

Lab 12: C++ Tricks

Nathan Jarus

April 20, 2016

Introduction

This lab will have you use some C++ features and things from the STL. Do not forget to compile with `-std=c++11` if you are using a C++ 11 feature!

Problem 1: A better phonebook

Write a program that takes up to two command line arguments. The first argument is a filename for a telephone book (see `phonebook.txt` for an example). The second argument is a name to look up the number of; if no second argument is given, list the entire phonebook.

Hint: Use a `map<string, tuple<int,int,int> >` to store the phonebook. You can use `make_tuple()` to, well, make a tuple.

Problem 2: Smart Memory

Observe that `leak.cpp` leaks memory. Make two copies of this code, one where you fix the memory leaks using calls to `delete` and one where you fix the memory leaks by using smart pointers.

Note: you should check to make sure you've fixed all the memory leaks.

Hint: When using smart pointers, it may help to change `print_list` to take a `List` instead of a `List*`.

Epilogue

Please commit your code and push it to GitLab!