

Outline for January 9

Reading: Wentworth *et al.*, §2

Assignments: Homework 1, due on January 18 at 11:55pm

1. Variables
 - a. What they are
 - b. Variable names
 - c. Variable types (int, float, string)
 - d. Function type ()
 - e. Python keywords
2. Variables
 - a. Legal names
 - b. Keywords
 - c. How to pick variable names
3. Simple assignment: `variable = expression`
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. Example
 - a. Compute the hypotenuse of a right triangle [*hypotnoex.py*]
6. 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
7. Type converter functions `int`, `float`, `str`
8. String operators
 - a. Operator `+`: string concatenation
 - b. Operator `*`: repetition
9. Input: input statement
 - a. `input(prompt)` prints prompt, waits for user
 - b. When user hits enter, it returns what was typed as a string
10. Exceptions
 - a. Division by zero [*divby0.py*]
 - b. Typing letters when a number is expected [*hypotex.py*]
11. Writing a program: rice on chessboard [*ricechess.py*]