CompSci 94
Classwork: Random Numbers/IF
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Overview of Story

• The pig, tortoise and hare all resize and say how tall they are.

• The panda randomly jumps up and down twice.

• The hare randomly jumps up and down twice.

• One by one the panda visits each friend:
  – They both turn and face each other, the panda compares the distance between them, moves over to the friend and they compare height and width.

• All the characters turn and face the camera.

• At the same time they all do two random jumps.

Use the steps that follow to build this program!
1) Setting up the scene

- Add in any ground, I used sand. (use a light color with a good contrast.)
- Drag in these objects as in the picture
  - Biped: hare, pig, panda, tortoise, bunny
That is it for the setup!

• Now follow the steps to write the code for this story.
2) Randomly Resize animals

- In myFirstMethod put in a do in order
- For the pig
  - Generate a random number between 0.25 and 2.0
  - Resize the pig with this number
  - Have the pig say how tall it is
  - See example, the number is different each time you run
2) Randomly Resize (cont)

• For the hare:
  – Generate a random number between 0.25 and 0.75
  – Resize the hare with this number
  – Have the hare say how tall it is

• For the tortoise:
  – Generate a random number between 1.0 and 3.0
  – Resize the tortoise with this number
  – Have the tortoise say how tall it is

• Play and test out your world
  – The three animals should all resize
Animals resized example

I'm this tall 1.2012370496792975
3) Write the **biped randomJump** procedure

- This procedure has **NO parameters**
- RandomJump should have the biped randomly jump up a random amount between 0.25 and 3.0, and back down the same amount (Use a constant variable!)
- The duration of the jump should be a random amount between 0.5 and 1.5 (use another constant variable!)
4) Add code in myFirstMethod

• Have the panda jump randomly twice
• Then have the hare jump randomly twice
• Run your world more than once to see if the panda and hare jump different amounts and different speeds.
5) Write the **panda** `visitAndCompare` procedure

- This procedure has **one parameter**, of type `Biped` named `friend`

- Have the panda and friend turn and face each other at the same time.
- Panda should say the exact distance how far it is from the friend
- (more on next slide)
5) visitAndCompare procedure (cont)

- If panda is less than 3 units from friend:
  - Say “I’m less than 3 units from you”
  - Move to the friend stopping about 0.5 units from it
- If panda is 3 or more units from friend:
  - Say “I’m 3 or more units from you”
  - Move to the friend stopping about 2 units from it
- Next the animal that is taller (between panda and friend) should say “I’m taller”
- Next the animal that is wider (between panda and friend) should say “I’m wider”
6) Add code in MyFirstMethod

• Have the panda visit and compare stats with the bunny (call visitAndCompare)
• Then visit with the hare, then with the pig and then with the tortoise.
• See next page for example with pig
Panda with distance and comparing itself to Pig (note panda moves forward)
7) Finish up in myFirstMethod

- At the same time have all five animals turnToFace the camera
- Then at the same time have all five animals do a RandomJump
- **Then again**, at the same time have all five animals do another RandomJump
- Play your world. They should all jump different amounts and different lengths both times.
All jumping