Homework 6 is out, due March 28

No transcripts for graphics (screenshots instead)

Office hours Thursday: 11am-1pm in Ford 015

I will be away next week at a conference, but there will still be class, lab, and homework as usual (but no office hours)

Please less code on Piazza!
Outline: 3/22

- Recap last time
- Colors in graphics (RGB) + coding extras
- Animated graphics
- While loops
- Introduce Lab 6
Recap
(+ examples)
Deniz
Serena
Michaela and Jessica
Mae
Mai
Mai

Deniz
Eve

Chloe

![Target for Eve](image1.png)

![Target for Chloe](image2.png)
Michaela and Jessica
Bullseye code

Setting up a few constants can make it easier to get the math right later on.

```python
# set up constants to be used throughout our program
width = 450
height = 450
max_r = 200  # max radius
sep = 20     # separation between consecutive circles

# set up the window
win = GraphWin("Bullseye", width, height)
win.setBackground("green")

# center of the circles
center = Point(width/2, height/2)

# for loop over the target rings
# for r in range(max_r, 0, -sep):  # alternative for loop
for i in range(10):

    # set up the circles
    radius = max_r - i*sep
    c = Circle(center, radius)
    c.setFill(color_lst[i])
    c.draw(win)

    # set up the numbers as text
    # maximum x coordinate is 225 + 200 - 10 = 415
    max_x = width/2 + max_r - sep/2
    p = Point(max_x - i*sep, height/2)
    score = Text(p, str(i+1))  # use Text constructor
    score.setSize(14)
    score.draw(win)
```
Colors in Graphics
(+ doc strings and assignment)
Assignment by addition

```python
>>> lst = [3, 9, 12, 1]

>>> s = 0
>>> for l in lst:
     s = s + l
```

Both ways are equivalent

```python
>>> s = 0
>>> for l in lst:
     s += l  # assignment by addition ("plus equals")
```
Colors as RGB components (red, blue, green)

http://www.rapidtables.com/web/color/RGB_Color.htm
Docstrings (commenting functions)

- Use triple double quotes
- Right below the function declaration
- Short descriptions can be on one line
- Long descriptions: each parameter on one line
- Return value on one line (if applicable)
- Specify the type of the parameters and the return value

```python
def draw_frog(center, message, window):
    """Draw a frog.
    center: type Point, the center position of the frog
    message: type str, the text the frog will say
    window: type GraphWin, the window on which to draw the frog"
    code here

def draw_frog(x,y):
    """Draw a frog at the given (x,y) position (both ints)."
    code here
```

from Homework 6
Animated Graphics and While Loops
Revisit “guess my number” with while loop
import random

def main():
    n = eval(input("Enter a number: "))

    guessed_number = False

    while guessed_number == False:
        guess = random.randint(0,10)
        if guess == n:
            print("you guessed it!")
            guessed_number = True
        else:
            print("try again")

main()
Introduction to Lab 6
Spot painting by Damien Hirst
Spot painting by Damien Hirst
Spin painting by Damien Hirst
Butterfly art by Damien Hirst
Geometric art by Sol LeWitt
Geometric art by Sol LeWitt
Cube sculptures by Sol LeWitt