CompSci 94
Making Procedures Flexible,
Camera Controls
September 17, 2019

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Parameters

• What is the difference between a parameter and an argument?

• Can you send different arguments when you use a procedure?

• Does the type of the argument matter?
Parameters

• What is the difference between a parameter and an argument?
  – A parameter is a placeholder for a value
  – An argument is a value that can be used in place of a parameter

• Can you send different arguments when you use a procedure?
  – Yes!

• Does the type of the argument matter?
  – Yes, it must be the same type as the parameter
Parameters/Arguments

• Consider:

• What are the parameters in it?

• What are the arguments in it?
Parameters/Arguments

• Consider:

  ![Diagram with variables](image)

• What are the parameters in it?
  – Direction and amount

• What are the arguments in it?
  – Right, 2.0
Parameters/arguments

- What type of procedure is Mystery?

- What type of parameter is phrase?

- What type of parameter is animal?

- What type of parameter is forward?

- What are the arguments?
Parameters/arguments

- What type of procedure is Mystery?
  - Mystery is a bunny procedure
- What type of parameter is phrase?
  - Phrase is a textString parameter
- What type of parameter is animal?
  - Animal is an object parameter
- What type of parameter is forward?
  - Forward is a direction parameter
- What are the arguments?
  - “Welcome”, hare, and FORWARD
Camera Views

• How do I line up the animals in the front in a line? How do I make sure the animal behind the ogre is directly behind it?
Use 2D sideview for both

• Line up animals
• Move marchHare close to Ogre
Setup Scene

• What other views can you use beside Starting Camera View?
Setup Scene

• What other views can you use beside Starting Camera View?
  – 2D TOP view
  – 2D SIDE view
  – 2D FRONT View
  – Layout Scene View
Camera Markers

• How does one create a camera marker?

• How does one use a Camera Marker during animation?
Camera Markers

• How does one create a camera marker?
  – Move camera to location.
  – Click on **add camera marker** in scene setup
  – Give camera marker a name.

• How does one use a Camera Marker during animation?
  – Use camera with **moveAndOrientTo** instruction to change a scene.
Setting up a CameraMarker

- How does one setup camera for side view?

  - Using one-shots, have camera move to hare.
  - Then upright camera,
  - Move up 1.0
  - Move right 6.0
  - Turn left 0.25
  - Use purple arrows to adjust view.
Setting up a CameraMarker

• How does one setup camera for side view?
  – Using one-shots, have camera **move to** hare.
  – Then camera **orientToUpright**
  – Camera move up 1.0
  – Camera move right 6.0
  – Camera turn left 0.25
  – Use purple arrows to adjust view.
More on Camera markers

• When do you add Camera markers?

• What do these buttons mean?
More on Camera markers

• When do you add Camera markers?
  – LAST, after the objects are placed
• What do these buttons mean?

Move camera to Camera marker
Select camera marker

Move camera marker to camera
Announcements

• Assignment 3 out on Thursday
• Next time – procedures for classes of objects, and properties.
• QZ7 due Thursday by class time
Class Today

• Writing procedures with parameters
• Moving between camera views