**WEEK 10 – Review Questions and**

**Programming Challenges Handout**

**Chapter: 5**

**Review Questions:**

**Predict the Output**

1. **What will each of the following program segments display?**

int x = 1;

while (x < 10);

x++;

cout << x;

2

(while loop not setup correctly)

1. for (int count = 1; count <= 10; count++)

{ cout << ++count << " "; // This is a bad thing to do!

}

2 4 6 8 10

**Find the Errors**

1. **Each of the program segments in this section has errors. Find as many as you can.**

**A)**

int num1 = 0, num2 = 10, result;

num1++;

result = ++(num1 + num2);

cout << num1 << " " << num2 << " " << result;

**FIXED:**

int num1 = 0, num2 = 10, result;

num1++;

result = 1 + (num1 + num2);

cout << num1 << " " << num2 << " " << result;

**Output:**

1 10 12

**B)**

// This code should add two user-entered numbers.

int num1, num2;

char again;

while ((again == 'y') || (again == 'Y'))

cout << "Enter two numbers: ";

cin >> num1 >> num2;

cout << "Their sum is << (num1 + num2) << endl;

cout << "Do you want to do this again? ";

cin >> again;

**Fixed:**

// This code should add two user-entered numbers.

int num1, num2;

char again = 'y';

while ((again == 'y') || (again == 'Y')){

cout << "Enter two numbers: ";

cin >> num1 >> num2;

cout << "Their sum is " << (num1 + num2) << endl;

cout << "Do you want to do this again?(y or n) ";

cin >> again;

}

**C)**

// This code should display the sum of two numbers.

int choice, num1, num2;

do

{

cout << "Enter a number: ";

cin >> num1;

cout << "Enter another number: ";

cin >> num2;

cout << "Their sum is " << (num1 + num2) << endl;

cout << "Do you want to do this again?\n";

cout << "1 = yes, 0 = no\n";

cin >> choice;

} while (choice = 1)

**Fixed:**

// This code should display the sum of two numbers.

int choice, num1, num2;

do

{

cout << "Enter a number: ";

cin >> num1;

cout << "Enter another number: ";

cin >> num2;

cout << "Their sum is " << (num1 + num2) << endl;

cout << "Do you want to do this again?\n";

cout << "1 = yes, 0 = no\n";

cin >> choice;

} while (choice == 1);

**D)**

// This code should display the sum of the numbers 1 - 100.

int count = 1, total;

while (count <= 100)

total += count;

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

cout << total << endl;

**Fixed:**

// This code should display the sum of the numbers 1 - 100.

int count = 1, total;

while (count <= 100){

total += count++;

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

cout << total << endl;

}

**Programming Challenges:**

1. **Pennies for Pay**

Write a program that calculates how much a person earns in a month if the salary is one penny the first day, two pennies the second day, four pennies the third day, and so on with the daily pay doubling each day the employee works. The program should ask the user for the number of days the employee worked during the month, validate that it is between 1 and 31, and then display a table showing how much the salary was for each day worked, as well as the total pay earned for the month. The output should be displayed in dollars with two decimal points, not in pennies.

1. **The Greatest and Least of These**

Write a program with a loop that lets the user enter a series of integers, followed by -99 to signal the end of the series. After all the numbers have been entered, the program should display the largest and smallest numbers entered.

**Chapter: 6 – 10 points Extra Credit (Optional)**

**Lowest Score Drop**

Write a program that calculates the average of a group of test scores, where the lowest score in the group is dropped.

**It should use the following functions:**

* **void getScore()** should ask the user for a test score, store it in a reference

parameter variable, and validate that it is not lower than 0 or higher than 100. This function should be called by main once for each of the five scores to be entered.

* **void calcAverage()** should calculate and display the average of the four highest

scores. This function should be called just once by main and should be passed the five scores.

* **int findLowest()** should find and return the lowest of the five scores passed to it. It should be called by calcAverage, which uses the function to determine which one of the five scores to drop.