

Assignment #3 (40 points; due Tuesday, 10/10/2023, at 11:59:00 P.M.)

For all Programs:

For each program make sure and include the following comments at the top (do this on all homework assignments from now on – this is required):

```
//Your Name  
//CS 1, Section #XYZ (where XYZ is your section)  
//Assignment #Q, Problem #R  
//Summary of the program
```

Then, within the program, you will add pseudocode as appropriate to describe the steps of the program. This is in order to get in the habit of writing pseudocode and documenting your code. PSEUDOCODE IS REQUIRED FOR ALL PROGRAMS. You will submit your C++ code to Canvas. It must be received by 11:59 P.M. on the due date.

For this homework you have two programs so you will be submitting 2 program files and a Word document addressing errors in 2 different programs. The Word document file name will be similar to the C++ files and should look something like this:

EAmbrosio-CS1-112-A3.docx

These programs and errors address the basics from Chapter 5.

Pennies for Pay

1. (14 points) Write a C++ program that calculates how much a person would earn over a period of time if his or her salary is one penny the first day and two pennies the second day, and continues to double each day.

The program should ask the user for the number of days. Make sure that you do not accept a number lower than 1 for the number of days worked and that the maximum number of days accepted is 50. Display a table showing how much the salary was for each day and show the total pay at the end of the period. The total pay should be displayed in a dollar and cents amount, not the number of pennies.

The Greatest, Least, and Average of These

2. (14 points) Write a C++ program with a loop that lets the user enter a series of integers. The user should enter -9999 to signal the end of the series. After all the

numbers have been entered, the program should display the largest and smallest numbers entered, as well as the average of all the numbers entered.

Assume the initial value of the smallest number and the largest number is -9999 and the initial average is 0.0. Make sure the average prints out to two decimal places.

There's Something Wrong With These Programs!

For the following two programs, look for what errors are in each of them. (NOTE: There may be multiple errors.) Describe what you have found, why it is a problem, and what code you would add, remove, or rearrange to fix them.

3. (8 points) This program averages a set of numbers.

```
#include <iostream>
using namespace std;

int main ()
{
    int numCount, total;
    double average;

    cout << "How many numbers do you want to average? ";
    cin >> numCount;

    for (int count = 0; count < numCount; count++)
    {
        int num;
        cout << "Enter a number: ";
        cin >> num;
        total += num;
        count++;
    }
    average = total / numCount;

    cout << "The average is << average << endl;

    return 0;
}
```

4. (4 points) This program displays the sum of the numbers 1 - 100.

```
#include <iostream>
using namespace std;

int main ()
{
    int count = 1, total;

    while (count <= 100)
    {
        total += count;
    }

    cout << "The sum of the numbers 1-100 is ";
    cout << total << endl;

    return 0;
}
```