CompSci 94
Turning and Procedures
September 13, 2018

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Class Today

• Turning around an object – “as seen by”
• A procedure – organize and reuse code
• Classwork – build a scene with turning and procedures
• Be sure to check off your classwork when done
Turn in place vs Turn around

- Turn in place (spin around)

- Turn around something – use “as seen by”

- Make duration larger to slow down
- Go forward around if use “right” and object is to its right, Otherwise go backwards
Code for *turn vs turn as seen by*
Procedure

• Way to put a block of code together, give it a name, and then can call it
• Reuse code – write less code
• Organize code better
• Look at two types of procedures:
  – Procedure for an object
  – Procedure for the scene
MyFirstMethod – is a Procedure

- The editor where you put code is called myFirstMethod, and is a procedure

- Where does an Alice program start?
MyFirstMethod – is a Procedure

- Program starts in procedure sceneActivated
- Note it says to call myFirstMethod and execute it!
Procedure for Object

- Teach Tony to do a front flip
- Click “Scene” tab, then “playing card”, then addPlayingCardProcedure
Give the procedure a name

```
preview: declare procedure flipTony
name: flipTony
```
FlipTony has a tab for code
FlipTony code

```
declare procedure flipTony
    do in order
    this move UP, 1.0 add detail
    this turn FORWARD, 1.0 add detail
    do in order
    do together
        this getRightHip turn FORWARD, 0.125, duration 0.25
        this getLeftHip turn BACKWARD, 0.125, duration 0.25
    do together
        this getRightHip turn BACKWARD, 0.125, duration 0.25
        this getLeftHip turn FORWARD, 0.125, duration 0.25
    this move DOWN, 1.0 add detail
```
How do we test this code?

- Back to sceneActivated, drag in flipTony and **disable** myFirstMethod

- Now click play and only flipTony occurs
Tony flip correct?

• What does Tony flip around?

• How do we get Tony to flip around his center?
Tony flip correct?

• What does Tony flip around?
  – His feet

• How do we get Tony to flip around his center?
  – Use asSeenBy
When flipTony procedure works

- Disable flipTony
- Reenable myFirstMethod
Use flipTony Procedure

- Drag and drop flipTony in myFirstMethod where you want to see a flip
Difference between object procedure and scene procedure

• Object procedure
  – Applies only to that object

• Scene procedure
  – Could have multiple objects referenced in it, or camera or ground in it
Procedure for the Scene

• Write a procedure called CameraFromAbove that moves the camera above to look down
Code for CameraFromAbove

• How to test it? Put it first in myFirstMethod
• Could make it happen instantly – duration 0
• Is there another way to get camera there?
How to get the camera to move back?

• Create a camera marker for original scene
• Then use camera moveAndOrientTo that cameraMarker
Final Sample Code (part 1)
Final Sample Code (part 2)
This lecture covered

• Turn in place vs turn around an object with “as seen by”

• Creating a procedure to organize code
  – Scene procedure
  – Object procedure

• Can call procedure over and over and write less code