Scene Changes

This is an modification of the June 2009/July 2012 scene change tutorial by Deborah Nelson and Chris Brown
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Overview

• This tutorial is centered around the use of the full range of the camera to construct different scenes in the same world
• The camera can then shift between scenes, giving the coder the ability to make a more complicated world
• You will learn how to control the light levels in Alice, and how to move a character between scenes
Open a new Alice world

- Choose “Grass”
- Go to setup scene
- Add a camera marker
- Name it scene1

Camera Markers in Alice 3

- Camera markers let you save a viewpoint
- Above the scene buttons are two positioning buttons
- The black camera represents your current point of view
- The first button moves your point of view to the red camera (scene1)
- In order to move to scene2, you would click on the scene2 button and then on the left top button
- Note: this picture is from later in the tutorial
Camera markers, cont.

• The second button, if clicked, would reset the scene1 view to the current view
• Do not click this button!
• Once we set a camera view, we will likely not want to change it

Add to our scene!

• First, we want to add an oasis
• Go to the “Browse Gallery By Theme” tab
• Click on southwest ➔ new Pond
• Drag the Pond(DESERT_OASIS) into the scene and position it so it is near the bottom middle of the screen
Now to add a character

- Get back to the main theme page by clicking on the “all themes” button
- Click on wonderland → new Alice
- Drag Alice (WONDERLAND) into the scene and position her by the oasis
Finished scene 1

The first scene is complete

- Use the circled arrow to turn the scene to the right
- Keep turning until the oasis is no longer visible
- Now we can begin our second scene
- Before you do anything else, add another camera
- Name it scene 2
Cameras in Alice 3

- Cameras in Alice 3 are physical elements that show up on your screen
- So as you turn, the side of the scene1 camera will come into view
- It should be the same color in the scene as it is under the camera marker tab (red by default)
- When you actually run the scene, these will not be visible!
- However, you will have to be careful to avoid them while doing positioning, as they can be clicked and dragged

Adding elements

- Go back to the main theme page
- Click on amazon→new RiverPiece
- Drag the new RiverPiece (CURVE1_BLUE) into the scene
- Add another Alice to the scene (wonderland→Alice→Alice(WONDERLAND))
• In order to position these elements, you may have to use the arrows to reposition, so that you do not accidentally click on the scene1 camera
• Try zooming backwards or up to get a better angle

Finished scene2
Double check!

• Once you are satisfied with your positioning, make sure you go back to scene1 to double check that the river is not visible!
• Because the river turns, it may intrude on the first scene. If this is the case, simply move it slightly further to the right.

Scene3

• From scene2, continue to turn right until the river is no longer visible
• Go back to the main theme page
• Click on snow ➔ new IceMountain
• Drag the IceMountain (DEFAULT) into the scene
• Add and position a third Alice
Finished scene3

Final touches

• The three Alices we have added will act as placeholders for position
• We then want a fourth Alice, who will move continually through all the scenes
• Go to scene1 and add a fourth Alice
• We want Alice4 to be the only visible one
• Use the list of scene elements on the far left to change Alice, Alice2, and Alice3 to invisible
• This is done by changing the Opacity to 0

Time to code!

• Click the “edit code” button to go back to the code screen
• First, we will create a scene variable
• Go to the dropdown menu ➔ Scene ➔ Add Scene Property
• Value type: Other types → Color
• Name: storeAtmosphereColor
• Initializer: WHITE

Now add a scene procedure
Name it “fadeOut”
Fadeout

• This procedure will darken the screen so we can change the scene without the viewer seeing

• Drag in a do together block

• Drag in setAtmosphereColor and set to BLACK
  – NOTE: This is NOT the variable we created, which can be changed with setStoreAtmosphereColor

• Drag in setFromAboveLightColor and setFromBelowLightColor and set both to BLACK
Testing!

- Go back to myFirstMethod
- Drag in fadeOut and play!
- You should see the screen darken until you can no longer see the scene

**fadeIn**

- Create another scene procedure and name it “fadeIn”
- Click on the add parameter button
- Set the value type to Color and the name to “atmosphere”
• Drag in a do together block
• Like before, drag in setAtmosphereColor, but this time select "atmosphere", the variable we just created
• Drag in setFromAboveLightColor and setFromBelowLightColor and set both to WHITE
• Now to create the scenes!
• Make a new Scene procedure and name it scene1
• Drag in a do together block
• Select Alice4– this should be the only visible Alice
• Drag in a moveTo and select Alice (this should be the Alice in scene 1)
• Then drag in an orientTo and select Alice again

• Drag in a say block and type “Put everything you want to happen in scene1 in this method.”
• We want to repeat this code for scene 2 and scene 3
• Right click on the do together block and select copy to clipboard
• Create another Scene procedure, and call it scene2
• Click and drag from the keyboard to the procedure

• Change the mentions of Alice to Alice2
• Drag in or copy over the say block, and say “Put everything you want to happen in scene 2 in this method”
Scene 3

- Create a final Scene procedure and call it scene3
- Repeat the process
- Make sure to swap out the 2s for 3s!

Use your procedures

- Go back to myFirstMethod
- Drag in a do together
- Select this.camera and drag in moveAndOrientTo, and select scene1
- Then select this.ground and drag in setPaint
- You will be given a list of setting options
- Since our first scene is an oasis, we want the ground to be sand
• Finally, select this and drag in `setStoreAtmosphereColor`
• Note that this is not `setAtmosphereColor`, this is the variable we created
• Select BLACK, then go to the functions tab and drag in `getAtmosphereColor` in place of BLACK
• Note that `getAtmosphereColor` is not the variable we created

• Drag in `scene1`
• Drag in `fadeOut`
• Test your code! Scene 1 should play, then the screen should fade to black
Repeat for scene2

• In a do together
  – Have this.camera moveAndOrientTo scene2
  – Have this.ground setPaint to Jungle

• Drag in fadeIn, and select storeAtmosphereColor as the parameter

• Drag in scene2

• And then fadeOut

• Try to write this code for yourself before you look at the picture on the next slide
storeAtmosphereColor

• Why are we bothering with this variable?
• All storeAtmosphereColor holds is the original color of the atmosphere
• In the fadeOut procedure we turn the atmosphere black
• In fadeIn we turn it back to the original color
• The reason we need storeAtmosphereColor is that the original color of the sky is not one of the color options Alice provides

Give it a try

• Set the fadeIn parameter to one of the other colors
• You can see how it changes the sky color
• None of them are quite the same shade of blue
• storeAtmosphereColor keeps us from losing that sky color!
Last scene

- We will repeat the code for scene 2, except for scene 3
- In a do together
  - Have this.camera moveAndOrientTo scene3
  - Have this.ground setPaint to Snow
- Drag in fadeIn, and select storeAtmosphereColor as the parameter
- Drag in scene3
- And then fadeOut
Final code

If you want to change one of the sky colors, just change the fadeIn parameter!

• For example, we might decide that mountain sky looks sort of grey and cloudy
• If we chose a moon scene, we might want to set the fadeIn color to black
Extra Things

• Try making more than three scenes! You can just keep turning the camera

• Add more to the individual scene procedures. Make a story!

• The current code fades in before Alice gets positioned, so we see her move. How would you change the code so that Alice is already in position when the lights go on?