

COMS3101.004 - Perl - Homework 3

April 13, 2012

Due date: 04/18/2012 11.59pm EST

Downloads: markets.txt

Submission: Your submission should include two perl programs: file_list.pl & eat_healthy.pl

1 File listing (5)

Write a program `file_list.pl` to build an array of arrays - where each row corresponds to a file in the current directory and each column correspond to a particular attribute of that file. The Unix (works in mac OS X too) command `'ls -l'` lists the files in current directory in the *Long Format* form. The Long Format displays the following information for each file: file mode, number of links, owner name, group name, MAC label, number of bytes in the file, abbreviated month, day-of-month file was last modified, hour file last modified, minute file last modified, and the pathname. Use the back tick ``` operator to execute the unix shell command `'ls -l'` and obtain the results into an array. If you are using a Windows machine, you can use the corresponding windows shell command or use the Cunix machine to write this program. Please contact the instructor if you have trouble running your code on Cunix machines.

Refer to lec3.pdf page 36 to see how to get the results of a command execution into an array.

After building the array of arrays, print the 3rd field (which is the owner name) of 2nd row (assuming you have more than 1 files in current directory).

2 Let's eat healthy (20)

Download the file `markets.txt`, which contains geographic information for over 7000 farmers markets¹ in the US. The file is in a tabular form, where each line lists data for a farmers market and fields are separated by a single tab (tab-separated-value format). The fields are (in this order): state, name, address, city, zip, longitude, latitude. Your task is to write a tool that allows users to search for farmers markets

1. Write a subroutine that, given a filename, opens the file in the format described and reads in the data and returns a hash named `%market_hash`, which is a hash of hashes of arrays. The idea is to index the markets first at the state level and then at the city level. (Remember city name alone won't be unique — e.g. there are 4 cities in US, all named Albany (California, Georgia, Kentucky and New York)). Hence, the two levels of hashes. Other than that, it is very similar to the neighborhood => restaurant problem we saw in class. Within a city, there could be a list of markets (hence hash of hashes of *arrays*). Now, each market should be represented as a hash with keys-value pairs for name, address and zip. (Marks - 14)
2. Write a program that first reads in the data file once (using the function from part (1)), and then asks the user repeatedly (in a while loop until the user enters q) to enter a city and state separated by comma (e.g. Bronx, New York). For each request, the program lists all farmers markets for the requested city. A market should be printed in three lines — it's name in line 1, address in line 2 and city, state and zip (separated by commas) in line 3. Each market should be followed by an empty line. (Marks - 6)

¹source: <https://explore.data.gov/d/wfna-38ey>