Category: Medium

Competition: CSI KJSCE Code Wars 2017-18. Try the question in competition environment:

<https://www.hackerrank.com/contests/codewars2-round2/challenges/new-currency-1>

Question:

South Sudan is a new country which is formed recently on July 9, 2011. Their government is minting a new currency called South Sudanese Pound (ssp). They want to ensure that any transaction with an accuracy of 0.1 ssp (that is any transaction of type ….ABC.D where A, B, C, D are the digits) should be possible with the new bills (currency) issued by both giving and taking bills during a transaction. Given the worth of every bill, find whether the above accuracy of transactions is achievable or not? There will be queries to include and exclude such bills and coins. This is always needed in the case of issuing new bills or performing demonetising. Confirm the same for every query. Note that queries should be processed continuously. This means that the resulting bills from the first query will be the input for the second query and so on.

Query format:   
i: include as a new bill   
r: remove from old bills   
Examples of queries:   
Let the initial set of bills be: 10.1234 1.2223 2 1 5   
i 23.8 Should result into: 10.1234 1.2223 2 1 5 23.8   
r 5 (Note that queries need to be processed in order as given)   
Will cause removal of 5 from the array of bills generated in the previous query: 10.1234 1.2223 2 1 23.8

**Input Format**

Line 1 : Integer number of bills.   
Line 2 : Single space separated values of bills. They can be fractional and negative.   
Line 3: Number of queries   
Rest of the lines are queries

**Constraints**

Number of bills: [1,400]   
Number of queries: [0,400]   
Every amount of bill is in [-10^5, 10^5]   
Amount of every bill will be provided with an accuracy of 4 decimal places.

**Output Format**

Output correct string from y/n/w for initial configuration of bills as well as for every query that follows   
y: accuracy achievable   
n: accuracy not achievable   
w: wrong query (if NON POSITIVE (including 0) value bill is in the set of bills or a bill not in the set is being removed) **DO NOT REMOVE THE ELEMENT AFTER PRINTING W**

**Sample Input 0**

5

1.8 1.9 1.6 10 20

4

r 1.9

i 1

i 0.5

r 8

**Sample Output 0**

y

n

n

y

w

**Explanation 0**

In the given initial input any transaction can be done with an accuracy of 0.1 ssp. 0.1 can be obtained by giving 1.9 and taking 1.8. Like 4 ssp can be given by giving 3 1.6 ssp coins, 8 1.8 ssp coins and taking 8 1.9 ssp coins. Similarly any transaction can be done with an accuracy of 0.1ssp.This means all transactions in {0.1, 0.2, 0.3... 0.9, 1} U {1.1, 1.2, 1.3, 1.9, 2} U {2.1, 2.2, 2.3.. 2.9,3} can be done with the initial set of coins. 1st y for the given input. 2nd n for 1st query. 3rd n for 2nd query. 4th y for 3rd query. 5th w for last query as 8 is not in the bills so the query is wrong

**Sample Input 1**

10

0.2 0.3 0.7 0.9 0.228 0.9999 1.0001 0.6 1000 1

5

r 10

r 0.3

r 1

i 1010

r 0.2

**Sample Output 1**

y

w

y

y

y

y

Try these cases:

|  |  |
| --- | --- |
| Input | Output |
| 1  0.001  0 | y |
| 10  0.2 0.3 0.7 0.9 0.228 0.9999 1.0001 0.6 1000 1  5  r 10  r 0.3  r 1  i 1010  r 0.2 | y  w  y  y  y  y |
| 5  1 2 3 4 5 10000.1  3  r 10000.1  i 0.25  i 0.05 | y  n  n  y |
| 3  0 0 10  0 | w |
| 5  1 -2 -3 0 5  4  r -2  r -3  r 0  i 10.1 | w  w  w  n  y |
| 3  10.03 10.06 10.09  0 | y |
| 5  99999 99998 99997 99995 99994  7  r 99994  i 0.0001  r 55555  r 99998  i 1  r 99994  i 50000 | n  n  y  w  y  y  w  y |
| 3  1.4 0.6 2.1  6  r 1.4  r 0.6  i 0.6  i 1.4  r 2.1  i 2.1 | y  n  n  n  y  n  y |