Object-Oriented Programming Language

Homework Assignment No. 1

Due 09:00 pm, Monday September 17, 2018
Late submission within 24 hours: score*0.9;
Late submission before post of solution: score*0.8 (the solution will usually be posted within a week); no late submission after the post of solution)

(Total 40%)

1. (20%) Read a few of non-negative integers from standard input, use a negative integer to signify the end of inputs and print the sum of these non-negative integers. Below is a sample run

```
Enter a squence of numbers to be summed: 1 3 4 1 6 2 -3
Sum is: 17
```

2. (20%) Do you remember there is something called the Fibonacci numbers? Basically, the sequence of numbers has a recursive relationship:

$$F_n = F_{n-1} + F_{n-2}, \text{ when } n > 2.$$

The base cases are:
$$F_0 = 0, \ F_1 = 1, \text{ and } F_2 = 1.$$

As a result, the Fibonacci sequence for $n = 0,1,2,3,4,5,6 \ldots$ is as follows:

$$0, 1, 1, 2, 3, 5, 8\ldots$$

Please ask the user for the n value, and then output the corresponding Fibonacci number. In this practice, we do not consider the negative value of n. If such input is given from the user, please just return -1. The following are some example runs of the program.

Object-Oriented Programming Language

```
[$g++ fibo.cpp
[$./a.out
Please input the n number: -10
The Fibonacci number is: -1
[$./a.out
Please input the n number: 0
The Fibonacci number is: 0
[$./a.out
Please input the n number: 1
The Fibonacci number is: 1
[$./a.out
Please input the n number: 2
The Fibonacci number is: 1
[$./a.out
Please input the n number: 3
The Fibonacci number is: 2
[$./a.out
Please input the n number: 6
The Fibonacci number is: 8
[$./a.out
Please input the n number: 10
The Fibonacci number is: 55
[$./a.out
Please input the n number: 15
The Fibonacci number is: 610
$
```

HW Submission Procedure:

1. You should put your source codes including the header, if any, and cpp files, and the input/output data into one folder. Then zip it and submit it through CEIBA.

2. Please use your student id to name the zip file (e.g., b06501020-HW1.zip). 將所有檔案及資料夾收納在以學號命名的 zip 壓縮檔中。(例如：b06501020-HW1.zip)

3. Submit your HW directly through the course website.
    請直接透過課程網站繳交作業。

已上傳檔案

選擇檔案　b98501020-HW1.zip　　確定並送出

HW Grading Policy:

1. You should consider about exception handling, e.g. error input, file opening fail, etc.
    請注意所有例外狀況的處理，例如：錯誤的符號字串輸入、檔案開啟失敗等。
2. The coding style includes your output format.

輸出資料的格式將納入格式評分。

3. If your code is not compilable on the server or classroom machines, your score in this problem is zero (including coding style).
   若程式無法編譯，則該題以零分計算。(包含格式分數)

4. Your program will be tested with other input data, not the same as provided samples.
   除了題目所提供的範例測試資料以外，作業程式碼將以額外的測試資料進行測試。

5. If tricky situations occur, the grade depends on Prof. Chen or TA's judgment.
   假如有特殊情況發生，則依據陳俊杉教授以及助教們的判斷給分。

- Coding Style (20%): 編碼格式分數
    1. format
       整體形式與輸出資料的格式
    2. comments
       註解
    3. readability
       可讀性
    4. variables naming
       變數命名方式
    5. typesetting
       型別設定

- Functionality (80%): 功能性分數
    1. run-time performance:
       執行時的表現
        1) samples not passed -> x
           範例測資錯誤 => 此部分零分
        2) samples passed but some tests failed -> partial
           範例測資通過但是部分測資失敗 => 部份給分
        3) samples and tests all passed
           範例測資與所有測資通過 => 此部分滿分
    3. excellent method++
       綜合以上，又以能展現解決問題的巧思尤佳。