

Lab 9

Each lab will begin with a recap of last lab and a brief demonstration by the TAs for the core concepts examined in this lab. As such, this document will not serve to tell you everything the TAs will in the demo. It is highly encouraged that you ask questions and take notes. In order to get credit for the lab, you need to be checked off by the end of lab. For non-zero labs, you can earn a maximum of 3 points for lab work completed outside of lab time, but you must finish the lab before the next lab. For extenuating circumstance, contact your lab TAs and Instructor.

(7 pts) Mapping an Addition Function to a Data Structure

Create a program which will apply an addition operation of a user provided value to every cell of a two-dimensional array.

You must write your program in C. No memory leaks are allowed.

Create a two-dimensional array of integers which is randomly populated with values between 1 and 50. Establish the height and width of the area based on user input. Error handle this value to make sure it is a valid number greater than or equal to zero and no larger than 10. Print the array. Ask the user what value they would like to add to the array. Error handle this value to make sure it is a valid number greater than or equal to zero. Add this number to each element of the array. Print the array. End the program and make sure all memory has been freed. Make sure your program is decomposed into appropriate functions which could be reused on other data structures.

Remember to compile with gcc.

(3 pts) Work on the Assignment 5 Design

Show your TA some work towards your Assignment 5 design. Draw pictures of how the nodes are swapped, inserted, and deleted. Write pseudocode to describe the actions occurring in the drawing.