DCP1203 HW5

10/10

Outline

- Announcements
- HW4 Explanation

Announcements

Announcements

- Computer-based exam on 10/17
  - Range: HW1~HW4
  - Homework remains(HW5)
  - Score of HW5 will be added directly to your exam grade(100 at max)
- Class quiz on 10/18

HW4 Explanation

Problem 1

- Please write a program that calculates the n^{th} Fibonacci number. The range of number we enter will be ***3~90***. Please ***use the following series*** in this problem: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55…
  (Fibonacci number: n_1, n_2, n_3, n_4,..., where $n_1+n_2=n_3$, $n_2+n_3=n_4$, etc.)

```
Enter a positive integer ( 3 - 90 ): 15

1 1 2 3 5 8 13 21 34 55 89 144 233 377 610
```

Problem 2

- The factorial of a nonnegative integer n is written $n!$ and is defined as follows:
  - $n! = n \cdot (n - 1) \cdot (n - 2) \cdot \ldots \cdot 1$ (for values of n greater than 1)
  - $n! = 1$ (for $n = 0$ or $n = 1$).

  For example, $5! = 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$, which is 120. Write a program that ***reads a nonnegative integer*** and ***computes and prints its factorial***. The maximum number we enter will be 20.

```
Enter a positive Integer: 20
20!=2432902008176640000
```

Problem 3

- An online retailer sells ***5 different products*** whose retail prices are shown in the following table:

Number	1	2	3	4	5
Price($)	2.98	4.50	9.98	4.49	6.87

Write a program that reads a series of pairs of numbers comprise ***product number*** and ***quantity*** sold for ***1 day***. These 2 numbers are separated ***by a single space***. The series ***ends with a single 0***.Your program should calculate and display the ***total retail value*** of all products sold for ***1 week***

Problem 3

```
Please, enter the product number and the quantity sold out for one day (end with 0) :
2 3
5 2
0
The total retail value of all products sold for one week : 190.68
```

Problem 4

- Write a program to sort ***10 numbers*** you type. The maximum number we enter will be 100. Please separate each number with ***2 spaces.***

```
Enter ten positive integers :  41  17  34  0  19  24  28
8  12  14

The result:  0  8  12  14  17  19  24  28  34  41
```

Problem 5

- Write a program that calculates and prints the ***average of positive integers entered (after 2 decimal places)***. Assume the ***last value is 0***. Please output the average of all the values preceding 0. There ***won't be limitation*** on the length of sequence we enter.

```
Please enter several positive integers (end with 0): 10 11 12 0
The average is 11.00
請按任意鍵繼續 . . .
```

Problem 6

- Write a program that ***finds the smallest and the largest*** of several positive integers. If the entered number is 0, stop entering number and calculate the smallest and largest number. There ***won't be limitation*** on the length of sequence we enter.

```
Input different integers (end with 0): 13 27 14 0
Smallest is 13
Largest is 27
```