Lab Assignment 8

Kevin Burton

100228943

CPSC1150 - Section 1

Instructor: Hossein Darbandi

Exercise Title: Adding Large Numbers

Date submitted:July 7, 2014

Department: CPSC

**Program Adding Large Numbers Lab**

File Name: Lab00.java

Purpose: To add to very large integer numbers together.

Input: Two integers between 1 and 30 characters.

Output: The two input numbers as well as both of them added together formatted nicely.

Technical Information:

Compiler: Java SDK 1.7

Computer: Intel Celeron 2955U 1.4GHz, 2.00 GB of RAM

Language: Java

Source Code:

Attached

Program Logic (Pseudocode)

(definitions)

* 1. Input1 ← array of integers passed in from the user.
  2. Input2 ← array of integers passed in from the user.
     1. *Inputs are done in the form (30 digits long):*
     2. *0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 2, 3, 4, 5*
  3. Ans ← 31 digit array of integers.

START

1. Carry ← 0
2. For each number in range (length(input1)) - 1, 0) (Iterator = x)
   1. Ans[x + 1] ← remainder ((input1[x] + input2[x] + carry) / 10)
   2. If (input1[x] + input2[x] + carry) >= 10
      1. Carry ← 1
   3. Else
      1. Carry ← 0
3. If (input1[0] + input2[0] + carry >= 10
   1. Ans[0] = 1
4. Return Ans

END

**Test Cases:**

Test Case 1:

Please enter an integer to be added: 123

Please enter an integer to be added: 567

123

+ 567

-------------------------------

690

Test Case 2:

Please enter an integer to be added: 398560809804589604568945

Please enter an integer to be added: 293648273458

398560809804589604568945

+ 293648273458

-------------------------------

398560809804883252842403

Test Case 3:

Please enter an integer to be added: 999999999999999999999999999999

Please enter an integer to be added: 999999999999999999999999999999

999999999999999999999999999999

+999999999999999999999999999999

-------------------------------

1999999999999999999999999999998

Test Case 4:

Please enter an integer to be added: 12354867

Please enter an integer to be added: A

Invalid character 'A'.