Lecture 11:
More animating objects

CS 51G

Spring 2018

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Announcements

- Discuss Exercise 9.10.1

- Questions on BoxBall?

- Office hour this morning abbreviated:
    - 10 to 10:30 a.m. only

Active Objects

- Falling Leaves program:

  - http://www.cs.pomona.edu/classes/cs051G/demos/FallingLeaves/FallingLeaves.grace

- Think about parameters!

More on Falling Leaves

- Main program creates a tree when mouse clicked.

- Tree repeatedly randomly picks image and starts up a leaf (at random location and speed) with that image.

- Leaf creates drawable image and falls.

Classes & Objects

- Main program is object
  - inherit graphicApplicationSize().

- Classes for animation (active!).
  - Typically have start method and use animator.while
  - leaves, tree, pongBall

- Regular (passive) classes
  - Methods to respond to requests from other objects
    - Tshirt, basketBall, box, ...

Another Example

- Dripper:
    - http://www.cs.pomona.edu/classes/cs051G/demos/Dripper/Dripper.grace

- Main program starts animator.while, creating startBall

- startBall creates sequence of ovals, each offset by a bit.
    - No moving — create new ones.

Nested Loops

- Can have a while loop within another while loop.
  - Knitting
    - http://www.cs.pomona.edu/classes/cs051G/demos/Knitting/Knitting.grace
  - Flag
    - http://www.cs.pomona.edu/classes/cs051G/demos/Flag/Flag.grace

Talking to Animated Objects

- Often need to communicate with object while executing an animated while loop

  - http://www.cs.pomona.edu/classes/cs051G/demos/BouncingBasketball/BouncingBasketball.grace

- Can write method to set a variable that animated object can check.

  - See stopDribbling method in dribbler class.

Audio

- To play audio in your program.
  - Find an audio file (in .wav format) on web.
  - Use audioUrl to load it into your program:
    - def bounce: Audio = audioUrl ("http://www.cs.pomona.edu/~kim/CSC051GF16/demos/BouncingBasketball/hit.wav")
  - Send "play" message to play the sound.
    - bounce.play

Questions?