

Lab 05

Doubly & Circular Linked List

Cảm ơn thầy Trần Duy Quang đã cung cấp template cho môn học



Department of Software Engineering-FIT-VNU-HCMUS

1

Notes

Create a single solution/folder to store your source code in a week.

Then, create a project/sub-folder to store your source code of each assignment.

The source code in an assignment should have at least 3 files:

- A header file (.h): struct definition, function prototypes/definition.
- A source file (.cpp): function implementation.
- Another source file (.cpp): named YourID_Ex01.cpp, main function. Replace 01 by id of an assignment.

Make sure your source code was built correctly. Use many test cases to check your code before submitting to Moodle.

Name of your submission, for example: **18125001_W01_07.zip**

2

Content

In this lab, we will review the following topics:

- How to init, insert (head, middle, tail), delete (head, middle, tail) a doubly and circular linked list?

3 Assignments

A: 1 problems / assignments.

H: 3 problems / assignments. Individual Project Report is mandatory

3.1 Leetcode – Linked List Cycle

<https://leetcode.com/problems/linked-list-cycle/>

3.2 Leetcode – Reverse Linked List 2

<https://leetcode.com/problems/reverse-linked-list-ii/>

3.3 Leetcode – Intersection of Two Linked Lists

<https://leetcode.com/problems/intersection-of-two-linked-lists/>

3.4 BigNumber1 + BigNumber2 using doubly linked list

Input: 2 string contain two very very big big positive integer numbers.

String 1: "1234567890123456788990067688472384753872743875427847328473990352742"

String 2: "36254394742958743957340957348573409572075028758758827592735"

Suppose that, in C++, there are no integer data types that can contain these very big number.

Apply strategy in Lab 04, Assignment number to list, convert each of these numbers into a doubly linked list.

And remember when you were young child, start 1st grade, in the elementary school, how your teachers taught you to compute sum of 2 numbers.

Output: the sum of 2 numbers.

3.5 Individual Project Report

Write a short paragraph (at least 10 sentences) to describe 1 task you have completed in the project in this week.

A task must be done only by 1 member.

Your report should answer the following questions:

What is the name of your task?

Write a short description about this task.

What is the start date that you began to work on this task and the end date that you finished this task?

What is the number of working hours you spent for this task?

Screenshot the commit in your Github/Bitbucket/GitLab project.