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Day 26: Nested Logic 🔖

by vatsalchanana

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Objective

Today's challenge puts your understanding of nested conditional statements to the test. You already have the knowledge to complete this challenge, but check out the Tutorial tab for a video on testing!

Task

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.: $fine = 0$).

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, $fine = 15 \text{ Hackos } \times \text{ (the number of days late)}$.

3. If the book is returned after the expected return *month* but still within the same calendar year as the expected return date, the $fine = 500 \text{ Hackos } \times \text{ (the number of months late)}$.

4. If the book is returned after the calendar *year* in which it was expected, there is a fixed fine of 10000 Hackos.

Input Format

The first line contains 3 space-separated integers denoting the respective *day*, *month*, and *year* on which the book was *actually* returned.
The second line contains 3 space-separated integers denoting the respective *day*, *month*, and *year* on which the book was *expected* to be returned (due date).

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:

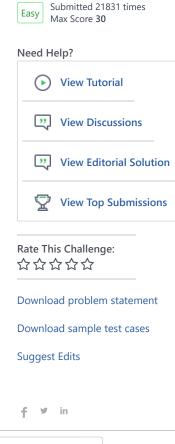Actual: $D_a = 9, M_a = 6, Y_a = 2015$

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.

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```
1  import java.io.*;
2  import java.util.*;
3
4  public class Solution {
5
6      public static void main(String[] args) {
7          /* Enter your code here. Read input from STDIN.
8          Print output to STDOUT. Your class should be named Solution. */
9
10         Scanner sc = new Scanner(System.in);
11
12         // actual return date
13
14         int d_a = sc.nextInt();
15         int m_a = sc.nextInt();
16         int y_a = sc.nextInt();
17
18
19         // expected return date
20         int d_e = sc.nextInt();
21         int m_e = sc.nextInt();
22         int y_e =  sc.nextInt();
23
24         int d_r;
```

```
25          int m_r;
26          int y_r;
27          int fine = 0;
28
29  ▼       if (y_a < y_e) { //YEAR if same year
30              fine = 0;
31  ▼       } else if (y_a == y_e) {
32  ▼           if (m_a <= m_e) { //MONTH 12 < 1
33  ▼               if (d_a <= d_e) { //DAY
34                      fine = 0;
35  ▼               } else {
36                      fine += 15 * (d_a - d_e);
37                  }
38  ▼           } else {
39                  fine += 500 * (m_a - m_e);
40              }
41  ▼       } else {
42              fine = 10_000;
43          }
44          System.out.println(fine);
45      }
46  }
47
48  ▼ /*
49
50
51
52
53
54
55
56
57
58
59
60      */
```

Line: 34 Col: 33

⬆ Upload Code as File   ☐ Test against custom input   [Run Code]   [Submit Code]

Testcase 0 ✔

Congratulations, you passed the sample test case.

Click the **Submit Code** button to run your code against all the test cases.

Input (stdin)

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

Your Output (stdout)

```
45
```

Expected Output

```
45
```

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