Lab 1

I have provided an **unchangeable** cscd340Lab1.c and an **unchangeable** lab1.h file

Your task is to create lab1.c and write the following functions

FILE * openFile();

- Prompts the user for the name of the input file. Ensure the file exists and opens. If the file doesn't exist the user is reprompted. If the file does exist the file is opened and the FILE * is returned.

Address * fillArray(int * total, FILE * fin);

- Reads through the file and counts the number of lines. A sample file is provided.
- Dynamically creates an array of addresses of the exact size
- Fills that array using dynamic memory for each address and returns the filled array

int menu();

- Valid menu choices are:
  1) Print the array sorted by street
  2) Print the array sorted by city
  3) Print the array sorted by zip
  4) Quit

- You must verify range for the menu and ensure only a valid entry is made

void printArray(int total, Address * array);

- Prints the array in the following fashion and then a carriage return after the address

  Street
  City State Zip

void printStreetSortedArray(Address * array, int total);

- Sorts the array by the street and then calls printArray

void printCitySortedArray(Address * array, int total);

- Sorts the array by the city and then calls printArray

void printZipSortedArray(int total, Address * array);

- Sorts the array by the zip and then calls printArray

void cleanUp(Address * array, int total);

- Cleans all the dynamic memory per address
- Cleans the address array

void strip(char * array);

- A simple utility method that strips the carriage return. If you don't want to use this method just stub it out and ignore it

I have also provided:

- A Makefile
- Addresses.txt
- A valgrind run of my clean solution
- A valgrind run of a solution that allocates memory off by 1

There is nothing tricky here, no hidden agenda, just trying to get you to work with structures that contain pointers.

To Turn In

Submit a zip file

- Containing your C files and H file(s).
- My Makefile
- All input files
- A valgrind run to ensure you are not leaking memory named cscd340Lab1Val.txt

Your zip will be named your last name first letter of your first name lab1.zip
(Example: steinerslab1.zip)