

Arrays

10-4-2010

Opening Discussion

- Do you have any questions about the quiz?
- Minute Essay comments
 - Pretty pictures/games – 10
 - HTML– 5
 - Spreadsheet – 9
 - Easiest – 2
 - Making something you do regularly automated.
 - Animation as a possibility.

Midterm

- The midterm is on Friday. We are going to have some review sessions. The extra credit is going to be a set of problems.

One Person Per House

- Our goal for today is to make it so that only one person can go into a house at a time.
- We are going to do this in a number of different steps.
- First we should go add code to the person that checks if the person has reached a house yet.

Giving House a Memory

- Now we need each building to remember if a person is in it.
- We will actually give the house a reference to a person that is null if no one is there and set to the person if one has gone in.
 - private Person occupant;
- Then we can add public methods to interact with it.
- Once we have that, we can try to make the people avoid houses that have already been taken.

Objectives

- We have some new objectives for this week. The main objective is to get our city scenario working as a valid game.
 - Have the rocket/car move on straight lines all the time. Turn when key is hit.
 - Have people not return to the same house and do random walks without diagonals when there isn't a house to go to.
 - Scoring is how many people the rocket can pick up in certain number of calls to update.

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]);`
 - `}`
- Let's write functions that add up the elements in an array or find the smallest or largest.
- Make an array to hold all the houses in the City and copy stuff over from the list.

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};`

Code

- We want to use this technique for movement in both the Person.
- Once we have that we can put in the code so people don't return to the same house.

Minute Essay

- What questions do you have about our topics today?