Homework 1

Due Monday, October 13, at 11:30pm

For this assignment, you will get practice implementing a number of recursive functions in OCaml. As important as getting the right behavior is using the style that is natural for ML and its unique language features:

- *Never* use imperative features like assignment and loops. If you're using a construct not discussed in class or in the book, you're probably doing something bad!
- Use pattern matching instead of conditionals when it is natural to do so.
- Use local variables to avoid recomputing an expression that is needed multiple times in a function.
- Similarly, avoid code duplication. If the same code is needed in multiple places, possibly with slight variations, make a helper function so that the code only has to be written once.

You may define as many helper functions as needed, except when a problem explicitly tells you not to do so. You may use any functions and operators available at the top level in OCaml (e.g., list operators like `::` and `@`), but **you may not use any OCaml library functions, i.e. functions that are accessed through a module (e.g., `List.length`)**.

Remember the key to solving problems with recursion: Assume the recursive call does the right thing, and then figure out how to turn that result into the overall answer you desire.

The Assignment

For this assignment we will use the website that I showed in class. You can submit answers to problems as often as you'd like. *You will only be graded on your last submission for each problem.*

Open a web browser and go to `http://camlback.cs.ucla.edu`. Click `Register` to create an account. **Make sure to provide your name and UID so we can give you a grade!** Then login to the site; make sure to choose the `cs131-f14-hw1` quiz. Then start the quiz; have fun! You can skip around among the problems. You can log in and out as many times as you want, and your work will be saved. You can also use the `ocamlScratchpad` on the web site (which I showed in class) to run your own tests on the various problems.

Recall the CS131 Academic Honesty Policy! You must say whom you discussed the assignment with, and also what other resources you used. For this assignment, provide this information by putting a comment with your solution to the first problem.