CompSci 94
Adding a CountDown Timer
November 1, 2018

Prof. Susan Rodger
Class Today

• How to setup a countdown timer.
Similar to Score
Need a number and 3D-Text

• Create a number variable, `timerNumber`
• Create a 3D text to display the value of the number, `timer` - *has a string value*
• Create a procedure to initialize both
• Create a procedure to update the timer
  – Timer counts down!
Proc – InitializeTimer, updateTimer

```
declare procedure InitializeTimer
    do in order
        this.setTimerNumber timerNumber: = 10.0
        this.timer.setValue = this.timerNumber
```

```
declare procedure updateTimer
    do in order
        this.setTimerNumber timerNumber: = this.timerNumber - 1.0
        this.timer.setValue = this.timerNumber
```
Properties

- May also want to add a Boolean variable to turn on when playing game and turn off when game is over
Create a Timer Event Listener

- Create the event
Resulting Event

- Note the time chosen means this event will repeat in that amount of time
  - In this case the event repeats every 1.0 sec
What question do you want to ask each time in the event?

Stops at 0.0!
Decimal numbers are not stored exactly in a computer

- $1/3 = .3333333333333333333$
- $.25$ might be $.250000000145$

- So NEVER compare if a decimal number is equal to a number, such as:
  - `timerNumber == 0.0`
- INSTEAD ask if `timerNumber >= 0.00001`
Whole Numbers are stored exactly in the computer

• Ok to compare if a whole number is equal to 5 or 0…
This lecture covered

• Setting up a timer to count down

• Event – TimeListener
  – Given a time increment, the event happens over and over in that time increment

• Decimal numbers are not stored exactly in the computer, so should never check if they are equal to a decimal number but instead check if > or < to values.