CSC 412 – Operating Systems

Lab Session 07, Fall 2019

Tuesday, Oct. 20th, Wednesday, Oct. 21st, and Thursday, Oct. 22nd, 2020

What This Lab Is About

This lab could be titled: "C++ vectors/lists meet structs," because this is what we are going to do.

0.1 Handout

For this lab, I give you a small initial program `lab06.c` that defines a `struct` data type, as well as a data file you are supposed to read from.

1 Task 1: Build a vector or list of structs

The handout for this lab reminds you of how to read data from a file. Instead of simply printing out the data, build a vector of structs and then iterate through your vector to print out the fields of the structs.

2 Task 1: Same thing with a list of structs

Instead of using a vector, use a list to store the struct that you read from the data file. Make sure to use a `const` iterator when you print out the content of your list.

3 Task 3: Partial list/vector

Let's say that we want to maintain a separate sublist (or sub-vector; your choice) of the one we built from our data file. For example, it is pretty common to store a list of "selected" structs that must undergo some special processing.

In this case, let's say that we want to build a list of all structs that have an even `m` field (granted, this is a completely artificial task. This is just to provide a simp[le selection criterion).

Iterating through your "selected" list, multiply the `x` field of all objects by a factor 10, then print again the list of all structs.

Note: Be careful that a list/vector only stores a *copy* of the object. If you modify a copy, the original will not be properly updated.