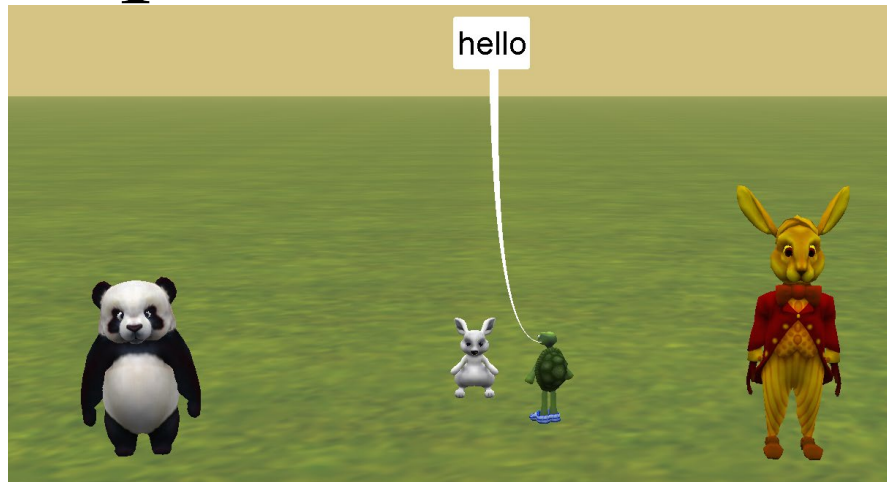


CompSci 94

Writing Class Procedures

Built-in Functions, Math, Properties

September 19, 2024



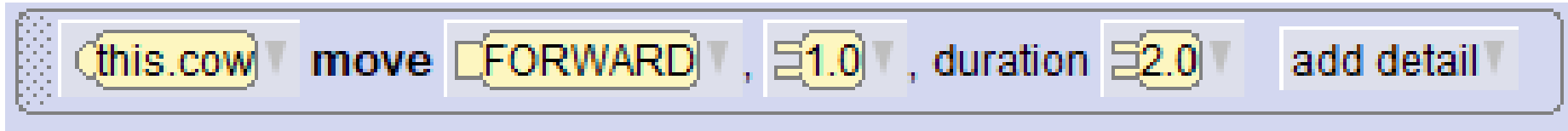
Prof. Susan Rodger

Announcements

- Note: Exam 1 is Thursday, Sept 26
 - Old exams are on the course website under resources tab
 - Review materials for you are on the course web site under 9/26 date
 - Note the Exam 1 reference sheet! It will be with the exam
 - If you get accommodations for exams, you should have had your letter sent to Prof. Rodger, and she would have contacted you.

Q1. Built-in Functions

- Where can you use the `cow getHeight` function in this instruction?



Q1. 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

Q2. getDistanceTo

- What happens when this executes?

```
this.poodle move FORWARD , = this.poodle getDistanceTo this.cow
```



Q2. getDistanceTo

- What happens when this executes?

```
this.poodle ▾ move FORWARD ▾ , = this.poodle ▾ getDistanceTo this.cow ▾ ▾
```



- Moves to center of cow



Lots of built-in functions to use

The screenshot displays the 'this.cow' function palette in Scratch. The palette is divided into two main sections: 'Procedures' and 'Functions'. The 'Functions' section is currently selected, showing a list of built-in functions for the 'this.cow' object. The functions are organized into categories: 'appearance' and 'size'. The 'appearance' category includes 'getPaint' and 'getOpacity'. The 'size' category includes 'getWidth', 'getHeight', and 'getDepth'. Additionally, there is a 'group by category' dropdown menu. To the right of the palette, a list of functions is shown, including 'getDistanceAbove', 'getDistanceBehind', 'getDistanceBelow', 'getDistanceInFrontOf', 'getDistanceTo', 'getDistanceToTheLeftOf', 'getDistanceToTheRightOf', 'getTailArray', 'getVantagePoint', 'getVehicle', 'isAbove', and 'isBehind'. Each function block has a 'this.cow' object and a parameter input field (e.g., 'other: ???' or 'entity: ???').

Procedures Functions

group by category

Cow's Editable Functions (0)

Quadruped's Editable Functions (0)

appearance

- this.cow getPaint
- this.cow getOpacity

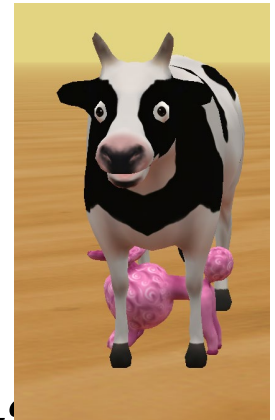
size

- this.cow getWidth
- this.cow getHeight
- this.cow getDepth

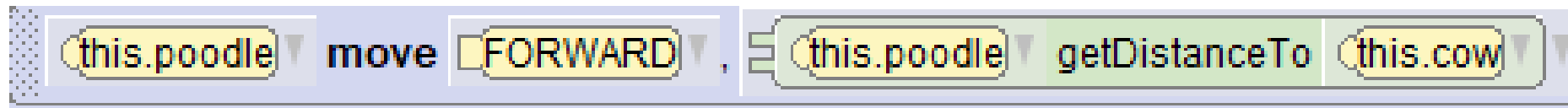
other

- this.cow getDistanceAbove other: ???
- this.cow getDistanceBehind other: ???
- this.cow getDistanceBelow other: ???
- this.cow getDistanceInFrontOf other: ???
- this.cow getDistanceTo other: ???
- this.cow getDistanceToTheLeftOf other: ???
- this.cow getDistanceToTheRightOf other: ???
- this.cow getTailArray
- this.cow getVantagePoint entity: ???
- this.cow getVehicle
- this.cow isAbove other: ???
- this.cow isBehind other: ???

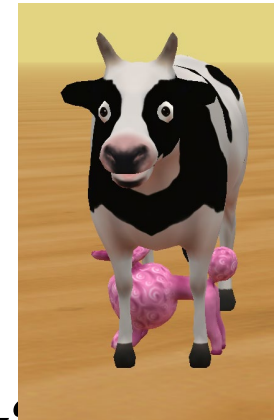
Q3. Use math to adjust



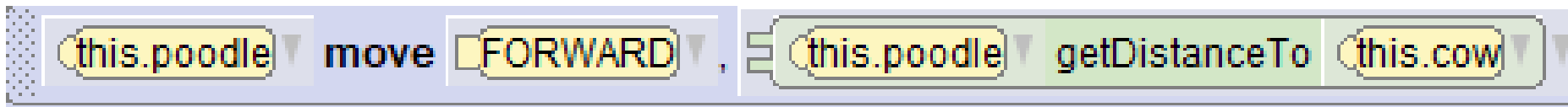
- How do we stop poodle before the cow?



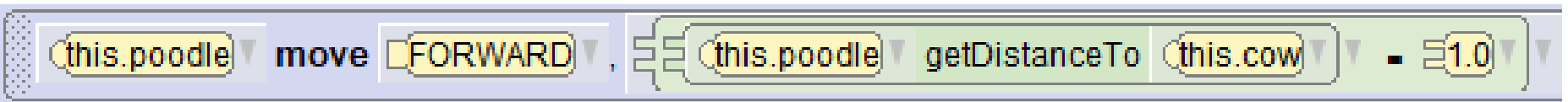
Q3. Use math to adjust



- How do we stop poodle before the cow?



– Use math

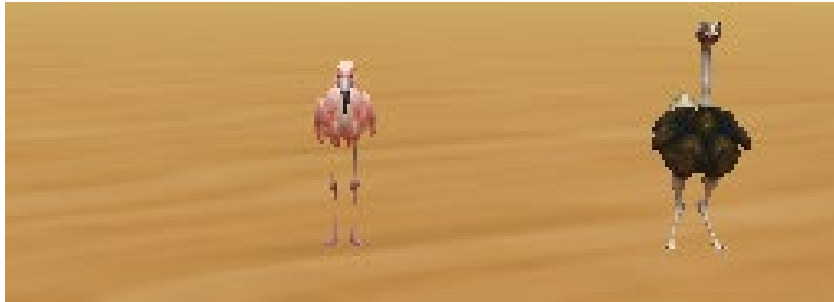


– How does one add the math?

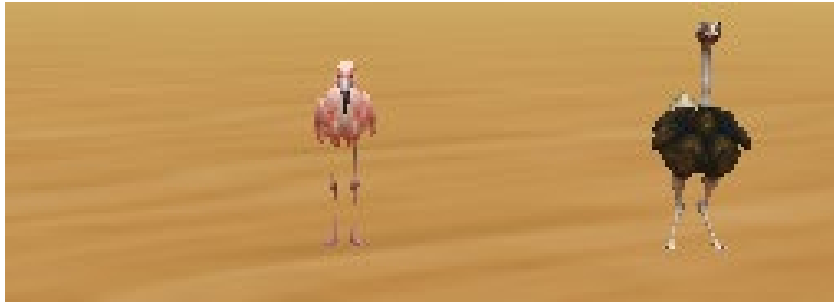
- On down arrow beside number



Q4. How do I get the flamingo to circle around the ostrich?



Q4. 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

Q5. 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?

Q5. Properties

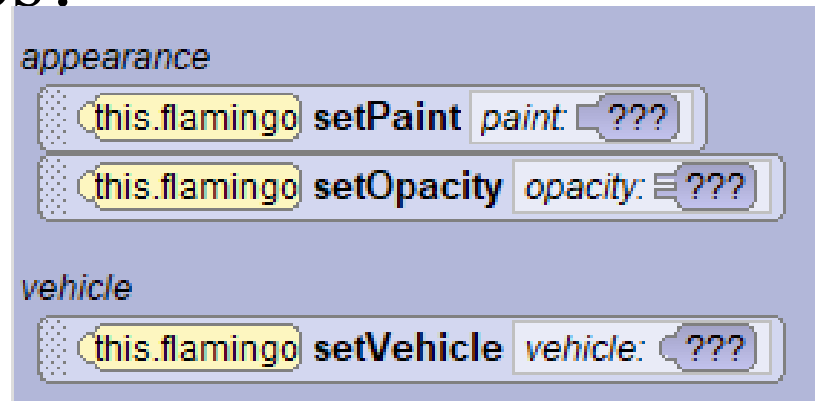
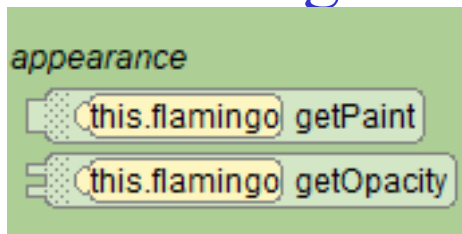
- What can you do with the paint property?
 - Paint an object that color
- What does painting an object with white paint do?
 - Means no color, the original colors show through
- What can you do with opacity property?
 - Make something see through or invisible
- What can you do with the vehicle property?
 - Make an object move when another object moves

Q6. More on properties

- Where does one change a property instantly when not running code?
- What instructions do you get to use with properties?

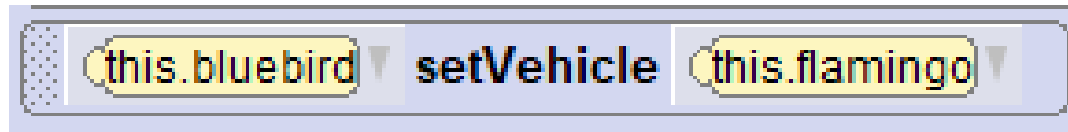
Q6. More on properties

- Where does one change a property instantly when not running code?
- In setup scene under properties
- Which instructions do you get to use with properties?
 - A set procedure
 - A get built-in function



Q7. Vehicle Property

- Consider

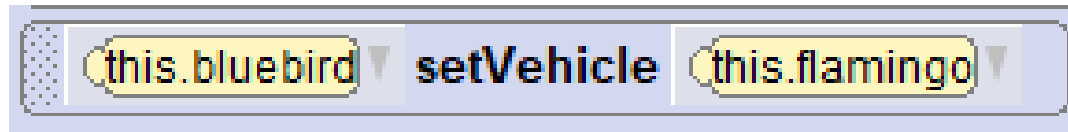


- What happens if the bluebird moves forward?
- What happens if the flamingo moves forward?



Q7. 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



Q8. How does one create their own camera marker (not use the ones provided in Alice) ?

Q8. 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

STOP HERE

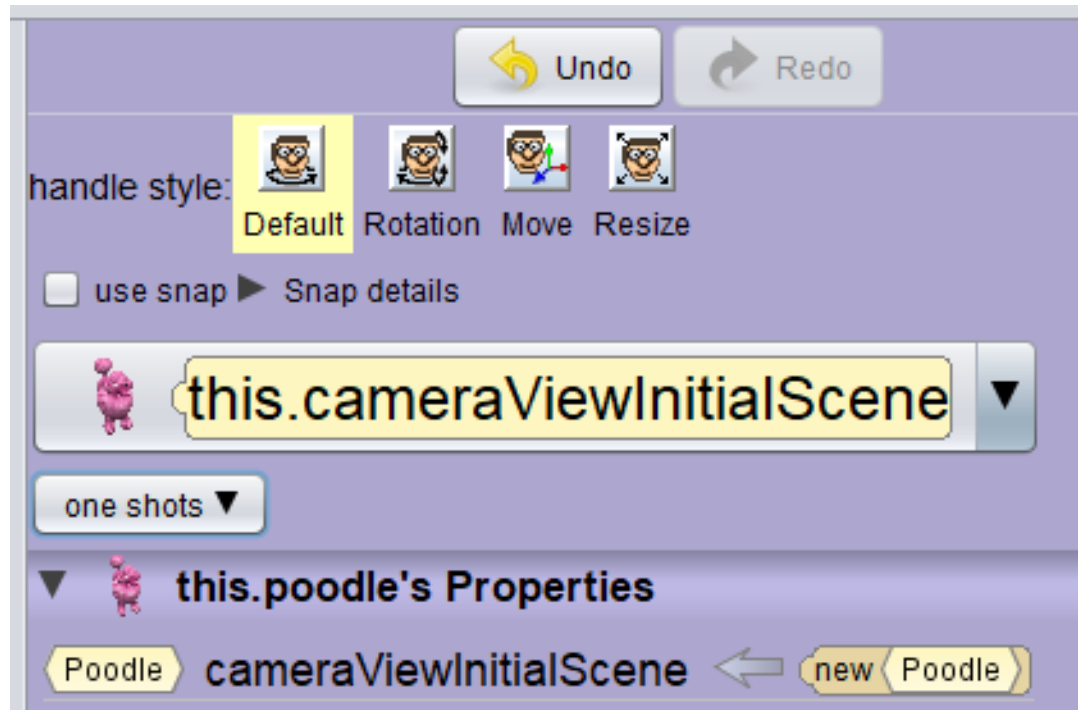
What is the best object to use to make your own Camera marker

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

Class Today

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

