Lecture 9: October 29, 2019

Assignments: Homework 3, due on November 8 at 11:59pm

1. Tuples
   (a) Used to group data
   (b) Like lists, but immutable

2. `isinstance(obj,type)` function
   (a) `type` is `bool`, `float`, `int`, `list`, `str`, `tuple`

3. Recursion
   (a) *n* factorial [*nfact.py*]

4. Thinking recursively [*recfun.py*]
   (a) First: think of the recursive case (write the problem in terms of something involving a smaller instance of the problem)
   (b) Next: think of base case (when to stop)
   (c) Example: Find the length of a string
   (d) Example: Does the string only have alphabetic characters in it?
   (e) Example: Find the maximum element of a list
   (f) Example: Construct a string from a list of strings
   (g) Example: Reverse a string

5. Recursion
   (a) Palindromes [*palindrome.py*]
   (b) Fibonacci numbers [*rfib.py*]
   (c) Sum of digits [*sumdigits.py*]
   (d) Greatest common divisor [*gcd.py*]
   (e) Nested lists: is an item in a list? [*isinlist.py*]
   (f) Tower of Hanoi [*hanoi.py*]