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.

- For this classwork, we will continue to add code to myFirstMethod, slowing building the 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

3) Write the **biped randomJump** procedure

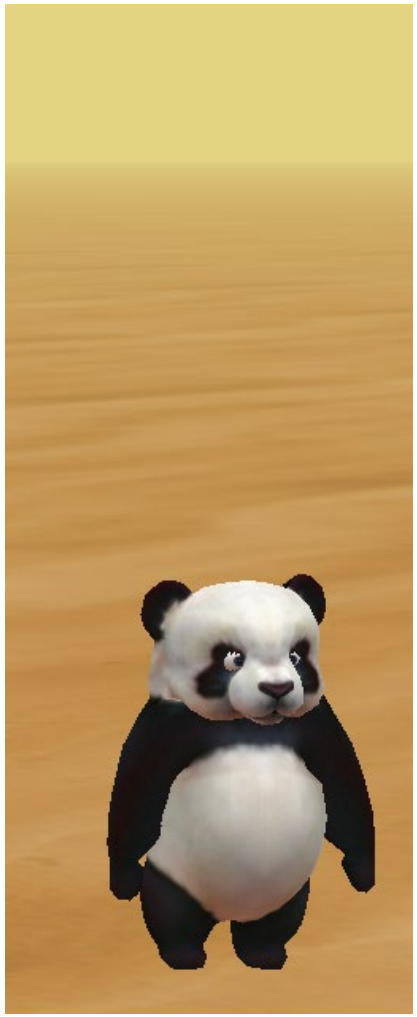
- This procedure has **NO parameters**
- RandomJump should have the biped randomly jump up a **random** amount between 0.25 and 3.0, and back down the same amount (Use a constant variable!)
- The duration of the jump should be a **random** amount between 0.5 and 1.5 (use another constant variable!)

Test RandomJump Proc

- To test RandomJump , call it twice on any Biped, **at the beginning** of myFirstMethod so you can focus on it. Does it work? Are the jumps different in speed and height?
- Once it is working delete this testing call.

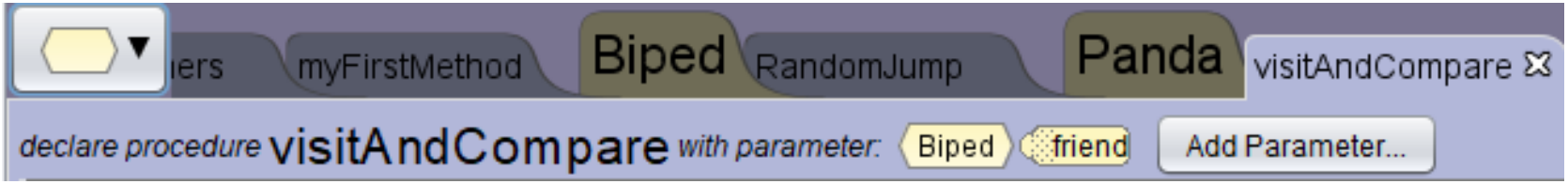
4) Continue the story, Add more code in myFirstMethod after your other code

- 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”

Test visit and Compare

- Add testing code at the beginning of myFirstMethod
- Have the panda visit the pig (who is taller) and then have the panda visit the tortoise (who is smaller). Does it work?
- Once it works, REMOVE this testing code.

6) Continue the story, Add code in MyFirstMethod at the bottom

- 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 the story 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