HW 3

ELEC 3150 – Object Oriented Programming (Fall 2023)

Nick Cebula

Question 1:

Main:

```
    int score = 0;
    while (score != -1) {
        int max = 0;
        int min = 0;
        float average = 0;
        cout << "Enter test score (1-100): ";
        cin >> score;
        average=avg_test(score);
        cout << "Average is: " << (float)average << endl;
        max = max_test(score);
        cout << "Max score is: " << max << endl;
        min = min_test(score);
        cout << "Min score is: " << min << endl;
    }
    return 0;
}
```

Mycode.cpp:

```
#include <iostream>
using std::cout;
using std::cin;
using std::endl;


int max_test(int score) {
    static int max = 0;
        if (score > max) {
            max = score;
        }
    return max;
}

float avg_test(int score) {
    static int count = 0;
    static int total = total + score;
    count++;
    return ((float)total / count);
}

int min_test(int score) {
    static int min = 100;
        if (score < min) {
            min = score;
        }
    return min;
}
```

Q1 Results:

```
Enter test score (1-100): 100
Average is: 100
Max score is: 100
Min score is: 100
Enter test score (1-100): 50
Average is: 50
Max score is: 100
Min score is: 50
Enter test score (1-100): 29
Average is: 33.3333
Max score is: 100
Min score is: 29
Enter test score (1-100): -1
Average is: 25
Max score is: 100
Min score is: -1
```

Q2:

Function:

```
void swapArrays(int arr1[], int arr2[], int size1, int size2) {
    int temp;
    int size;
    if (size1 <= size2) {
        size = size1;
    }
    else {
        size = size2;
    }
    for (int i = 0; i < size; i++) {
        temp = arr1[i];
        arr1[i] = arr2[i];
        arr2[i] = temp;
    }
}
```

Main:

```
int main() {
    int array1[5] = { 1, 2, 3, 4, 5 };
    int array2[3] = { 9, 8, 7};
    int size1 = sizeof(array1)/sizeof(int);
    int size2 = sizeof(array2)/sizeof(int);
    cout << "Array1: ";
    for (int i = 0; i < size1; i++) {
        cout << array1[i] << " ";
    }
    cout << endl;
    cout << "Array2: ";
    for (int i = 0; i < size2; i++) {
        cout << array2[i] << " ";
    }
    cout << endl;
    swapArrays(array1, array2, size1, size2);
    cout << "array1 after swap: ";
    for (int i = 0; i < size1; i++) {
        cout << array1[i] << " ";
    }
    cout << endl;
    cout << "arr2 after swap: ";
    for (int i = 0; i < size2; i++) {
        cout << array2[i] << " ";
    }
    cout << endl;
    return 0;
}
```

Result:

```
Array1: 1 2 3 4 5
Array2: 9 8 7
array1 after swap: 9 8 7 4 5
arr2 after swap: 1 2 3
```

Q3:

Function:

```
float total_price(int baseprice, int quantity = 1, float tax=1.07){
    float total = (baseprice * (float)tax * quantity);
    return (float)total;
}
```

Main:

```
    int cost = 0;
    int quantity = 0;
    cout << "Enter cost: ";
    cin >> cost;
    float price = total_price(cost);
    cout << "total cost is: " << (float)price << endl;
    cout << "Enter quantity: ";
    cin >> quantity;
    float price2 = total_price(cost, quantity);
    cout << "total cost is: " << (float)price2 << endl;


    return 0;
}
```

Result:

```
Enter cost: 50
total cost is: 53.5
Enter quantity: 2
total cost is: 107
```