

Outline for February 7, 2018

Reading: §8

1. Lists
 - a. Sequence of values (ints, floats, strings, other lists, etc.)
 - b. Denoted by square brackets [] with values separated by commas
 - c. Lists are mutable
 - d. How to create a list
2. Program to print words in a line [*lines.py*]
3. What you can do with lists
 - a. Check membership: **in**, **not in**
 - b. +: concatenation
 - c. *: repetition
 - d. **list**[a:b]: slice list from *a* to *b* - 1
 - e. **del list**[i]: delete element **list**[i]; *i* can be a slice
4. Objects, references, aliasing
 - a. For strings, one copy: assume `a = "banana"`
 - i. After `b = a` or `b = a[:]`, then `a is b` is True
 - b. For lists, multiple copies: assume `A = [1, 2, 3]`
 - i. After `B = A` then `A is B` is True
 - ii. After `B = A[:]`, then `A is B` is False
5. **enumerate**(L) produces pairs (*index*, *list element*)
6. Lists as parameters: can change list elements in function and they are changed in caller [*args2.py*]
 - a. Add elements to, remove elements: `L.append(x)`, `L.extend(ls)`, `L.insert(i, x)`, `L.pop()`, `L.remove(x)`
 - b. Element ordering: `L.reverse()`, `L.sort()`
 - c. Other: `L.count(x)`, `L.index(x)`
7. Tuples
 - a. Used to group data
 - b. Like lists, but immutable
8. Recursion
 - a. *n* factorial [*nfact.py*]
 - b. Fibonacci numbers [*rfib.py*]
 - c. Sum of digits [*sumdigits.py*]