

BaseBall Game- Leetcode-682

Question:

You are keeping the scores for a baseball game with strange rules. At the beginning of the game, you start with an empty record.

You are given a list of strings operations, where operations[i] is the ith operation you must apply to the record and is one of the following:

An integer x.

Record a new score of x.

'+'.

Record a new score that is the sum of the previous two scores.

'D'.

Record a new score that is the double of the previous score.

'C'.

Invalidate the previous score, removing it from the record.

Return the sum of all the scores on the record after applying all the operations.

The test cases are generated such that the answer and all intermediate calculations fit in a 32-bit integer and that all operations are valid.

Example 1:

Input: ops = ["5","2","C","D","+"]

Output: 30

Explanation:

"5" - Add 5 to the record, record is now [5].

"2" - Add 2 to the record, record is now [5, 2].

"C" - Invalidate and remove the previous score, record is now [5].

"D" - Add $2 * 5 = 10$ to the record, record is now [5, 10].

"+" - Add $5 + 10 = 15$ to the record, record is now [5, 10, 15].

The total sum is $5 + 10 + 15 = 30$.

Example 2:

Input: ops = ["5","-2","4","C","D","9","+","+"]

Output: 27

Explanation:

"5" - Add 5 to the record, record is now [5].

"-2" - Add -2 to the record, record is now [5, -2].

"4" - Add 4 to the record, record is now [5, -2, 4].

"C" - Invalidate and remove the previous score, record is now [5, -2].

"D" - Add $2 * -2 = -4$ to the record, record is now [5, -2, -4].

"9" - Add 9 to the record, record is now [5, -2, -4, 9].

"+" - Add $-4 + 9 = 5$ to the record, record is now [5, -2, -4, 9, 5].

"+" - Add $9 + 5 = 14$ to the record, record is now [5, -2, -4, 9, 5, 14].

The total sum is $5 + -2 + -4 + 9 + 5 + 14 = 27$.

Example 3:

Input: ops = ["1","C"]

Output: 0

Explanation:

"1" - Add 1 to the record, record is now [1].

"C" - Invalidate and remove the previous score, record is now [].

Since the record is empty, the total sum is 0.

Constraints:

$1 \leq \text{operations.length} \leq 1000$

operations[i] is "C", "D", "+", or a string representing an integer in the range $[-3 * 10^4, 3 * 10^4]$.

For operation "+", there will always be at least two previous scores on the record.

For operations "C" and "D", there will always be at least one previous score on the record.

Python Code:

class Solution:

def calPoints(self, operations: List[str]) -> int:

```
stk=[]
for op in operations:
    if op=='+':
        stk.append(stk[-1]+stk[-2])
    elif op=='D':
        stk.append(stk[-1]*2)
    elif op=='C':
        stk.pop()
    else:
        stk.append(int(op))
return sum(stk)
```

2. Capitalize String- Hackerrank

Question:

You are asked to ensure that the first and last names of people begin with a capital letter in their passports. For example, alison heck should be capitalised correctly as Alison Heck.

Given a full name, your task is to capitalize the name appropriately.

Input Format

A single line of input containing the full name, .

Constraints

The string consists of alphanumeric characters and spaces.

Note: in a word only the first character is capitalized. Example 12abc when capitalized remains 12abc.

Output Format

Print the capitalized string, .

Sample Input

chris alan

Sample Output

Chris Alan

Python Code:

```
def solve(s):  
    ans = s.split(' ')  
    ans1 = (((i.capitalize() for i in ans)))  
    return ' '.join(ans1)
```

3. Divisible sum pairs- Hackerrank

Question:

Given an array of integers and a positive integer k , determine the number of pairs (i, j) where $i < j$ and $i + j$ is divisible by k .

Example

$ar = [1, 2, 3, 4, 5, 6]$

$k = 3$

Three pairs meet the criteria: $[1, 4]$ $[2, 3]$ and $[4, 6]$.

Function Description

Complete the `divisibleSumPairs` function in the editor below.

`divisibleSumPairs` has the following parameter(s):

`int n`: the length of array

`int ar[n]`: an array of integers

`int k`: the integer divisor

Returns

- `int`: the number of pairs

Python code:

```
def divisibleSumPairs(n, k, ar):  
    count=0
```

```

for i in range(len(ar)):
    for j in range(i+1,len(ar)):
        if((ar[i]+ar[j])%k==0):
            count+=1
return count

```

4.Find Digits- Hackerrank

Question:

An integer d is a divisor of an integer n if the remainder of $n/d=0$.

Given an integer, for each digit that makes up the integer determine whether it is a divisor.

Count the number of divisors occurring within the integer.

Example

$n=124$

Check whether 1,2 and 4 are divisors of 124. All 3 numbers divide evenly into 124 so return 3.

$n=111$

Check whether 1,1 , and 1 are divisors of 111. All 3 numbers divide evenly into 111 so return 3.

$n=10$

Check whether 1 and 0 are divisors of 10. 1 is, but 0 is not. Return 1.

Function Description

Complete the findDigits function in the editor below.

findDigits has the following parameter(s):

int n : the value to analyze

Returns

int: the number of digits in that are divisors of

Input Format

The first line is an integer, , the number of test cases.

The subsequent lines each contain an integer, .

Constraints

$$1 \leq t \leq 15$$

$$0 < n < 10^9$$

Sample Input

```
2
12
1012
```

Sample Output

```
2
3
```

Explanation

The number 12 is broken into two digits 1 and 2. When 12 is divided by either of those two digits, the remainder is 0 so they are both divisors.

The number 1012 is broken into four digits, 1, 0, 1, and 2. 1012 is evenly divisible by its digits, 1, 1, and 2, but it is not divisible by 0 as division by zero is undefined.

Python Code:

```
def findDigits(n):
    count = 0
    print(list(str(n)))
    for i in list(str(n)):
        if int(i) != 0 and n % int(i) == 0:
            count += 1
```

return count

5.Sherlock and Squares:

Question:

Watson likes to challenge Sherlock's math ability. He will provide a starting and ending value that describe a range of integers, inclusive of the endpoints. Sherlock must determine the number of square integers within that range.

Note: A square integer is an integer which is the square of an integer, e.g. 1,4,9,16,25.

Example

a=24

b=49

There are three square integers in the range: 25,36 and 49. Return 3.

Function Description

Complete the squares function in the editor below. It should return an integer representing the number of square integers in the inclusive range from a to b.

squares has the following parameter(s):

- int a: the lower range boundary
- int b: the upper range boundary

Returns

- int: the number of square integers in the range

Input Format

The first line contains q , the number of test cases.

Each of the next q lines contains two space-separated integers, a and b , the starting and ending integers in the ranges.

Sample Input

```
2
3 9
17 24
```

Sample Output

```
2
0
```

Explanation

Test Case #00: In range $[3,9]$, 4 and 9 are the two square integers.

Test Case #01: In range $[17,24]$, there are no square integers.

Python Code:

```
def squares(a, b):
    a = math.ceil(math.sqrt(a))
    b = math.floor(math.sqrt(b))
    return b - a + 1
```