Outline for April 3, 2014

Reading: §2

1. Python, files and shells
   a. Python: programming *language* that you use to tell the computer what to do
   b. Shell: what you can type Python statements directly into, to see what they do
   c. IDLE: the program that *interprets* Python statements (executes the Python program)
   d. File: type Python statements into this, and then have IDLE execute those statements by running the program in the file
2. First program: hello, world [*hello0.py*]
   a. Explain printing
   b. Demonstrate program in IDLE
3. Variables
   a. What they are
   b. Variable names
   c. Variable types (int, float, string)
   d. Python keywords
4. Statements
5. Simple assignment: `variable = expression`
6. Expressions
   a. Operators `+`, `-`, `*`, `/`, `//`, `%`, `**`
   b. Precedence
      i. Parentheses for grouping (`(`, `)`)
      ii. Exponentiation (`**`); associates right to left
      iii. Positive, negative (unary `+`, `-`)
      iv. Multiplication, division, integer division, remainder (`*`, `/`, `//`, `%`)
      v. Addition, subtraction (binary `+`, `-`)
      vi. In general, operators of equal precedence are evaluated from the left to the right (associativity); exception noted above
7. Examples
   a. Temperature conversion [*temp.py*]
   b. Compute the hypotenuse of a right triangle [*hypotnoex.py*]
8. The difference between strings and integers [*twoplustwo.py*]
   a. Difference between `'2 + 2'`, `2 + 2`
   b. Print statements usually end lines
   c. Getting print statements not to end lines