CompSci 94
Classwork: Biped Procs, Review 2D views
September 14, 2021

Prof. Susan Rodger

1) Setting up the scene

- Add in any ground, I chose desert
- Drag in these objects so they are in positions similar to the picture on the next page
  - Biped: panda, pig, bunny
  - Quadruped: poodle, cow, camel

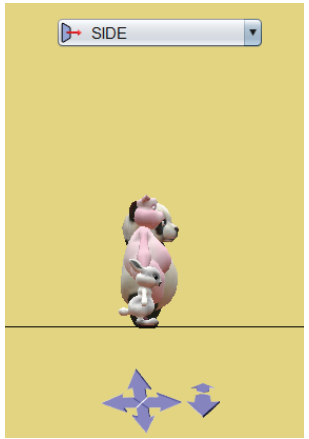
Setup Scene

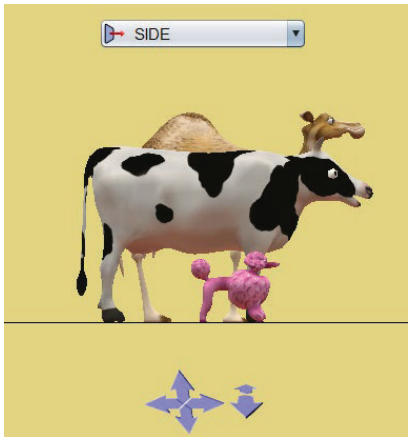
- Set up the animals this way:

- See the next slide for 2D adjustments

Scene 2D Sideview Adjustments

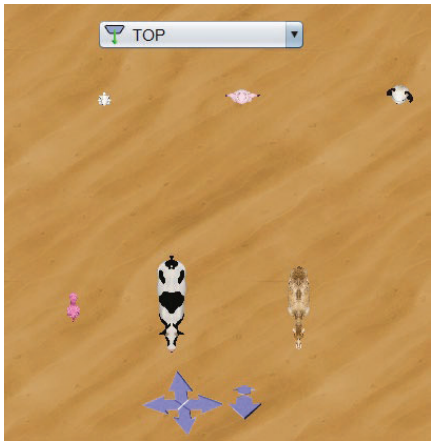
- Line bipeds in a line and quadrupeds in a line





Scene 2D Sideview Adjustments

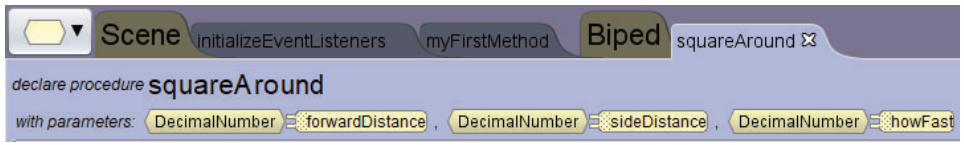
- Check top view



2) Overview of story, but **follow steps** that follow to build the program

- Panda moves in a square around the camel at the same time that pig moves in a square around the cow, and the bunny moves in a square around the poodle. They start at the same time, but the bunny finishes first, then the pig, and the panda finishes last. Next the poodle, cow and camel all waggle (defined later). Then we see the top view and everything so far happens again. Then the camera moves back to the start view, the cow turns silly (defined later) and then the cow says "The End"
- Follow the steps to build specific procedures first

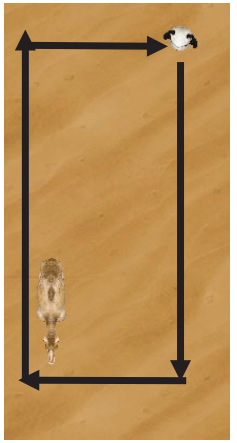
3) Write the Biped SquareAround Procedure



- Note this is a **Biped** procedure. Parameters are:
  - **forwardDistance** is a decimalNumber – how far to move forward
  - **sideDistance** is a decimalNumber – how far to move sideways
  - **howFast** is a decimalNumber – how fast each instruction should take

3) SquareAround (continued)

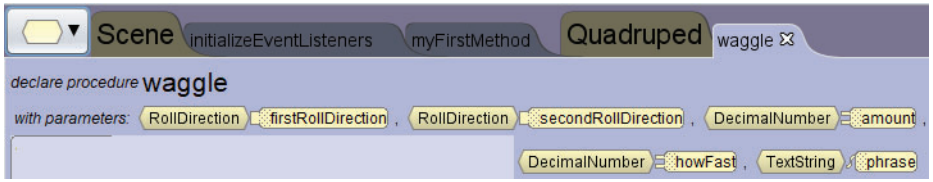
- Here is what the procedure does, 4 moves, illustrated with the panda:
  - Moves forward the forward amount
  - Moves sideways
  - Moves backwards same amount as moved forward
  - Moves sideways
- It forms a square around the camel, in this case
- Each move happens in howFast time



Test SquareAround

- Make sure squareAround works.
- Test it with the panda going around the camel, the pig going around the cow, and the bunny going around the poodle.

4) Write the Quadruped waggle procedure



- Note this is a **Quadruped** procedure. Parameters are:
  - **firstRollDirection** of type RollDirection
  - **secondRollDirection** of type RollDirection
  - **amount** and **howFast** both decimal numbers
  - **phrase** of type TextString

4) Waggle procedure (cont)

- Here is what the waggle procedure does
  - It rolls in the firstRollDirection, for amount
  - It rolls in the secondRollDirection, for amount
  - It rolls in the secondRollDirection, for amount
  - It rolls in the firstRollDirection, for amount
  - Then the neck raises
  - The animal says the phrase
  - Then the neck lowers back down.
  - Then all four roll instructions above happen again in the same order

4) Waggle procdure (cont2)

- All the roll instructions, each must happen in howFast time.
- The other instructions are each 1 second

- Test out the Waggle procedure with the cow

5) Write the Cow procedure turnSilly

- Note this is a Cow procedure. Its parameters are:
- **numRotations** is a decimal number – how many rotations each turn should be
- **howFast** is a decimal number – how long each instruction should take

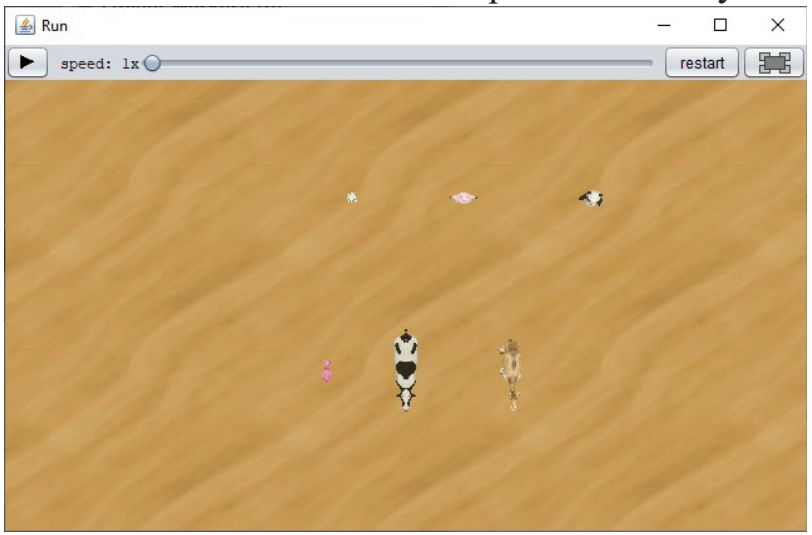
5) Cow procedure turnSilly (cont)

- This procedure should:
  - Have the cow turn left numRotations in howFast time
  - Have the cow turn right numRotations in howFast time.
  - Test it to make sure it works!

6) Put in two Camera Markers, one for startView

And one for a top view

You want to see the whole square when they move



7) Put the story together

- Remove any code in myFirstMethod, then put in myFirstMethod (call your procedures!)
  - The panda does a square around the camel, the pig does a square around the cow, and the bunny does a square around the poodle. They all start at the same time but the bunny finishes first, then the pig finishes and finally the panda finishes.
  - Next, At the same time, the cow, camel and poodle all waggle 0.1 quickly for each instruction, rolling left first, then right, each saying a different word
  - Next, The camera moves to the top view

7) Put the story together (cont)

- Next, the panda, pig and bunny do the same squareAround code they did at the beginning (but this time panda finishes first, then pig, and then bunny)
- The cow, camel and poodle waggle again quickly at the same time, 0.15 amount per instruction and rolling right first, and then left, each saying a different word
- The camera moves back to the start view
- The cow turns around five rotations each way in 2 seconds for each turn
- The cow says The end