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Test Name:	**Mock Test**
Taken On:	15 May 2023 13:26:20 IST
Time Taken:	46 min 44 sec/ 90 min
Invited by:	Ankush
Invited on:	15 May 2023 13:26:00 IST
Skills Score:	
Tags Score:	Algorithms 290/290 Arrays 95/95 Core CS 290/290 Data Structures 215/215 Easy 95/95 Medium 75/75 Queues 120/120 Search 75/75 Sorting 95/95 Strings 95/95 problem-solving 170/170

100%

290/290

scored in **Mock Test** in 46 min 44 sec on 15 May 2023 13:26:20 IST

Recruiter/Team Comments:

No Comments.

Plagiarism flagged

We have marked questions with suspected plagiarism below. Please review.

	Question Description	Time Taken	Score	Status
Q1	Truck Tour > Coding	2 min 52 sec	120/ 120	
Q2	Pairs > Coding	33 min 50 sec	75/ 75	
Q3	Big Sorting > Coding	1 min 30 sec	95/ 95	

QUESTION 1

Truck Tour > Coding Algorithms Data Structures Queues Core CS

Needs Review

Score 120

QUESTION DESCRIPTION

Suppose there is a circle. There are N petrol pumps on that circle. Petrol pumps are numbered 0 to $(N-1)$ (both inclusive). You have two pieces of information corresponding to each of the petrol pump: (1) the amount of petrol that particular petrol pump will give, and (2) the distance from that petrol pump to the next petrol pump.

Initially, you have a tank of infinite capacity carrying no petrol. You can start the tour at any of the petrol pumps. Calculate the first point from where the truck will be able to complete the circle. Consider that the truck will stop at each of the petrol pumps. The truck will move one kilometer for each litre of the petrol.

Input Format

The first line will contain the value of N.
The next N lines will contain a pair of integers each, i.e. the amount of petrol that petrol pump will give and the distance between that petrol pump and the next petrol pump.

Constraints:
$1 \leq N \leq 10^5$
$1 \leq \text{amount of petrol, distance} \leq 10^9$

Output Format

An integer which will be the smallest index of the petrol pump from which we can start the tour.

Sample Input

```
3
1 5
10 3
3 4
```

Sample Output

```
1
```

Explanation

We can start the tour from the second petrol pump.

CANDIDATE ANSWER

Language used: **Python 3**

```
#
# Complete the 'truckTour' function below.
#
# The function is expected to return an INTEGER.
# The function accepts 2D_INTEGER_ARRAY petrolpumps as parameter.
#

def truckTour(petrolpumps):
    # Write your code here
    N = len(petrolpumps)

    for i in range(N):
        j = 0
        tank_cap = 0
        valid_tour = True

        while j < N:
```

```
            liters, dist = petrolpumps[(j + i) % N]
            tank_cap += liters - dist
            j += 1

            if tank_cap < 0:
                valid_tour = False
                break

        if valid_tour:
            return i

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Sample case	Success	0	0.081 sec	9.28 KB
Testcase 2	Easy	Hidden case	Success	10	0.0666 sec	9.53 KB
Testcase 3	Easy	Hidden case	Success	10	0.0654 sec	9.5 KB
Testcase 4	Easy	Hidden case	Success	10	0.1018 sec	9.61 KB
Testcase 5	Easy	Hidden case	Success	10	1.5097 sec	28.9 KB
Testcase 6	Easy	Hidden case	Success	10	2.3125 sec	29 KB
Testcase 7	Easy	Hidden case	Success	10	2.1229 sec	28.9 KB
Testcase 8	Easy	Hidden case	Success	10	1.4257 sec	29 KB
Testcase 9	Easy	Hidden case	Success	10	0.5841 sec	29 KB
Testcase 10	Easy	Hidden case	Success	10	0.8373 sec	29 KB
Testcase 11	Easy	Hidden case	Success	10	1.0559 sec	28.9 KB
Testcase 12	Easy	Hidden case	Success	10	2.9945 sec	28.8 KB
Testcase 13	Easy	Hidden case	Success	10	1.0524 sec	28.9 KB

No Comments

QUESTION 2

Correct Answer

Score 75

Pairs › Coding

Search | Algorithms | Medium | problem-solving | Core CS

QUESTION DESCRIPTION

Given an array of integers and a target value, determine the number of pairs of array elements that have a difference equal to the target value.

Example

$k = 1$

$arr = [1, 2, 3, 4]$

There are three values that differ by $k = 1$: $2 - 1 = 1$, $3 - 2 = 1$, and $4 - 3 = 1$. Return 3.

Function Description

Complete the *pairs* function below.

pairs has the following parameter(s):

- *int k:* an integer, the target difference
- *int arr[n]:* an array of integers

Returns

- *int:* the number of pairs that satisfy the criterion

Input Format

The first line contains two space-separated integers n and k, the size of arr and the target value.
The second line contains n space-separated integers of the array arr.

Constraints

- $2 \leq n \leq 10^5$
- $0 < k < 10^9$
- $0 < arr[i] < 2^{31} - 1$
- each integer $arr[i]$ will be unique

Sample Input

```
STDIN       Function
-----       --------
5 2         arr[] size n = 5, k =2
1 5 3 4 2   arr = [1, 5, 3, 4, 2]
```

Sample Output

```
3
```

Explanation

There are 3 pairs of integers in the set with a difference of 2: [5,3], [4,2] and [3,1]. .

CANDIDATE ANSWER

Language used: **Python 3**

```python

#
# Complete the 'pairs' function below.
#
# The function is expected to return an INTEGER.
# The function accepts following parameters:
#  1. INTEGER k
#  2. INTEGER_ARRAY arr
#

def pairs(k, arr):
    # Write your code here
    s = set(arr)
    r = 0
    for i in sorted(arr):
        if i + k in s:
            r += 1
    return r

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Hidden case	Success	5	0.0511 sec	9.3 KB
Testcase 2	Easy	Hidden case	Success	5	0.0902 sec	9.39 KB
Testcase 3	Easy	Hidden case	Success	5	0.0529 sec	9.2 KB
Testcase 4	Easy	Hidden case	Success	5	0.0983 sec	9.37 KB
Testcase 5	Easy	Hidden case	Success	5	0.0959 sec	9.48 KB
Testcase 6	Easy	Hidden case	Success	5	0.0983 sec	10.4 KB

Testcase 7	Easy	Hidden case	Success	5	0.0861 sec	10.4 KB
Testcase 8	Easy	Hidden case	Success	5	0.0961 sec	9.74 KB
Testcase 9	Easy	Hidden case	Success	5	0.0555 sec	10.1 KB
Testcase 10	Easy	Hidden case	Success	5	0.0593 sec	11 KB
Testcase 11	Easy	Hidden case	Success	5	0.1409 sec	21.3 KB
Testcase 12	Easy	Hidden case	Success	5	0.1399 sec	21.4 KB
Testcase 13	Easy	Hidden case	Success	5	0.182 sec	21.2 KB
Testcase 14	Easy	Hidden case	Success	5	0.1822 sec	21.2 KB
Testcase 15	Easy	Hidden case	Success	5	0.1089 sec	21.2 KB
Testcase 16	Easy	Sample case	Success	0	0.1103 sec	9.34 KB
Testcase 17	Easy	Sample case	Success	0	0.0505 sec	9.34 KB
Testcase 18	Easy	Sample case	Success	0	0.0927 sec	9.23 KB

No Comments

QUESTION 3

Correct Answer

Score 95

Big Sorting › Coding

Sorting | Strings | Algorithms | Easy | Data Structures | Arrays | problem-solving | Core CS

QUESTION DESCRIPTION

Consider an array of numeric strings where each string is a positive number with anywhere from 1 to 10^6 digits. Sort the array's elements in *non-decreasing*, or ascending order of their integer values and return the sorted array.

Example

$unsorted = [\text{'1'}, \text{'200'}, \text{'150'}, \text{'3'}]$

Return the array ['1', '3', '150', '200'].

Function Description

Complete the *bigSorting* function in the editor below.

bigSorting has the following parameter(s):

- *string unsorted[n]:* an unsorted array of integers as strings

Returns

- *string[n]:* the array sorted in numerical order

Input Format

The first line contains an integer, n, the number of strings in $unsorted$.
Each of the n subsequent lines contains an integer string, $unsorted[i]$.

Constraints

- $1 \leq n \leq 2 \times 10^5$
- Each string is guaranteed to represent a positive integer.
- There will be no leading zeros.
- The total number of digits across all strings in $unsorted$ is between 1 and 10^6 (inclusive).

Sample Input 0

```
6
31415926535897932384626433832795
1
```

```
3
10
3
5
```

Sample Output 0

```
1
3
3
5
10
3141592653589793238462643383279 5
```

Explanation 0

The initial array of strings is $unsorted = [3141592653589793238462643383279 5, 1, 3, 10, 3, 5]$. When we order each string by the real-world integer value it represents, we get:

$$1 \leq 3 \leq 3 \leq 5 \leq 10 \leq 3141592653589793238462643383279 5$$

We then print each value on a new line, from smallest to largest.

Sample Input 1

```
8
1
2
100
123034798498573417183401923 71
3084193741082937
3084193741082938
111
200
```

Sample Output 1

```
1
2
100
111
200
3084193741082937
3084193741082938
123034798498573417183401923 71
```

CANDIDATE ANSWER

Language used: **Python 3**

```
1
2 #
3 # Complete the 'bigSorting' function below.
4 #
5 # The function is expected to return a STRING_ARRAY.
6 # The function accepts STRING_ARRAY unsorted as parameter.
7 #
8
9 def bigSorting(unsorted):
10     # Write your code here
11     result = []
```

```
12      for i in sorted(unsorted, key=lambda i: int(i)):
13          result.append(i)
14      return result
15
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Sample case	Success	0	0.0465 sec	9.26 KB
Testcase 2	Medium	Hidden case	Success	10	0.0643 sec	9.37 KB
Testcase 3	Medium	Hidden case	Success	10	0.0567 sec	10.9 KB
Testcase 4	Hard	Hidden case	Success	15	4.5623 sec	13.1 KB
Testcase 5	Hard	Hidden case	Success	15	4.2163 sec	13.5 KB
Testcase 6	Hard	Hidden case	Success	15	3.7587 sec	12.8 KB
Testcase 7	Hard	Hidden case	Success	15	2.2412 sec	14.1 KB
Testcase 8	Hard	Hidden case	Success	15	0.2728 sec	35.7 KB
Testcase 9	Easy	Sample case	Success	0	0.0874 sec	9.35 KB

No Comments

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