Library Fine

by vatsalchanana

Your local library needs your help! Given the expected and actual return dates for a library book, create a program that calculates the fine (if any). The fee structure is as follows:

1. If the book is returned on or before the expected return date, no fine will be charged (i.e.: $\textit{fine} = 0$).
2. If the book is returned after the expected return *day* but still within the same calendar month and year as the expected return date, $\textit{fine} = 15 \text{ Hackos} \times (\text{the number of days late})$.
3. If the book is returned after the expected return *month* but still within the same calendar year as the expected return date, the $\textit{fine} = 500 \text{ Hackos} \times (\text{the number of months late})$.
4. If the book is returned after the calendar *year* in which it was expected, there is a fixed fine of 10000 Hackos.

Charges are based only on the least precise measure of lateness. For example, whether a book is due January 1, 2017 or December 31, 2017, if it is returned January 1, 2018, that is a year late and the fine would be $10,000 \text{ Hackos}$.

Input Format

The first line contains 3 space-separated integers denoting the respective $\textit{day}$, $\textit{month}$, and $\textit{year}$ on which the book was returned.
The second line contains 3 space-separated integers denoting the respective $\textit{day}$, $\textit{month}$, and $\textit{year}$ on which the book was due to be returned.

Constraints

- $1 \leq D \leq 31$
- $1 \leq M \leq 12$
- $1 \leq Y \leq 3000$
- **It is guaranteed that the dates will be valid Gregorian calendar dates.**

Output Format

Print a single integer denoting the library fine for the book received as input.

Sample Input

```
9 6 2015
6 6 2015
```

Sample Output

```
45
```

Explanation

Given the following return dates:
Actual: $D_a = 9, M_a = 6, Y_a = 2015$
Expected: $D_e = 6, M_e = 6, Y_e = 2015$

Because $Y_e \equiv Y_a$, we know it is less than a year late.
Because $M_e \equiv M_a$, we know it's less than a month late.
Because $D_e < D_a$, we know that it was returned late (but still within the same month and year).

Per the library's fee structure, we know that our fine will be $15\ \text{Hackos} \times (\#\ \text{days late})$. We then print the result of $15 \times (D_a - D_e) = 15 \times (9 - 6) = 45$ as our output.

Easy Submitted 62788 times
Max Score **15**

Need Help?

View Discussions

View Editorial Solution

View Top Submissions

Rate This Challenge:

Download problem statement

Download sample test cases

Suggest Edits

Current Buffer (saved locally, editable) C++14

```cpp
#include <iostream>
#include <string>
int main()
{
    //  the book was returned
    int dayRe, monthRe, yearRe;
    std::cin >> dayRe >> monthRe >> yearRe;

    //  the book was due to be returned
    int dayDue, monthDue, yearDue;
    std::cin >> dayDue >> monthDue >> yearDue;


    if( (dayRe <= dayDue) && (monthRe <= monthDue) && (yearRe <= yearDue) )
        std::cout << "0" << std::endl;
    else if( (dayRe > dayDue) && (monthRe == monthDue) && (yearRe == yearDue) )
        std::cout << (dayRe-dayDue)*15 << std::endl;
    else if( (monthRe > monthDue) && (yearRe == yearDue) )
        std::cout << (monthRe-monthDue)*500 << std::endl;
    else if(yearRe > yearDue)
        std::cout << "10000" << std::endl;
    else
        std::cout << "0" << std::endl;

    return 0;
}

```

Line: 27 Col: 1

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

Challenge your friends:

✔ Test Case #0	✔ Test Case #1	✔ Test Case #2
✔ Test Case #3	✔ Test Case #4	✔ Test Case #5
✔ Test Case #6	✔ Test Case #7	✔ Test Case #8
✔ Test Case #9	✔ Test Case #10	✔ Test Case #11
✔ Test Case #12	✔ Test Case #13	✔ Test Case #14
✔ Test Case #15	✔ Test Case #16	

You've earned 15.00 points. Next Challenge