**Name:**

**Advanced Programming in C++**

**Lab Exercise 2/8/2024**

In this exercise, you will write several programs that will demonstrate some of the basic features of the C++ programming language. When you have completed your programs, you are to submit your documented source code as well as a sample output and attach it to this sheet.

1. Write a program to calculate the average of a series of test scores, where the lowest score in the series is dropped. It should use the following function prototypes:

void getValues(int &, int &, int &, int &, int &);

int findLowest(int, int, int, int, int);

double calcAverage(int, int, int, int, int);

The structure of the program should be as follows:

main

calcAverage

getValues

findLowest

1. Write a program that calculates the average number of days a company’s employees are absent. The program should have the following functions:

* A function that asks the user for the number of employees in the company. The function should return an int.
* A function that accepts on argument: the number of employees in the company. The function should ask the user to enter the number of days each employee missed during the past year. The number of days should be returned as an int.
* A function that takes two arguments: the number of employees in the company and the total number of days absent for all employees during the year. The function should return, as a double, the average number of days absent.

1. A painting company has determined that for every 115 square feet of wall space, one gallon of paint and 8 hours of labor will be required. The company charges $27 per hour for labor. Write a modular program that allows the user to enter the number of rooms that are to be painted and the price of the paint per gallon. It should also allow the user to enter the dimension (length and width) of each room (assume 8 foot ceilings). The program should display the following:
   * The number of gallons of paint required
   * The hours of labor required
   * The cost of the paint
   * The labor charges
   * The total cost of the paint job

**For each of the above programs, print out your source code and turn it in attached to this sheet. For problems 2 and 3, create a structure diagram similar to the example given in problem 1.**