

# CompSci 94

## Introduction to Events

### Mouse Events

October 28, 2021



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# Announcements

- Assignment 4 is due tonight!
- Videos and online quiz for Tuesday

# Q1. How do I setup an object marker for the bunny?



# Q1. How do I setup an object marker for the bunny?

- Go to scene setup
- Select the bunny first!
- Add objectMarker
- Should see it on the bunny



# Q2. How do I use an object marker?



# Q2. How do I use an object marker?

- Use it just like a camera marker.
- Bunny `moveAndOrientTo`  
`objectMarkerBunny`



# Q3. Consider the following

- Have 3 animals in an array named `animals`, and three object markers in an array called `objectMarkers`. They are in the order in the array as shown from left to right.



Q3: Suppose the animals have moved as shown.  
What does the mystery procedure do?

```
declare procedure mystery Add Parameter...  
do in order  
  do in order  
    WholeNumber ← number ← 0  
    for each SBiped oneAnimal in this . animals  
      oneAnimal moveAndOrientTo this . objectMarkers [ number ]  
      number ← number + 1  
    loop
```





Q3: Suppose the animals have moved as shown.  
What does the mystery procedure do?

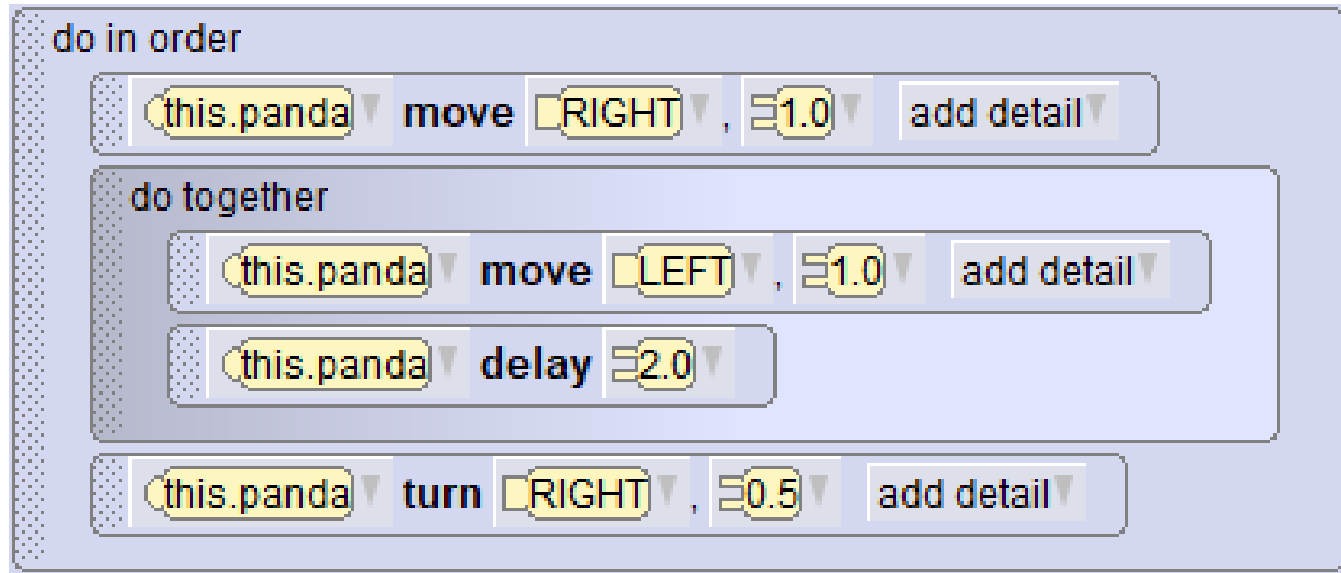
```
declare procedure mystery Add Parameter...  
do in order  
  do in order  
    WholeNumber ← number ← 0  
    for each SBiped oneAnimal in this .animals  
      oneAnimal moveAndOrientTo (this .objectMarkers [ number ] )  
      number ← number + 1  
    loop
```



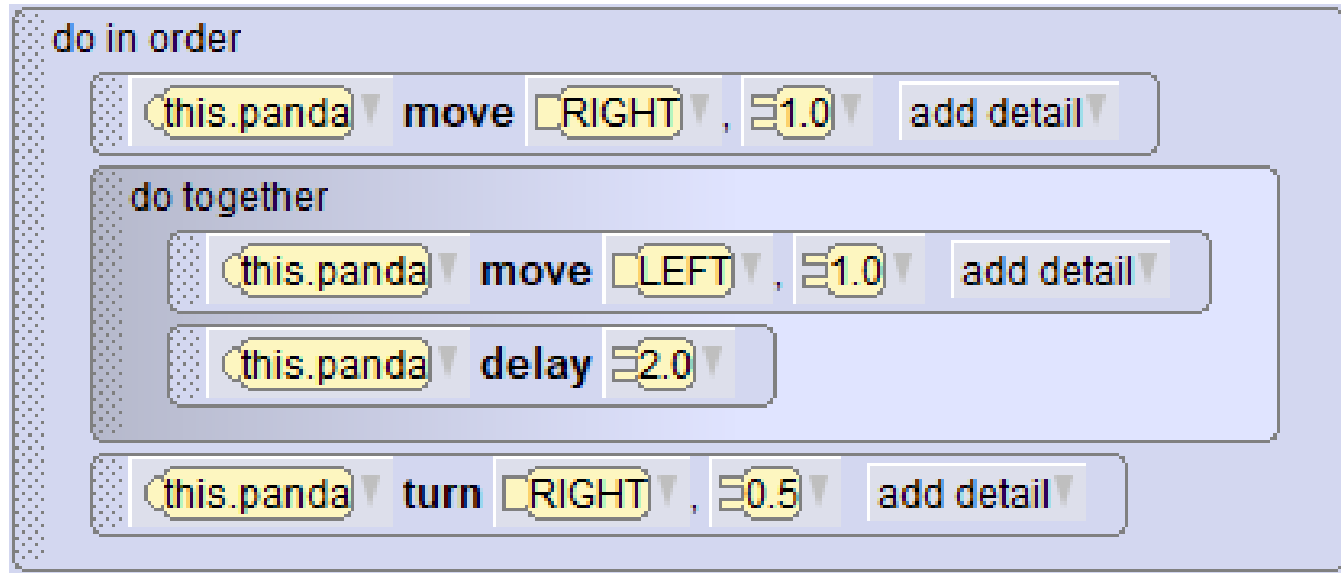
- It moves the animals back to their original position and orientation.



# Q4. What does the following code do?



# Q4. What does the following code do?



- Panda moves right, then panda moves left
- Then there is a delay of 1 sec, the doTogether has to finish.
- Then the panda turns.

Q5 - How do you fix the code below so you only click on cow and moose for them to turn around?

- A scene has bear cub, cow, dalmatian and moose.



```
this addMouseClickedOnObjectListener add detail  
  
declare procedure mouseClicked event getModelAtMouseLocation  
do in order  
  event getModelAtMouseLocation turn RIGHT, 1.0 add de
```

# Q5 - How do you fix the code below so you only click on cow and moose for them to turn around?

- A scene has bear cub, cow, dalmatian and moose.



```
this addMouseClickedOnObjectListener, setOfVisuals new Visual[] { this.cow, this.moose }  
  
declare procedure mouseClicked [event] getModelAtMouseLocation [event] getSc  
do in order  
[event] getModelAtMouseLocation turn RIGHT, 1.0 add detail
```

- Add Detail – Visual array of cow and moose

# Q6 What does this event do?

The image shows a Scratch script for a mouse click event. The script starts with a 'when clicked' block, followed by a 'new Visual' block with 'this.dalmatian' as the argument. Below this is a 'declare procedure mouseClicked' block with two arguments: 'event' and 'getModelAtMouseLocation'. The procedure body is enclosed in a 'do in order' block. Inside, there is an 'if' block with the condition 'this.dalmatian.getOpacity > 0.95'. If true, it performs two actions: 'this.dalmatian.say "hello"' and 'this.dalmatian.setOpacity 0.9'. If false, it performs one action: 'this.dalmatian.setOpacity 1.0'. Each action block includes an 'add detail' button.

```
when clicked  
new Visual { this.dalmatian }  
  
declare procedure mouseClicked event getModelAtMouseLocation event  
do in order  
  if this.dalmatian.getOpacity > 0.95 is true then  
    this.dalmatian.say "hello" add detail  
    this.dalmatian.setOpacity 0.9 add detail  
  else  
    this.dalmatian.setOpacity 1.0 add detail
```

# Q6 What does this event do?

The image shows a Scratch script for a mouse click event. The script starts with a 'this' block containing 'addMouseClickOnObjectListener, setOfVisuals' and a 'new Visual[] { this.dalmatian }' block. Below this is a 'declare procedure mouseClicked' block with two 'event' blocks: 'getModelAtMouseLocation' and 'event'. The main body of the script is a 'do in order' block containing an 'if' block. The 'if' block checks 'this.dalmatian' opacity > 0.95. If true, it performs 'this.dalmatian say "hello" add detail' and 'this.dalmatian setOpacity 0.9 add detail'. If false, it performs 'this.dalmatian setOpacity 1.0 add detail'.

```
this addMouseClickOnObjectListener, setOfVisuals new Visual[] { this.dalmatian }  
  
declare procedure mouseClicked event getModelAtMouseLocation event  
do in order  
  if this.dalmatian getOpacity > 0.95 is true then  
    this.dalmatian say "hello" add detail  
    this.dalmatian setOpacity 0.9 add detail  
  else  
    this.dalmatian setOpacity 1.0 add detail
```

- Every other time you click on the dalmatian, it says hello.

# Class Today

- Make a simple game

