CS 2110 Timed Lab 4

Due Date and Time

Day: Monday, November 24th, 2014
Time: Before the end of you lab section

Policy

Submission

TURN IN THIS ASSIGNMENT ELECTRONICALLY USING T-SQUARE. SUBMISSIONS WHICH ARE LATE WILL NOT BE ACCEPTED. IN ADDITION IF YOU FORGET TO HIT THE SUBMIT BUTTON YOU WILL GET A ZERO.

Questions

If you are unsure of what questions mean, the TA's will clarify them to the best of their ability. In the end you are solely responsible for what you submit. We will not be able to answer any questions about how to reach a solution to the lab questions.

What's Allowed

- The assignment files
- Your previous Homework and Lab submissions
- Your mind
- Blank paper for scratch work

What's Not Allowed

- The Internet (except the T-Square Assignment page to submit)
- Any resource on T-Square that is not given in the assignment.
- Dropbox (if your harddrive crashes we will let you retake it!)
- Notes on paper or saved on your computer.
- Textbook
- Email
- IM
- Contact in any form with any other person besides TA's
- If you have any questions on what you may not use then assume you can't use it and ask a TA.

Other Restrictions

1. You may not leave the classroom until we have verified that you have submitted the lab. If you leave the classroom without submitting you will receive a zero.
2. **YOU MUST SUBMIT BY THE END OF YOUR LAB PERIOD**. Bear in mind that the clock on your computer may be a few minutes slow. You are supposed to have a full class period to work, and

we are letting you use the 10 minutes between classes to make sure you have submitted your work. **WE WILL NOT ACCEPT LATE SUBMISSIONS**, be they 1 second or 1 hour late.

3. The timed lab has been configured to accept one submission. If you accidentally submit or submit the wrong version, call one of the TA's and we will reopen submission for you. But PLEASE PLEASE PLEASE submit the right thing the first time. The TA's get busy at the end of the lab making sure everyone submitted, and it's tough doing that AND re-opening submissions for 5 students. Yes, it does happen. Don't let it happen to you.

Violations

Failure to follow these rules will be in violation of the Georgia Tech Honor Code. **AND YOU WILL RECIEVE A ZERO** and you will be reported to Bill and the Office of Student Integrity.
We take cheating and using of unauthorized resources **VERY SERIOUSLY** and you will be in serious trouble if you are caught.

Remember

1. There is a lot of partial credit given and most of it is following the directions.
2. We allow you to use your homework assignment and previous labs.
3. Please don’t get stressed out during a timed lab. You have plenty of time however use your time effectively
4. Remember don’t get stressed partial credit will be given. Do the best you can!
5. If you don’t know something at least **TRY** do not just walk out of the lab or submit an empty file Partial credit!
6. Remember what you can and can’t use if you don’t know then don’t use it and ask a TA if you can use it. If we catch you with unauthorized resources we will give you a zero, so better to be safe than sorry.

The Assignment

In today's timed lab, you will be making an integer linked list in C. It must conform to the following requirements:

1. The list must be singly linked, i.e. each node only points to the next node in the list.

2. The list must have head and tail pointers

3. The tail of the list must have its next pointer point to NULL

4. The list must only hold integer values as data. This means you will be able to store the integer in the node without having to call malloc/free to allocate space for the integer.

5. The code must implement add node, delete node, create node, create list and get node operations, in addition to a function for printing a node in a nicely-formatted way.

6. The nodes in the list must remain **SORTED** in **DESCENDING** order at all times. This means when you insert a number, you have to find the correct place in the list to put that number.

An example of a linked list sorted in descending order is 9 → 5 → 3 → 2 → -10. In the example, the node containing 9 is the head node and the node containing -10 is the tail node. Inserting a 4 into the list would produce 9 → 5 → 4 → 3 → 2 → -10.

7. When adding a duplicate value to the linked list, the new node containing the duplicate value can be added before or after the old node containing the duplicate value. Ordering between nodes that contain the same value does not matter.

Hints

- To both compile and run the code type "**make all**" into the terminal.
- Note that in this timed lab you will NOT be using any function pointers. You don't need to worry about that.
- Your add/remove operations will operate on the nodes of the list directly.
- Also, you will need to use malloc/free for the nodes, but remember, the data is just ints
- Do not change the definitions in list.h or it will not compile for us!
- Non-compiling submission will receive a **ZERO**. Even if all you are missing is a semicolon you will get a **ZERO**. If you do not submit all of your files it will not compile for us and you will get a **ZERO**. Be sure to redownload your submission from T-Square after you submit it to make sure that it compiles.

Deliverables

1) list.c
2) list.h
3) main.c
4) Makefile

You may submit only the files listed above. We will not accept any internet links we want the files above and only these files! **Failure to submit any of the files above will result in a zero. Your submission will not compile without all of the above files and non compiling submissions will receive a zero.**

Check over your submission after you submit it. If you submit the wrong file and leave the lab I will not be happy and we will grade what you submit so please check over what you submitted after you submit it! Check your email afterward to see if you get an email from T-Square. *Note: I will have to give zeroes to those who fail to submit the correct file, so please don't let this happen to you! I really don't like doing that!*

Have fun and good luck