Computer Programming Homework 0

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January 23, 2023

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Chapter 1

Requirement

I recommend to use any Unix-Like OS (e.g. FreeBSD, MacOS, Linux) to finish this homework. On windows, you can use either Virtual Machine or WSL to install Linux over Windows.

This homework requires **google test** package. Google test is a unit test library on C/C++. It helps us build test system over this homework so that you can check if you write code correctly. It is avaliable on most of the operating system. If you use Ubuntu Linux, you can use command **sudo apt install libgtest-dev -y** to install **google test** package. As for those who're using other systems, you may need to find the commands yourselves then.

Chapter 2

Review of C

2.1 Problem 1: Linked List

Linked list is widely used in operating system kernel due to the high performance on insert and delete elements compare with other data structure like array. Linked list can be implemented from pointer, which we have learned in Computer Programming - I.

2.1.1 Requirement

In this problem, you're asked to implement Linked List of **int32_t** in C by using array. Because you haven't learned structure yet, I would like to see you using array to emulate the linking relationship. You have to modify all of the functions in **list.c** to comply with the requirement. There are many types of Linked List. In this problem, I use the definition in C++ std::list. Not all of the function in **std::list** is required. You only have to finish ones in **list.c**. Of course, you can add some auxiliary function to help you implement linked list.

After meeting the requirements above, you can run **make test** to test all of your codes. After passing all of the tests, you finish this problem.

2.2 Problem 2

Chapter 3

Preview of C++