Announcements

- HW6 solutions posted
- HW7 due Sunday
- HW8 is posted - due Monday after Easter
- Tuesday after Easter - review Wednesday - midterm up to Ch. 13
Recursion

A function which calls itself on a smaller input.

Base case last time:
- Fibonacci #5
- Searching/sorting
CS1 graphics example: Bulls eye

- Base case: None

- Defining recursively:
  - Outer circle
  - Inner (smaller) bulls eye
**Code:** Using Inheritance (from Drawable)

**Constructor:**

```python
self._outer = Circle()
# Set size and color

self._inner = Bullseye(numBands-1)

if numBands == 0:
    self._inner = None
else:
```

```
Unfolding the recursion (p 366)

Bullseye constructor

Bullseye(3, 120, 'red', 'black')

Circle(120)

< outer

setfill color ('red')

Bullseye(280, 'black', 'red')

inner

Circle(88)

< outer

setfill ('black')

Bullseye(140, 'red', 'black')
Other functions

- get Num Bands
- get Radius
- set Colors

- draw — required whenever we inherit from Drawable!
Binary Tree: root + 2 angry trees

Base case: leaf or null node
Linked list

head

list

data1 → data2 → data3 → null

tail is NULL