

Computer Programming Homework 0

Sheng-Yi Hong

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Chapter 1

Requirement

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

This homework require **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 the correct code. It is available 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. Other system you need to find by yourself.

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, I want you to implement Linked List of **int32_t** in C by using pointer. Because you haven't learn structure, I want you to use 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 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 finishing the requirement, 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++

3.1 Problem 3

3.2 Problem 4