CS10 With-Computer Final (Spring 2018, Sec 1)

There are three questions, two Snap! ones and a Python one. Save your Snap! code into a Snap! file, and name it **FinalYourfirstnameYourlastname.xml** (e.g., **FinalAlanTuring.xml**). For the Python question, create a new Python file and name it **FinalYourfirstnameYourlastname.py** (e.g., **FinalAlanTuring.py**). Submit both files on bCourses under the "online" final assignment for your lab section. All questions are independent, and each worth 5.

Snap! Questions: (use this starter file: https://bit.ly/2E0ZEBg)

You want to find out if a list (of at least two elements) is *all increasing*. (I.e., is every element bigger than the one before it?)

a) Write it *recursively*. You may not use any iteration (**repeat**, **repeat until**, **for**, **for each**) or higher-order functions in this solution.

b) Write *without using recursion*. You can earn +3 bonus points if you can do it with only higher-order functions (i.e., only **map**, **keep** and **combine** to drive the iteration). Here are three helpers you might find handy (note the **map** shown below is in addition to the built-in **map**).

Python Question:

Write a function that returns a list of the *most common elements in a sequence.* You *must* use a dictionary in your solution; if you forget any commands, remember there's **help(**type**)** and **dir(**type**)**, as in **help(dict)** or **dir(str)**. You may find the **min** and **max** functions helpful.

```
most_common([1,2,3,3,4,4,6,4,4,5,5,5,5]) ➔ [4, 5]
most_common("uc berkeley also cal") ➔ ['l', ' ', 'e']
```