Problem 592: Fraction Addition and Subtraction

Problem Information

Difficulty: Medium
Acceptance Rate: 66.33%
Paid Only: No
Tags: Math, String, Simulation

Problem Description

Given a string `expression` representing an expression of fraction addition and subtraction, return the calculation result in string format.

The final result should be an [irreducible fraction](https://en.wikipedia.org/wiki/Irreducible_fraction). If your final result is an integer, change it to the format of a fraction that has a denominator `1`. So in this case, `2` should be converted to `2/1`.

Example 1:

Input: expression = "-1/2+1/2" **Output:** "0/1"

Example 2:

Input: expression = "-1/2+1/2+1/3" **Output:** "1/3"

Example 3:

Input: expression = "1/3-1/2" **Output:** "-1/6"

Constraints:

* The input string only contains `'0'` to `'9'`, `'/'`, `'+'` and `'-'`. So does the output. * Each fraction (input and output) has the format `±numerator/denominator`. If the first input fraction or the output is positive, then `'+'` will be omitted. * The input only contains valid **irreducible fractions** , where the **numerator** and **denominator** of each fraction will always be in

the range `[1, 10]`. If the denominator is `1`, it means this fraction is actually an integer in a fraction format defined above. * The number of given fractions will be in the range `[1, 10]`. * The numerator and denominator of the **final result** are guaranteed to be valid and in the range of **32-bit** int.

Code Snippets

C++:

```
class Solution {
public:
string fractionAddition(string expression) {

}
};
```

Java:

```
class Solution {
public String fractionAddition(String expression) {

}
}
```

Python3:

```
class Solution:
def fractionAddition(self, expression: str) -> str:
```