CS 160
CS Orientation

Loops and Functions...
Odds and Ends...

11 - 15

• In-class exercises in Canvas
• Assignment #3 discussion
Revisit In-class Exercise #2

- Write a loop to print the following picture:

```python
print("   *   ");
print("  ***  ");
print(" ***** ");
print("*******");
```
For loop example...

```python
1 y=0;
2 for x in range(10):
3     if(x%2):
4         y=y+1;
5     print(y);
6
7 #print the triangle below
8 # *
9 # ***
10 # *****
11 #********
12 spaces = 3; #start with three spaces
13 stars = 1;  #start with one star
14 for x in range(4): #for the 4 lines
15     for s in range(spaces): #print number of spaces
16         print(" ", end="");
17     for st in range(stars): #print number of stars
18         print("**", end="");
19     print(" ");
20     spaces-=1; #there is one less space for each row
21     stars+=2;  #there is 2 more stars for each row

-- INSERT --
```
Let’s make it better...

```python
# print the triangle below, but for any number of rows!!
#
# *
# ***
# *****
# ******
rows = int(input("Enter rows: "));
spaces = rows-1; # start with three spaces
stars = 1;  # start with one star
for x in range(rows):  # for the number of rows entered by the user
    for s in range(spaces):  # print number of spaces
        print(" ", end="");
    for st in range(stars):  # print number of stars
        print("x", end="");
    print("\n");
    spaces-=1;  # there is one less space for each row
    stars+=2;   # there is 2 more stars for each row
```
Try making it into a while...
Pre-defined Functions

- May need to import a library
- Use the function from library/object
- Example:
  ```python
  import math
  math.sqrt(4);
  ```