CS 2110 Timed Lab 4

Due Date and Time

Day: Wednesday July 19 2017

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. EMAIL SUBMISSIONS WILL NOT BE ACCEPTED UNDER ANY CIRCUMSTANCES! 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. We will not be able to answer any questions about how to reach a solution to the timed lab questions. You should know how by now!

What's Allowed

- The assignment files
- Your previous homework and lab submissions
- Your mind
- Blank paper for scratch work
- man pages that opened from the terminal (not allowed to be opened in web browser)

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.
  - Textbook or notes on paper or saved on your computer.
  - Dropbox (If your harddrive crashes we will let you retake it).
  - Email/IM
  - Contact in any form with any other person besides TAs
  - If you have any questions on what you may not use then assume you can't use it and ask a TA.

Other Restrictions

- 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.

1. **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.

2. The timed lab has been configured to accept one submission. If you accidentally submit or submit the wrong version flag one of the TAs and we will reopen submission for 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 Dan 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. We allow you to use your homework assignment.

2. Please don't get stressed out during a timed lab. You have plenty of time; however, use your time effectively

3. Again, remember: Don't get stressed. Partial credit will be given for things you have done correctly. Do the best you can!

4. If you don't know something at least **TRY.** Do not just walk out of the lab or submit an empty file. Partial credit!

5. 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

OBJECTIVE

In today's timed lab you will be implementing an arraylist. This is implemented via a struct that contains a pointer to a backing buffer. The backing buffer will be doubled everytime you attempt to append an element and there is not enough space. This arraylist only supports holding ints and is not generic. There are 3 functions that you must implement **create_arraylist**, **free_arraylist**, and **append_arraylist**. The details of how to implement these functions are detailed in the C file. If anything is unclear ask a TA for clarification.

RESTRICTIONS

- Your code must not crash, run infinitely, or produce any memory leaks.
- Your code must check and handle malloc failures properly and return the correct value
- Your code must compile with the Makefile that we have provided! If it does not compile with our Makefile you will receive a 0.

RUNNING YOUR CODE

We have provided a makefile for this assignment that will build your project. Your code must compile with our makefile. Here are the commands you should be using with this makefile:

- To run the tests in test.c: **make run-test**
- To debug your code using gdb: **make run-gdb**
- To run your code with valgrind: **make run-valgrind**

HINTS

- Note that in this timed lab you will NOT be using any function pointers. You don't need to worry about that.
- Make sure that you test your list thoroughly in your test.c file. Our test cases will be not exhaustive.
- You can print a string with: printf("%s\n", string);

DELIVERABLES

The file **tl4_submission.tar.gz**, created by the command **make submit**

Warning

Please double check over your submission after you submit it please download what you submit and check over it to ensure you have submitted the correct file. Failure to do so will result in an automatic zero (in the case of an empty file) on the timed lab.

You may submit only the files listed above. We will not accept any internet

links, we want the files above and only these files! 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! Download your submission from t-square to rerun and make sure it is correct.

Have fun and good luck!