CS160 Lab 3 Fall 2012
Loops and Graphics
Due Friday 10/5/2012 at 12:01AM

Create a file named `pi.py` that inputs the number of terms to use to approximate π as described in exercise 15 of chapter 3 on p. 78. Output both the approximation of π and the absolute value of the difference between the approximation and the value of `math.pi`. Here is a sample run:

```
enter number of terms to use to approximate pi: 100000
the approximation is:  3.1416026534897203
the difference is:  9.999899927226608e-06
```

Create a file named `face.py` that will draw a face based on a user's single mouse click. Make your window have size 400 by 400. Draw the face as a circle centered at the mouse click with radius 100. Draw the eyes with radius 10. The left eye should be 25 pixels to the left and 15 pixels above the center of the circle. The right eye should be 25 pixels to the right and 15 pixels above the center of the circle. Draw the mouth as an oval that is 50 pixels wide and 30 pixels high. The center of the mouth must be 40 pixels below the center of the face circle. Wait for a second mouse click and then close the window. You may color the face and eyes any color you wish and add additional shapes such as a nose or hat, but make certain the eyes and face outlines are clearly visible and in the correct location and do not require additional mouse clicks. You will need the `graphics.py` file that is on iLearn. Put it in the same directory as your `face.py` file.

After you have commented and tested your code, submit your programs by emailing the `pi.py`, `face.py`, and `help.txt` files to `dreed@capital.edu` as attachments with the appropriate subject line. You must use Capital's webmail as some email systems send attachments differently and I automatically extract the attachment based on the email address. Use the subject `CS160-1ATT` for the 1PM section and `CS160-2ATT` for the 2PM section.

The lab will be graded using the rubric in the Course Documents section of iLearn.