CompSci 94
Writing Class Procedures
Built-in Functions, Math, Properties
September 19, 2019

Prof. Susan Rodger
Review: Camera Markers

• When do you set up camera markers?

• I want to create three camera markers: initialView, topView, rightSideOfPigView. Which one do I create first?
Review: Camera Markers

• When do you set up camera markers?
  – LAST, after everything else in your scene is setup
  – Camera markers can freeze your scene!

• I want to create three camera markers: initialView, topView, rightSideOfPigView. Which one do I create first?
  – initialView
  – Setup a camera marker BEFORE moving the camera so you can get back to the initial view.
Classes and Objects

- Which one is the object?

![Image of an object](image.png)
Classes and Objects

• Which one is the object?

• An object is an instance of a class
• The class defines the object
• Then you can make lots of objects with the class
Inheritance

• Which is a superclass of the other?
  – Quadruped or Bear?

• If you write a quadruped procedure, who can use it?

• If you write a Bear procedure, who can use it?
Inheritance

• Which is a superclass of the other?
  – Quadruped or Bear?
  – Quadruped is a superclass
  – Bear, cow, etc are subclass of quadruped

• If you write a quadruped procedure, who can use it?
  – Any quadruped

• If you write a Bear procedure, who can use it?
  – Only bears
Built-in Functions

• Where can you use the cow getHeight function in this instruction?
Built-in Functions

• Where can you use the cow getHeight function in this instruction?
  – Over the 1.0 or the 2.0
  – getHeight’s value is of type decimal, so you can use it anywhere there is a decimal number

• Functions calculate a value of a certain type
  – Use the value wherever that type is in an instruction
getDistanceTo

• What happens when this executes?
getDistanceTo

• What happens when this executes?

• Moves to center of cow
Lots of built-in functions to use
Use math to adjust

• How do we stop poodle before the cow?
Use math to adjust

- How do we stop poodle before the cow?
  - Use math
  - How does one add the math?
    - On down arrow beside number
How do I get the flamingo to circle around the ostrich?

- Use turn with as seen by.

  - Which direction do you pick to go forward?
    - The ostrich is to the flamingo's left, so turn left.
How do I get the flamingo to circle around the ostrich?

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- Which direction do you pick to go forward?
  - The ostrich is to the flamingo’s left, so turn left
Properties

• What can you do with the paint property?

• What does painting an object with white paint do?

• What can you do with opacity property?

• What can you do with the vehicle property?
Properties

• What can you do with the paint property?
  – Paint an object that color

• What does painting an object with white paint do?
  – Means no color, the original colors show through

• What can you do with opacity property?
  – Make something see through or invisible

• What can you do with the vehicle property?
  – Make an object move when another object moves
More on properties

• Where does one make a property permanently changed?

• What instructions do you get to use with properties?
More on properties

• Where does one make a property permanently changed?
  – In setup scene

• What instructions do you get to use with properties?
  – A set procedure
  – A get built-in function
Vehicle Property

- Consider

- What happens if the bluebird moves forward?

- What happens if the flamingo moves forward?
Vehicle Property

• Consider

• What happens if the bluebird moves forward?
  – Only the bluebird moves.

• What happens if the flamingo moves forward?
  – The bluebird moves forward with it
How does one create their own camera marker (not use the ones provided in Alice)?
How does one create their own camera marker (not use the ones provided in Alice)?

- Use any object.
- Change its name to `cameraViewSOMETHING`
- Have it moveAndOrientTo camera
- Make it invisible
What is the best object to use to make your own Camera marker

• Use a small quadruped
• It’s small and you will see its legs so you know it is on the camera.
What is the best object to use to make your own Camera marker

• Use a small quadruped
• It’s small and you will see its legs so you know it is on the camera.
Create Poodle as Camera Marker

- Rename the object to the camera view it will be
Poodle moveAndOrientTo camera

Then make the poodle invisible
Announcements

• Assignment 3 out today. Due Oct. 1.

• Note: Exam 1 is Thursday, Oct. 10.
  – Old exams are on the course website under resources tab
Class Today

- Using properties, built-in functions and math
- Creating class procedures