hw6a : How to write functions

Based on 5a.c

Problem:

Line 1 consist of two integer n1, n2 which representing number of boys & girls

Line 2 have n1 integers representing boys' height

Line 3 have n2 integers representing girls' height

Line 4 is a person's height, you need to guess the person is boy or girl based on the distance between person's height and boys' & girls' height.

Note : 1. Distance is defined by : distance(value, datas) = abs((value-mean) / var)

2. You only have to implement the function

hw6a : How to write functions

Example 1:

Input: 3 3
170 180 175
160 165 170
166
Output: Girl
Explanation :
distance(person, boys) = abs(166-175) / 50
distance(person, girls) = abs(166-165) / 50
-> Girl

hw6b : How to use functions

Based on 5b.c

Problem:

Given 2 string, print out the string is “Name” or “Age”.

If the string is not one of them, print “None”.

Requirement:

Please use the already completed function in main program

hw6b : How to use functions

Example 1:

Input: David 87
Output: Name Age

Example 2:

Input: Peter87 3.14159
Output: None None

hw6c : Recursive function

Based on 5c.c

Problem:

If mode=0, output n-th number fibonacci series

If mode=1, output GCD of a and b

Requirement:

Please implement “int fibNum(int n)” and “int GCD(int a, int b)” function. The function code should be written in recursive form.

hw6c : Recursive function

Example 1:

Input: 0 6
Output: 8

Example 2:

Input: 1 100 105
Output: 5

hw6d : Climb Stairs

Based on 5d.c

Problem:

A person named John can climb one, two or three stair at a time,

Given n represent the number of stairs he need to climb,

Please compute how many distinct way he can climb to the top?

hw6d : Climb Stairs

Example 1:

Input: 2
Output: 2
Explanation: 1+1 or 2, so there are 2 ways

Example 2:

Input: 3
Output: 4
Explanation: 1+1+1 or 2+1 or 1+2 or 3 so there are 4 ways

hw6e : Sort String

Based on 5e.c

Problem

> Given a string, please output sorted string in ascending order (小到大). You can assume there are only digit and capitalized English letters in string, and digits are considered smaller than letters in this question.

hw6e : Sort String

Example 1:

Input: O3O
Output: 3OO

Example 2:

Input: NCTU2018CS
Output: 0128CCNSTU

hw6f : bonus

Based on 5f.c

Problem:

Given n, followed by price of a good in n days, and you can buy or sell it in one day, you can make at most two transaction, please output the maximum profit you can get.

Note: 1. 一天內只能做一件事(買或賣)

2. 要先買才能賣
3. 手上有舊的，要先賣掉才能買新的
4. 最多可以買+賣2次，最少0次

hw6f : bonus

Example 1:

Input: 8 3,3,5,0,0,3,1,4
Output: 6
Explanation: Buy on day 4 (price = 0) and sell on day 6 (price = 3), profit = 3-0 = 3.
Then buy on day 7 (price = 1) and sell on day 8 (price = 4), profit = 4-1 = 3.

Example 2:

Input: 5 7,6,4,3,1
Output: 0
Explanation: In this case, no transaction is done, i.e. max profit = 0.