

Tkinter GUI programming

Modeling Motion Week 6 Computing Homework

Do one of the following and submit it at Thursday's computing lecture May 13:

- 1) Start create a Tkinter GUI window for the computing part of your project with at least one widget. Send the code whether it works or not. If it doesn't include a description of what you've tried and what you think might be wrong.
- 2) Do the following homework problem if you don't plan to add a GUI element to your project program or you want to try something more basic first.

The following program) defines a class `SineWave` which draws a green sine wave with Visual Python. `SineWave` also has a `setAmplitude()` method which will change the amplitude and redraw the wave. Using the examples provided in class, try to create a class called `Application` which has an `__init__()` method that creates a `SineWave` and a `Scale` widget which adjusts the amplitude of the `SineWave` by calling its `setAmplitude` method. Allow adjustment from -4 to 4 in steps of .1. Use the `Scale` widget's `set()` method to set its initial value to an amplitude of 1.

Then add a second `Scale` widget to adjust the frequency between 1 and 10 periods every 2π radians.

```
# Posted on the website at:  
# http://academic.evergreen.edu/curricular/modelingmotion/ExampleCode/home.php#week7  
from visual import *
```

```
class SineWave:  
    def __init__(self):  
        self.amplitude = 1  
        self.frequency = 1  
        self.wave = curve(color=color.green, radius=.1)  
        self.draw()  
  
        #make axes  
        curve(pos=[(-2*pi,0),(2*pi,0)],radius=.1) # x-axis  
        curve(pos=[(0,-1),(0,1)],radius=.1)      # y-axis  
  
    def setAmplitude(self,new_amplitude):  
        self.amplitude = new_amplitude  
        self.draw()  
  
    def draw(self):  
        points=[]  
        for x in arange(-2*pi,2*pi,pi/100):  
            points.append( (x,self.amplitude*sin(self.frequency*x)) )  
        self.wave.pos=points  
  
sine = SineWave()  
  
sine.setAmplitude(2) # change the amplitude from the default of 1
```