

## Outline for February 27, 2019

Reading: *text*, §11

Homework: due March 8, 2018 at 11:59pm

1. Modifying parameter lists
  - a. Not directly [*modpar1.py*]
  - b. Using lists [*modpar2.py*]
  - c. Why it works
2. Pattern matching
  - a. Regular expressions
  - b. Atoms: letters, digits
  - c. Match any character except newline: `.`
  - d. Match any of a set of characters: `[0123456789]`, `^[0123456789]`, `[0-9]`
  - e. Repetition: `*`, `+`, `{m,n}`; greedy matching; put `?` after and they match as few characters as possible
  - f. Match start, end of string: `^`, `$`; `$` matches end of line, also
  - g. Grouping: `(,)`
  - h. Escape metacharacters: `\`
3. “Raw” string notation: backslash not handled specially; put “r” before string
4. Useful functions/methods [*recomp.py*, *renocomp.py*, *regroup.py*]
  - a. `re.compile(str)` compiles the pattern into `pc` (that is, `pc = re.compile(str)`)
  - b. `pc.match(str)` returns `None` if compiled pattern `pc` does not match beginning of string `str`
  - c. `pc.search(str)` returns `None` if pattern `pc` does not match any part of string `str`
  - d. `pc.findall(str)` returns a list of substrings of the string `str` that match the pattern `pc`
  - e. `pc.group(str)` returns the substring of the string `str` that the pattern `pc` matches
  - f. `pc.start(str)` returns the starting position of the match
  - g. `pc.end(str)` returns the ending position of the match
  - h. `pc.span(str)` returns tuple (start, end) positions of match
5. Useful abbreviations
  - a. `\d` matches any digit; same as `[0-9]`
  - b. `\s` matches any space character; same as `[\t\n\r\f\v]`
  - c. `\w` matches any alphanumeric character and underscore; same as `[a-zA-Z0-9_]`
  - d. `\D` matches any character *except* a digit; inverse of `\d`
  - e. `\S` matches any character *except* a space character; inverse of `\s`
  - f. `\W` matches any character *except* an alphanumeric character or underscore; inverse of `\w`
  - g. `\b` matches a word boundary — a word is a sequence of alphanumeric characters