Arrays and New Scenarios

2/23/2009
Opening Discussion

- Minute Essay comments
  - When are the extra credit problems going to be due?
  - Order of things inside of classes doesn't matter to Java. Order inside of methods DOES.
  - Illegal start of expression error – this probably means missing ;, ), }, or something similar.
  - How do you know what to pass into methods? API
  - Array syntax simpler than lists.
More Comments

- Right click on classes to change images and other functionality.
- Why do we make all methods public?
Shortening the Snake Code

- Last class we added a snake to our maze that is supposed to move around randomly, but in a way that has it mostly move on straight lines.
- This code stores a direction as a number from 0-3 and uses if statements to pick how to move.
- I want to shorten this code and get rid of the if statements using arrays.
Arrays

- Lists are not the only way of storing multiple values. Arrays are often simpler.
- Arrays have a different syntax and can't change size.
- Square brackets indicate an array type.
  - `int[]` numbers;
  - `String[]` words;
Making Arrays

• Use new to make an array or “shortcut” syntax.
  – `int[] numbers=new int[50];`
  – `int[] fewNumbers={34,19,22,21,20,18};`

• If the array hold primitives the values are 0 or false to start with.

• If the array holds objects the values are null to start with.
Using Arrays

• Instead of calling get, use square brackets.
• The following prints the values in an array.
  – for(int i=0; i<numbers.length; i++) {
    • System.out.println(numbers[i]);
  – }
Direction Moves as Arrays

• Instead of a bunch of if statements, we can use arrays to keep the move information in two arrays.
  - int[] xoff={0,1,0,-1};
  - int[] yoff={-1,0,1,0};
Finishing Touches

- To finish things off we would want to have the user control the mouse and make it so the snake can “catch” the mouse.
Making New Scenarios

- Greenfoot makes it fairly easy to create new scenarios.
  - Select Scenario > New.
  - Give the Scenario a name.
  - Right click on World to make the world type for this scenario.
  - Right click on Actor to make actors for this scenario.
Minute Essay

- Wednesday is a “show your code” and can include some review. What would you like to see us talk about/do?

- Review sessions will be held at the following times. You come with questions, we just answer them.
  - 5pm Wednesday
  - 5pm Thursday