error coding. Code has simple rules that are always followed. It is much simpler than natural language, but less forgiving.
  - Reading the API.
  - Preventing buildings from overlapping.
  - Usefulness of lists. We didn't get far enough to see it last class.

# 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 add 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 `moveToNearestHouse()`.
- 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?
- Remember that you are supposed to bring in code on Friday.