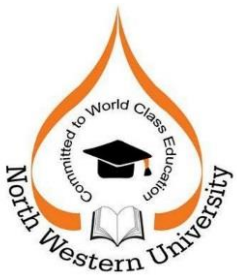

North Western University, Khulna,(NWU)

Lab Report

Course Title: Object Oriented Programming Laboratory

Course Code: CSE-2102

Problem No: 04

Problem Title: Window Dilemma

Date of Submission: 01 February 2023

Submitted By:

Team Name: NWU_Terminators

Team ID: 802518

Coach Name: Abu Naim Khan

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Member 2: Sk Md Ashikur Rahman Nahid (20221120010)

Member 3: Tanvir Hasan Sakib (20221140010)

Team Link: https://icpc.global/private/teams/802518

Submitted To:

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Problem

4. Dhaka is one of the mega cities of Bangladesh. At different times, Dhaka was entitled differently by poets, lyricists, and artists. The bus is one of the most used public transport here in Dhaka. A daily passenger who travels on a bus has to struggle to get in a bus amidst of crowd. When it comes to traveling through a bus, there is a phenomenon called 'window dilemma' where two passengers of front and back seats exchange hot words for their share of the empty space in the window.

You may know that the window of the bus has a sliding glass that slides horizontally. The horizontal length of the window is WW and the horizontal length of the sliding glass is GG. Your task is to slide the glass and distribute equal empty space to both passengers.

Input:

The first line of input consists of an integer T(1≤T≤1000)T(1≤T≤1000) denoting the number of cases. The next TT lines contain two integers W(2<W≤1000)W(2<W≤1000) and G(1≤G<W)G(1≤G<W) respectively indicating the horizontal length of the window and the horizontal length of the sliding glass.

Output:

Print the length of the empty space of the window each passenger gets. The answer should be accurate at least up to four decimal places.

Sample:

Input	Output
1 6 2	2

How we solved the problem:

We first discussed the problem over a zoom meeting together. We found the logic after about 30 minutes of discussion.

Then we solve the solution in to three parts - algorithm, pseudocode, and the program and then distribued them to ourselves.

We contributed equally to solving this problem. Tanvir Hasan Sakib prepared the Algorithm, Tahmina Sultana Ria made the pseudocode, MD. Ashikur Rahman Nahid wrote the solution program.

Pseudocode :

Step 1 : Read t.
Step 2 : Repeat steps 3-6 for t times.
Step 3 : Read w and g
step 4 : Calculate emptyspace = (w-g)/2
step 5 : Print emptyspace[i]
Step 6 : decrement t
Step 7 : End

Contribution of
Tahmina Sultana Ria.
Time spend : 15 mins

Algorithm:

1. Read a float value 't' which represents the number of test cases.
2. Repeat the following steps 't' times:
   a) Read two float values 'w' and 'g' representing the horizontal length and sliding glass's horizontal length.
   b) Calculate the empty space between the platforms, I mean the empty space by subtracting the gap from the width and dividing by 2.
      emptySpace = (w-g)/2
   c. Print the value of emptySpace.
3. End.

Contribution of
Tanvia Hasan Sakib
ID: 2022114010
Time Spent: 30 mins.

3. Contribution of Sk Md Ashikur Rahman Nahid:

It took me around 10 minutes to write the following program.

main.c

```c
#include <stdio.h>
#include <stdlib.h>

int main() {
    float t;
    scanf("%f", &t);
    while (t--) {
        float w, g;
        scanf("%f %f", &w, &g);
        float emptySpace = (w - g) / 2;
        printf("%f\n", emptySpace);
    }
    return 0;
}
```