Homework 1

Due: Wednesday Jan 29 at 23:59pm

Instruction: Please use either Visual C++ or g++ compiler. Please hand it in through Canvas. If necessary, please include a short readme.txt file. For Visual C++, please zip the whole directory of the project (exclude the Debug directory) and submit the zip file.

Zero point if your code cannot be compiled

Zero point if you hand it in late

Hint1: You can download the source code examples from the textbooks webpage that is on the syllabus.

Hint2: google is a friend. If you search how to use C++ functions, compiling errors, and even tutorials.

Five questions total. All the questions are in the required textbook:

1. (30%) Write a program that inputs three integers from the keyboard and prints the sum, average, product, smallest and largest of these numbers. The screen dialog should appear as follows:

> Input three different integers: 13 27 14
> Sum is 54
> Average is 18
> Product is 4914
> Smallest is 13
> Largest is 27

*Please use cin and cout

* It is the same as problem 2.19 in the required textbook

2. (30%) (Modifying Class GradeBook) Modify class GradeBook (Fig2. 3.11-3.12) as follows:
   a. Include a second string data member that represents the course instructor's name.
   b. Provide a set function to change the instructor's name and a get function to retrieve it.
   c. Modify the constructor to specify course name and instructor name parameters.
   d. Modify function displayMessage to output the welcome message and course name, then the string "This course is presented by:" followed by the instructor's name.

   Use your modified class in a test program that demonstrates the class's new capabilities.

*It is the same as problem 3.11 in the required textbook

3. (10%) Question 2.30

4. (30% Question 3.12

You should have three files:

Account.h, Account.cpp, and AccountTest.cpp

Or

Account.h, Account.cc, and AccountTest.cc

You AccountTest.cc or cpp file is given:

```cpp
#include <iostream>
#include "Account.h"
using namespace std;
// function main begins program execution
int main()
{
  Account account1( 50 ); // create Account object
  Account account2( 25 ); // create Account object

  // display initial balance of each object
  cout << "account1 balance: $" << account1.getBalance() << endl;
  cout << "account2 balance: $" << account2.getBalance() << endl;

  int withdrawalAmount; // stores withdrawal amount read from user
```

```cpp
      cout << "\nEnter withdrawal amount for account1: "; // prompt

   cin >> withdrawalAmount; // obtain user input

   cout << "\nattempting to subtract " << withdrawalAmount

      << " from account1 balance\n\n";

   account1.debit( withdrawalAmount ); // try to subtract from account1

   // display balances

   cout << "account1 balance: $" << account1.getBalance() << endl;

   cout << "account2 balance: $" << account2.getBalance() << endl;

   cout << "\nEnter withdrawal amount for account2: "; // prompt

   cin >> withdrawalAmount; // obtain user input

   cout << "\nattempting to subtract " << withdrawalAmount

      << " from account2 balance\n\n";

   account2.debit( withdrawalAmount ); // try to subtract from account2

   // display balances

   cout << "account1 balance: $" << account1.getBalance() << endl;

   cout << "account2 balance: $" << account2.getBalance() << endl;
} // end main
```

5. (10% Extra points) Question 3.17