

CS:1210 Practice Problem Set 9

Complete before Tuesday, 3-31-2015

These practice problems correspond roughly to the material covered in Week 9 on list comprehensions.

1. Write down what each of the following list comprehensions evaluates to.
 - (a) `[str(x)[::-1] for x in range(10, 15)]`
 - (b) `[int(str(x)[::-1]) for x in range(10, 15)]`
 - (c) `[10 + x + y for x in range(3) for y in range(4)]`
 - (d) `[list(range(x, y)) for x in range(3) for y in range(x, x+3)]`
 - (e) `[y for x in [range(z) for z in range(4)] for y in x]`
 - (f) `[x for x in range(500) if "33" in str(x)]`
 - (g) `[x+y for x in range(4) for y in range(5) if y - x > 2]`

 2. Suppose that L equals the list `[["This", ["is", "a"]], "nested", ["list", "with"], ["several", ["different"]], ["levels", "of"], "nesting"]`. Evaluate the following list comprehensions.
 - (a) `[x.split("e") for x in L if len(x) > 3]`
 - (b) `[i for i in range(len(L)) if "nest" in L[i]]`
 - (c) `[x[0] for x in L if type(x) == list]`
 - (d) `[y for x in L[:3] for y in x]`
 - (e) `[x for x in L if type(x) == str]`
 - (f) `[y for x in L for y in x if type(x) == list and type(y) == str]`
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