CompSci 94
Properties, Variables
April 3, 2018

Prof. Susan Rodger
Class Today

• KeyPress Event
  – Faster way to move a character around

• Collision Detection

• Changing Scenes
  – Darken the world and switch to another scene

• Exam 2 next Tuesday
  – 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
  – Will review on Thursday
Calculating your Final Grade

• This is on the web site

<table>
<thead>
<tr>
<th>Classwork/Participation</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Two Exams</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>
Final Exam will now be optional

• A second way to compute your grade with no final exam:
  – Classwork/Participation: 20%
  – Assignments (1-6): 20%
  – Assignment 7 (final project): 20%
  – Test 1: 20%
  – Test 2: 20%
1) Key Press Event

- Used key press before – Press the letter S
- Here we want to move the ghost with the arrow keys, but we want to setup each key so we have more control
  - Remember arrow keys slow if you use `addObjectMoverFor` some object
addKeyPressListener

heldKeyPolicy

- Fire _Once_on_Press - means you have to press the key for each move - SLOW
addKeyPressListener
heldKeyPolicy

- Fire_Multiple - means item keeps moving if you hold down the key – Much Faster!
Move the ghost with four arrow keys in directions:

- Left, right, forward and backward (staying on the ground)
- Need four if statements in the event, one for each arrow key (just showed one if for one of the arrow keys)
addKeyPressListener multipleEventPolicy

• **Combine** – means you can have several keypress events in the one event, for different keys so they can all work

• Without it, you press the second key and it doesn’t do anything
2) How do you detect a collision?

• Use `addCollisionStartListener`
• You list two groups of items and the event kicks in if any item from the first group collides with any item from the second group
• My first group is an array of lots of bunnies
• My second group is the ghost
Suppose a bunny collides with the ghost

• You have two variables to refer to the two items that collided

• `getSthngFromSetA` refers to the item that collided from the first group – in this case a bunny

• `getSthngFromSetB` refers to the ghost
So you could ask questions like

• If a bunny and the ghost collide, then make *that* bunny disappear – that is,
  – *getSthingFromSetA*
3) Scene Change - one way

• To change scenes, we would like to drop a black curtain over the scene, then raise it and we are in a completely different scene

• We can use a billboard painted black as our curtain. We resize it and make it large to cover the screen.

• Then use a one shot to raise it up 10
Scene Change (cont)

• Now set up two different scenes in the Alice world.
• Set up one scene and drop a camera marker
• Then click on the center right arrow and turn the camera until you can’t see anything from the previous scene. Then build scene 2 there. Drop a second camera marker
To switch scenes

• Start in scene 1.
• When scene 1 is over, drop the curtain down. It’s dark!
• Move the camera to the second scene. Possibly change the ground to a different ground
• Then raise the curtain and it is now scene 2
• You could have about 8 different scenes that don’t interfere with each other.
This lecture covered

• Events to make objects move faster such as with arrow keys
  – heldKeyPolicy
  – multipleEventPolicy
• Collision of two objects and how to handle the objects after they have collided
• Scene change – drop a curtain, raise it and in a different scene