CS 160
CS Orientation

Strings and Bad Input
Odds and Ends...

- Demo Assignment #4
- Assignment #5 posted
- Cool code visualizer:
  - [http://pythontutor.com/visualize.html#mode=edit](http://pythontutor.com/visualize.html#mode=edit)
Revisit Square Root Finder...

Design a Python program that takes a **positive whole number** $n$ as input and **outputs the square root of $n$** using the Babylonian algorithm. The Babylonian algorithm computes the square root of a positive number, $n$, as follows:

1. Make a guess at the answer (you can pick $n/2$ as your initial guess).
2. Compute $r = n / \text{guess}$
3. Set $\text{guess} = (\text{guess} + r) / 2$
4. Go back to step 2 for as many iterations as necessary. The more steps 2 and 3 are repeated, the closer guess will become to the square root of $n$. 


In-class Exercise: check loop understanding

• Get into groups of 4-5.
• Explain what each of line in this code does and tell me what the output is:

```python
y=0;
for x in range(10):
    if (x%2):
        y=y+1;
print(y);
```
What happens when you enter bad data?

• Where/when does the error occur?
Strings

• Create a string
  my_string="hello";

• Access a character
  my_string[0] #gives you first character

• Length
  len(my_string)
Exercise

• Write an algorithm to determine if input is bad without using exceptions, i.e. it would work in any language!!! ☺
  – How will you make sure you get a good positive integer from the user?
  – How will you make sure you get a good floating point number from the user?