# CompSci 94
# Classwork: Making Decisions/If
# October 1, 2024


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# Brief Overview of additions

- We will add to the classwork from last time the following:
  - When the object turns in randomTurn it will also be told which way to turn, deciding randomly
  - 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.
  - Tortoise visits neighbors and randomly decides to paint them or not

**Use the steps that follow to build this program!**

# 1) Make a **copy** of Classwork 8

- Load classwork 8 from Sept 24
  - Click on **FILE, SAVE AS** and name it something like: classwork9Oct1
- The objects setup are the same. They were:
  - Biped: hare, pig, panda, tortoise, bunny

# 1) (cont)Most of your setup is done

- Add an object on top of the tortoise (something different) and make it invisible.
- Remember you wrote two procedures: randomJump and randomTurn
- Now follow the steps to add more code for this story.

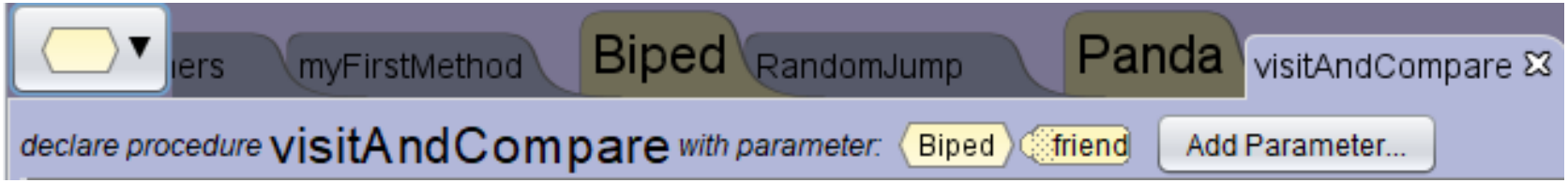
- For this classwork, we will continue to add code to myFirstMethod, slowly building the story

# 2) Add code to randomTurn

- In randomTurn the friend tells the object a random amount to turn.
- ADD the following right before the object turns.
  - The object should ask “Which direction should I turn?”
  - The friend generates a **random integer** that is 1 or 2. If it is 1, the friend says “turn to your right”, if it is 2 the friend says “turn to your left”. Then when the object turns the random amount, it will turn this random direction
- Play to see if your changes work!

# 3) Write the **panda** **visitAndCompare** procedure

- This is a PANDA 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)

# 3) 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”

# Panda with distance and comparing itself to Pig (note panda moves forward)




# Test visitAndCompare

- 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.

# 4) Continue the story, Add code in MyFirstMethod **at the bottom after the two random jumps by everyone**

- Have the panda visit and compare stats with the **bunny** (call visitAndCompare)
- Then have the panda visit with the **hare**, then with the **pig** and then with the **tortoise**.

# 5) Write **tortoise** visitAndColor procedure


- Note this is a **tortoise** procedure
- Add one parameter of type **Biped** named **neighbor**
- This procedure should:
  - Have both tortoise and neighbor turn to face each other at the same time
  - The tortoise should move to the neighbor, stopping about 1 unit in front of them

# 5) visitAndColor procedure (cont)

- This procedure should (cont):
  - Tortoise says hello
  - Then the tortoise makes a decision by generating a random integer from 1 to 4
  - If the number is one, says “I’m turning you RED” and paints the neighbor red
  - If the number is 2, says “I’m turning you GREEN” and paints the neighbor green
  - If the number is 3, says “I’m turning you PURPLE” and paints the neighbor purple
  - If the number is 4, says “You are fine the way you are.

# 6) In myFirstMethod, TEST visitAndColor procedure

- Add a call at the beginning of myFirstMethod to test this procedure.
- Call it several times, it should be different each time.
- Is each color painted in some run? Does anyone not get painted?
- REMOVE YOUR TESTING CODE once satisfied it works

# Here is a partial sample





# 7) Finish the story in myFirstMethod

- At the end of myFirst Method add:
  - At the **same time** do:
    - have the **panda** move to the invisible object where the tortoise is (*you added this object in the setup*)
    - Have the tortoise call VisitAndColor with the **pig**
  - Have the tortoise visitAndColor with the **bunny** next, then the **hare** and last the **panda**.
  - Have all five animals turn to face the camera at the same time
  - The tortoise should say “The End”

# One possible ending

pig green, bunny purple, hare no change, and panda red