

Outline for January 13, 2012

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. Example: program to convert temperature [*tempcvt.py*]
 - a. Do we go from Fahrenheit to Celsius, Celsius to Fahrenheit, or both?
 - i. Go from Celsius to Fahrenheit
 - b. Steps in the program:
 - i. Ask user for temperature in Celsius
 - ii. Convert to Fahrenheit ($F = \frac{9}{5}C + 32$)
 - iii. Print result in Fahrenheit
 - c. Implementation (line by line)
3. Type converter functions `int`, `float`, `str`
4. 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
5. Simple assignment: `variable = expression`
6. Input: input statement
 - a. `input(prompt)` prints prompt, waits for user
 - b. When user hits enter, it returns what was typed as a string