

ECE 361 Homework #4 – Stack ADT, Reverse Polish Notation calculator, and iom361 revisited

This assignment will be worth 100 points and is due by 10:00 PM on Sunday 19-Nov-2023

No late assignments accepted after 8:00 AM on Wed, 22-Nov-2023 - I am planning to review the solutions in class on Wed

After completing this assignment students should have:

- Gained experience developing and using reusable ADT's (Abstract Data Types)
- Developed an ADT for a stack
- Developed and tested a stack-based application using the Stack ADT you created
- Continued your work on programming embedded systems

Introduction

We are using the Homework #4 Canvas dropbox for this assignment. Source code for your programming solutions should have a .c extension. Header files should have a .h extension. Your transcripts (bash terminal log files) should be submitted as text files (.txt). Name all of the files in the submission with descriptive names. Be sure your code is organized well, uses meaningful variable names, and includes comments that aid in understanding the code.

NOTE: Each of your console log files should identify you as the owner of the transcript and list the current working directory for your transcript. This can be done by clearing the screen (clear to the bash prompt) and executing a whoami command followed by a pwd and by including code in your application that starts with a greeting message and displays the current working directory. See the code in previous assignments for the snippet of code to do this.

NOTES:

- If you decide to leverage (borrow) existing code for your solutions other than the code we provided please acknowledge the source. We know how to use Google, too, so copying existing code from the web without acknowledging the source will lead to serious consequences if you are caught cheating.
- We hope that you will complete these programs on your own without relying on automated code generators. The primary goal for this course is to improve your C programming skills so you are equipped with the skills, knowledge, and experience to excel in your job and career choice. Relying on AI to complete the assignment will not contribute towards that goal.

- You may collaborate with your classmates in the design of the application, but you are all expected to submit original work. You should do, and submit, your own work. There is a difference between collaboration and copying - you don't want to be caught doing the latter since that could affect both your final grade and the grade of the student you copied from.
- Please post questions on the assignment to the Homework #4 discussion forum on Canvas. Doing so helps your fellow students understand the assignment, makes it easier for Emily and I to keep up with questions, and avoids the risk that your question will slip out of our view. You may post anonymously in the forum.

Assignment:

Not much to say here. The assignment is described in [ece361f23_hw4.pdf](#). - Problem 1 asks you to build your own Linked List-based Stack ADT and API. Problem 2 asks you to use your Stack ADT in an application. Problem 3 revisits iom361 programming, this time making use of the temperature/humidity sensor. The problem asks you to make use of a sorted array.