

## Outline for January 30, 2019

**Reading:** §8

**Assignments:** February 8, 2019 at 11:55pm

1. Lists [*datecv.py*]
  - 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. 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)`
6. Tuples
  - a. Used to group data
  - b. Like lists, but immutable
7. Recursion
  - a. *n* factorial [*nfact.py*]