

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