

22C:16 Practice Problem Set 7

Morning Section: Complete before Tuesday, 3-26-2013

Evening Section: Complete before Monday, 3-25-2013

These practice problems correspond roughly to the material covered in Week 8 (3/11-3/15). The focus of this problem set is on evaluating expressions involving the list operations summarized in lecture on Monday, 3/11 and the functions `map`, `filter`, and `reduce`, discussed on Friday, 3/15.

1. Evaluate each expression and write down its *value*. Assume that (i) `concat` is a function that takes two arguments `a` and `b` and returns `a + b`, (ii) `isLen2` is a function that takes an argument `x` and returns `len(x) == 2`, and (iii) `L = ["Write", ["your", "name"], "your", "section", ["and", "your"], "student"], "ID"]`.
 - (a) `L[:6:2]`
 - (b) `L.index("your")`
 - (c) `reduce(concat, map(len, L))`
 - (d) `L[1] + L[4][0]`
 - (e) `map(chr, map(concat, map(ord, ["a", "b"]), range(1,3)))`
 - (f) `reduce(concat, map(range, range(4)))`
 - (g) `map(len, L).count(2)`
 - (h) `reduce(concat, map(concat, L, L)[1])`
 2. What does each of the following expression evaluate to? Suppose that `L` is the list `["These", "are", "a", ["few", "words"], "that", "we", "will", "use"]`.
 - (a) `L[3:4][0][1][2]`
 - (b) `"few" in L`
 - (c) `[L[1]] + L[3]`
 - (d) `L[4:]`
 - (e) `L[0::2]`
 3. Suppose that `L` is the list `["what", "are", "you", "doing", "next", "Saturday?"]`. Write down what the value of `L` is after each of the following Python statements.
 - (a) `L.insert(2, "not")`
 - (b) `L[:2] = ["why", "you", "nothing"]`
 - (c) `L.remove("you")`
 - (d) `L[2] = L[3][2]`
-