**BCS 345 Lab – Exceptions**

***Overview***

Write a program that uses exceptions. Setup a program that respectively checks for appropriate exceptions given a particular operation. Overall, the program should read in some data from a file, do something to that data and then write output to another file.

***Part 1***

Setup the input file

First create an input file of data. The file should have a few lines of data. Each line of data should contain two integers separated by spaces. Make sure that at least one of the lines has a 0 as the second number.

***Part 2***

Write the main program

Write a program that performs division on numbers from a file. Do the following:

1. The program should open the input file that you created in part 1.
2. Open a file for output.
3. Setup a loop that will read all the data from the file.
4. Inside the loop, read in a line of data (as two integers) and perform a division where the first number is being divided by the second number.
5. Inside the loop, write the result to the output file.

All the code inside the loop should be checking for exceptions. You should catch the following specific types of exceptions: Dividing by 0, wrong type of input data, cannot find a file, using a null pointer.

***Part 3***

Update the program so that it uses a new exception type that you define.

This program should contain two classes: **InputData** and **SetMethodException**.

The **SetMethodException** class will be a user-defined exception. This class should be derived from an appropriate base class. Hint: SetMethodException is going to be used as an exception.

The **InputData** class should have one member variable called data (int type for this variable). There should be get and set methods for the member variable. The set method should check the new value for the variable before it actually sets the member variable. If the new value is less than 0 then do NOT set the value and ***create and throw a SetMethodException***.

Inside of main create an instance of **InputData** and call set the set method on it. Make sure there is code to ***catch the SetMethodException*** that is thrown by the set method of **InputData**.