CompSci 94
Properties, Variables
February 15, 2018

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Class Today

• Continue practice writing procedures and functions
• Properties and variables, object markers, logic operators
• Exam 1 next Thursday
  – Old tests are on Resources tab
  – Old tests are in Alice 2, but many questions relevant – Think about how you would do the same question in Alice 3

Setup for Lecture today

• Put in four objects:
  – Biped: Panda, SnowWoman, SnowWoman2, MarchHare

Properties

• A 3D object has its own:
  – Procedures – things it can do, like move, turn
  – Functions – values it can calculate like distance to, getHeight
  – Properties – data on its current state
    • Paint – what color it is
    • Opacity – all on are faded?
    • Width, height and depth
    • Vehicle
Change Properties

• What happens when this code executes?

<table>
<thead>
<tr>
<th>this snowWoman</th>
<th>setPaint</th>
<th>RED</th>
<th>add detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>this snowMan</td>
<td>setPaint</td>
<td>GREEN</td>
<td>add detail</td>
</tr>
<tr>
<td>this marchHare</td>
<td>setOpacity</td>
<td>0.8</td>
<td>add detail</td>
</tr>
<tr>
<td>this marchHare</td>
<td>setOpacity</td>
<td>0.4</td>
<td>add detail</td>
</tr>
</tbody>
</table>

Variable – store a value

• Variables can be used in your code when you need to store a value and then use it later.
• You must specify the type of the variable
• The variable tile is at the bottom of the editor pane

Using a variable

• Suppose we want the Panda to jump up 1 in height, then 2, then 3, then 4.
• We create a variable of type number that we can add to so it can change from 1 to 2 to 3 to 4.

Create variable and initialize

Update it

Logic Operators

• A and B – true if both are true
• A or B – true if one or both are true
• Not A – True if A was false
Example
- Uses **And** – both conditions must be true for the whole thing to be true

Add in object markers
- An object marker is a placeholder for where you want an object to move to.
- To create them, in Setup Scene, must select object first.
- Then add two objectMarkers

Example Code to use object markers
- What happens?

This lecture covered
- Properties of an object and how to change them
- A number variable
- Logic – and, or, not
- Object markers