CompSci 94 Spring 2018

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

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<td>Classwork/Participation</td>
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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

```
declare procedure keyPressed
  event isLetter, isDigit, getKey, isKey
do in order
  if event isKey LEFT is true then
    this ghost move LEFT, duration 0.1, add detail
  else
    drop statement here
```

```
addKeyPressListener, heldKeyPolicy
```

• Fire _Multiple_ - means item keeps moving if you hold down the key – Much Faster!

```
declare procedure keyPressed
  event isLetter, isDigit, getKey, isKey
do in order
  if event isKey LEFT is true then
    this ghost move LEFT, duration 0.1, add detail
  else
    drop statement here
```

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

So you could ask questions like

• If a bunny and the ghost collide, then make *that* bunny disappear – that is,
  – `getSthFromSetA`

• `getSthFromSetA` refers to the item that collided from the first group – in this case a bunny
• `getSthFromSetB` refers to the ghost
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.