

Outline

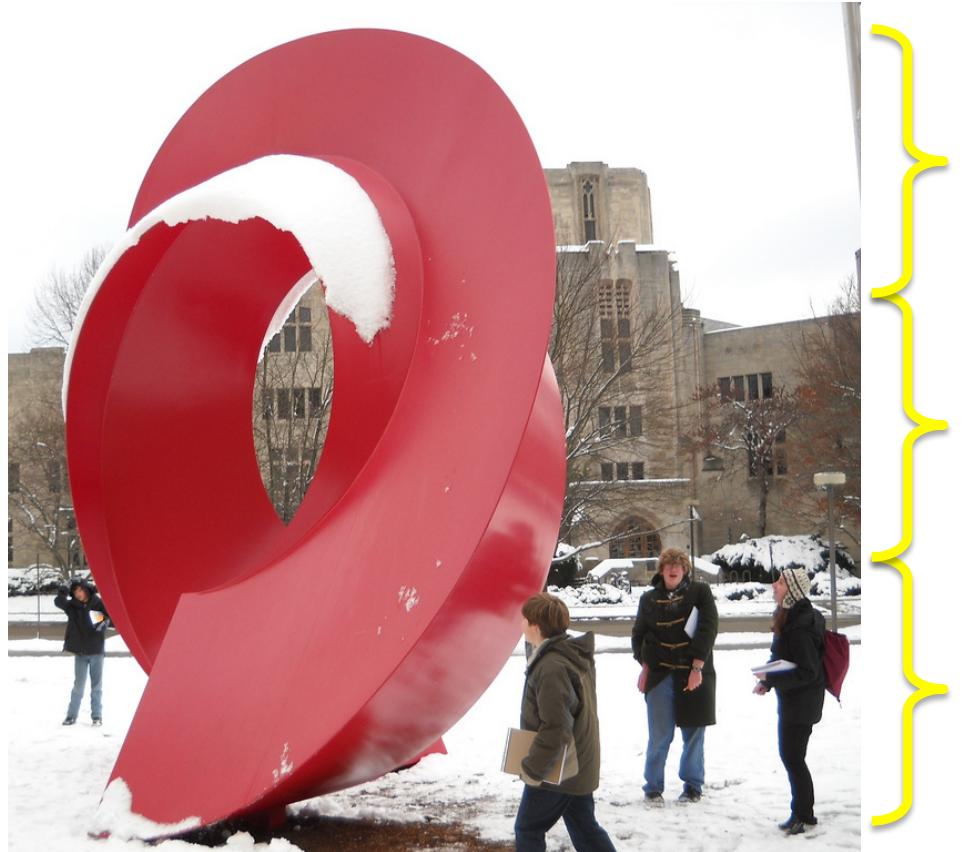
- Install software
- Crash course in Python and IPython
- Crash course in VTK (Visualization Toolkit)
- Begin modeling Indiana Arc

Programming Languages

- Tell computer what to do using an algorithm and a program in some language
(algorithm: a step-by-step problem-solving procedure)
- Popular languages: C, C++, Java, Python, etc.
- Python is nice because it's a scripting language and therefore more interactive and easier to develop a program.



Equilateral triangle: 184 cm sides



Approximately
3 x Eva's height

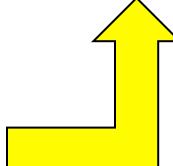


Triangle height = $184 \text{ cm} * \cos 60 \text{ degs} = \sim 184 * .866 = \sim 159$
Sculpture height = $\sim 159 * 3.5 = \sim 560 \text{ cm}$

In addition to giving us a visual approximation to the height,
we also see something about the height of the main annulus.

fruit.py

```
class Fruit:  
    def __init__(self):  
        self.sweet = True  
    def color(self):  
        return 'red'  
  
class Banana(Fruit):  
    def color(self):  
        return 'yellow'  
    def shape(self):  
        return 'shape is not round'  
  
class Tomato(Fruit):  
    def __init__(self):  
        self.sweet = False
```



```
print '---- Fruit ----'  
fruit = Fruit()  
print 'Sweet? ',fruit.sweet  
print fruit.color()  
  
print '---- Banana ----'  
fruit = Banana()  
print fruit.sweet  
print 'Sweet? ',fruit.sweet  
print fruit.color()  
print fruit.shape()  
  
print '---- Tomato ----'  
fruit = Tomato()  
print 'Sweet? ',fruit.sweet  
print fruit.color()  
print fruit.shape()
```

Some useful Python scripts at:

<http://mypage.iu.edu/~heiland/modeling>