Class Today

- Review for Exam 2 – on April 10
- Questions on Assignment 6
- Classworks 1-18 must be checked off by April 12

Events 1

Events 2
Events – when does it start, how does it work?

• sceneActivated

• addTimeListener

• keyPressed

Events – when does it start, how does it work? (part 2)

• addObjectMoverFor

• addMouseClickOnObjectListener

• addDefaultModelManipulation

Events – when does it start, how does it work?

• sceneActivated
  – Starts when the world starts and executes all the code in it and then stops

• addTimeListener
  – Specify a time, such as 1.0 and then the event executes over and over, every 1.0 secs

• keyPressed
  – Every time you press the particular key, the event starts executing
Events – when does it start, how does it work? (part 3)

- addPointOfViewChangeListener
- addCollisionStartListener

Billboard and counter

- Add a billboard of instructions
- A counter

Events – when does it start, how does it work? (part 3)

- addPointOfViewChangeListener
  – Must specify one item. Whenever that item moves, the event starts.
- addCollisionStartListener
  – Specify two arrays, then whenever one item from one array collides with one item from the other array, then the event starts
  – Uses the variables: $getSthingFromSetA$, an object from the first array, and $getSthingFromSetB$, an object from the second array, such that these are the two objects that collided.

Billboard and counter

- Add a billboard of instructions
- A counter
  – Need a number variable and a 3D text object
  – Update the number, then display it in the 3D text
  – Write procedures
    • initializeCounter, updateCounter
A Countdown Timer

• Need a number and 3D text object
• Update the number by subtracting and then update the 3D text to display it
• Write Procedures:
  – InitializeTimer, UpdateTimer
• Need an addTimeListener Event
  – Will update every specified time unit

If statements

• When do you guard an if statement?
  – In an event that starts a lot, so it will only be true at certain times
• How do you guard an if statement?
Looping structures - when and how to use each one

• Count loop
  – When you know exactly how many times the loop will execute, like 4 times

• While loop
  – When the loop stops based on a condition

• For each in
  – Use with an array, to get each item in the array to do something one at a time

• Each in together
  – Use with an array, for each item at the same time to do something

Randomness

• How do you generate a random number?

• How do you store a random number?

• How do you use a random number?

• How do you generate a random number?
  – When you use numbers there is an option for random to choose a “random” number from a specified range

• How do you store a random number?
  – Store it in a variable

• How do you use a random number?
  – Access the stored value in the variable
Arrays

• How do you create an array?

• Where should you create an array?

• How do you change a value in an array?

• What is the advantage of using an array?

• How do you find the tallest element in an array?

Changing Scenes with a Curtain

• Setup two or more scenes

• Camera

• How to change scenes

Arrays

• How do you create an array?
  – Create a variable and check the box for array

• Where should you create an array?
  – In Scene Properties

• How do you change a value in an array?
  – You change the value at a particular index in the array to a new value.

• What is the advantage of using an array?
  – You can add more items to it, and the program should just work.

• How do you find the tallest element in an array?
  See lecture March 20

Changing Scenes with a Curtain

• Setup two or more scenes

• Camera
  – Turn it to the right until can’t see scene 1
  – Drop camera markers for each scene

• How to change scenes
  – Drop Curtain down
  – Glue curtain to camera
  – Have camera turn and orientTo second camera marker
  – Change ground color/texture
  – Raise curtain
How to study for the exam

• Practice problem solving
• Redo a classwork, or a procedure or function for a classwork
• Try redoing something from a lecture
• Reading in book
• Understand topics – reread over lecture notes
• Look at old tests but think – how would I do this in Alice 3