CS 100 Lab Seven – Spring 2016

WARNING – Not properly submitting your files correctly (a zip file that contains your directory lab7 with four xxx.c files within it) will result in a penalty of 20 points.

Create a directory called **lab7** on your machine. Move into that directory. Complete the four tasks shown below.

1. Name this program **letters.c** – This program allocates a set of nodes (dynamically) and then connects these nodes in various combinations, printing each combination. Note: this program is very similar to the program on **cs-intro.ua.edu** at **/home/cordes/class/Mar21c.c**
    *   Declare a structure for a node that contains a character and a pointer to another node, a structure that can be used to build a linked list
    *   Allocate five of these nodes dynamically
    *   Assign the characters **E L V I S** to these five nodes and link them together appropriately
    *   Traverse this list, printing out the word **ELVIS**
    *   Rearrange the pointers so that you now create the word **LIVES**
    *   Traverse the list, printing out the word **LIVES**

For tasks #2 and #3 and #4, download **list.c** from **troll.cs.ua.edu/cs100/labs**

2. Name this program **count.c** – Take the program **list.c** and add a function **count**. This function should take one argument (a pointer to the first node in your linked list) and return the number of elements in the list (the size of the list).

3. Name this program **find.c** – Take the program **list.c** and add a function **find**. This function should take two arguments (a pointer to the first node in your linked list and a name to find). It returns a zero if the name does not exist in the list and a one if the name does exist in the list.

4. Name this program **last.c** – Take the program **list.c** and add a function **last**. This function should take one argument (a pointer to the first node in your linked list) and return the last name in the list. If there are no items in the list, then return NULL.

Submit your lab

First, on your local machine, bundle the files in your **lab7** directory into a single (compressed) file. To do this:
*   PC: Using Windows Explorer, right click on the **lab7** directory and select "Send To" and then "Compressed (zipped) folder"
*   Mac: Using Finder, use a secondary click on the **lab7** directory and then select "Compress *foldername*"

Once you have a zip file that contains your four lab7 programs, submit that file to Blackboard.

Attendance: We will circulate a roster sheet shortly after lab starts and again about half-way through the lab. Not being present to sign the roster sheet will result in a deduction of 25 points for each missed signature.