0 / 3 Completed

01 : 26 : 17

1

2

3

Question 1 **Max. score: 20.00**

Airlift

You and your family are trapped on a flood-prone island. When you called the emergency services to ask for assistance, they promised to send aircraft to airlift your family. As long as the combined weight of the two passengers is less than or equal to *K*, each aircraft is only permitted to carry a maximum of *K* and a maximum of two other passengers in addition to the pilot. You are given the following:

- The maximum capacity of the aircraft
- The total number of family members
- An array *weights*, where weights[i] represent the weight of the i^{th} family member

Task

Return the minimum number of aircraft required to airlift the family. If not possible, return *-1*.

Example

Assumptions

- *K = 5*
- *N = 9*
- *weights = [3, 3, 5, 2, 1, 4, 5, 1, 5]*

Approach

New Submission | All Submissions

Auto-complete ready!

Save

```
def solve (K, N, weights):
    pass

K = int(input())
N = int(input())
weights = list(map(int, input().split()))

out_ = solve(K, N, weights)
print (out_)
```

Test against custom input

Custom input populated

28°C
Mostly cloudy

Search

$1 \leq K \leq 10^9$

$1 \leq N \leq 10^5$

$1 \leq weights[i] \leq 10^9$

weights contain only positive integers.

Sample input

```
6
4
3 5 4 3
```

Sample output

```
3
```

Explanation

3 aircraft are required with weights [3, 3] [4] [5].

ⓘ The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 1

```
5
5
2 4 2 1 4
```

Sample output 1

```
3
```

273051308

0 / 3 Completed

Sample input 2

```
7
7
8 5 2 1 4 8 3
```

Sample output 2

```
-1
```

Sample input 3

```
2
1
1
```

Sample output 3

```
1
```

Note:

Your code must be able to print the sample output from the provided sample input. However, your code is run against multiple hidden test cases. Therefore, your code must pass these hidden test cases to solve the problem statement.

Limits

Time Limit: 10 sec(s) for each input file
Memory Limit: 256 MB
Source Limit: 1024 KB

Search

51308

0 / 3 Completed

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Question 2

Max. score: 50.00

1

2

3

Shopping and billing

In a shop with N counters, M people arrive for billing at different times denoted as timeIi. Each person selects the counter with the shortest queue, based on the number of people already present. If a counter is empty, the person gets immediate billing, otherwise, they join the queue.

For every person, output the time when they finish billing and leave the counter.

Notes

- It takes 1 unit of time for the counter to process a person's bill.
- The counter processes the next person immediately after the current person leaves.
- The time is given in increasing order of arrival at the counters. In formal terms $time[i] \leq time[i+1]$.

Function description

Complete the function *solve*. This function takes the following *3* parameters and returns the required answer:

- *N*: Represents the number of counters
- *M*: Represents the number of persons
- *time*: Represents an array containing the entry time of the people

Input format for custom testing

Note: Use this input format if you are testing against custom input or writing code in a language where we don't provide boilerplate code.

- The first line contains *N* denoting the number of counters.
- The second line contains *M* denoting the number of persons.

New Submission | All Submissions

Auto-complete ready! | Save | Python 3 (pyth

```
def solve (N, M, time):

    pass

N = int(input())
M = int(input())
time = list(map(int, input().split()))

out_ = solve(N, M, time)
print (' '.join(map(str, out_)))
```

Test against custom input

Custom input populated

Compile &

Search

Input format for custom testing

Note: Use this input format if you are testing against custom input or writing code in a language where we don't provide boilerplate code.

- The first line contains *N* denoting the number of counters.
- The second line contains *M* denoting the number of persons.
- The third line contains an array *time*, indicating the entry time of the people.

Output format

Print a single line of M space-separated integers, denoting the exit times of the people.

Constraints

$1 \leq N \leq 10^5$

$1 \leq M \leq 10^5$

$0 \leq position[i] \leq 10^9$

Sample input

```
2
4
0 0 0 0
```

Sample output

```
1 1 2 2
```

Explanation

Explanation

Given

- *N = 2*
- *M = 4*
- *position = [0, 0, 0, 0]*

Output

1 1 2 2

Approach

- The first person arrives at 0, finds both counters empty, goes to counter 1, and leaves at 1.
- The second person arrives at 0, finds counter 2 empty, and leaves at 1.
- The third person arrives at 0, finds both counters with 1 person, goes to counter 2, and leaves at 2.
- The fourth person arrives at 0, finds counter 1 with 1 person and counter 2 with 2 persons, goes to counter 1, and leaves at 2.

The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 1

```
10
31
88233 93640 99413 99900 99989 99993 99996 995
```

Sample output 1

```
88234 93641 99414 99901 99990 99994 99997 99997 99
```

Sample input 2

Sample output 2

Search

051308

0 / 3 Completed

01 :19:49

lt.knit3@gmail.com

Question 3

Max. score: 50.00

Special package

You are the manager of a grocery store and you want to create a special package deal for your customers. You are given a matrix of prices of size $N * M$ for different products, with each row representing a different category of products and each column representing a different product within that category.

You want to select one item from each category such that the total cost of the package is as close as possible to a specific target price K.

You need to determine the minimum absolute difference between the target price and the total cost of the package you can create using the products in the matrix.

Note: Exactly 1 item from each category has to be selected.

Function description

Complete the function ***solution()*** provided in the editor. The function takes the following 4 parameters and returns the solution:

- *N*: Represents the number of categories
- *M*: Represents the number of items in each category
- *K*: Represents the target price
- *price*: Represents the price of items

Input format for custom testing

Note: Use this input format if you are testing against custom input or writing code in a language where we don't provide boilerplate code

- The first line contains *N* denoting the number of categories.

New Submission | All Submissions

Setting up auto-complete...

Save | Python 3 (python 3.10)

```
def solution (N, M, K, price):
    # Write your code here
    pass

N = int(input())
M = int(input())
K = int(input())
price = [list(map(int, input().split())) for i in range(N)]

out_ = solution(N, M, K, price)
print (out_)
```

Test against custom input

Custom input populated

Compile & Test code | Submit code

Search

ENG IN

Input format for custom testing

Note: Use this input format if you are testing against custom input or writing code in a language where we don't provide boilerplate code

- The first line contains *N* denoting the number of categories.
- The second line contains *M* denoting the number of items in each category.
- The third line contains *K* denoting the target price.
- Each of the next N lines contains M integers each, denoting the price of the items.

Output format

Print an integer, representing the minimum absolute difference between the target price and the total cost of the package.

Constraints

$1 \leq N, M \leq 70$
$1 \leq price[i][j] \leq 70$
$1 \leq K \leq 800$

Sample input

```
3
1
100
1
2
3
```

Sample output

```
94
```

Explanation

Explanation

Given

Input:

N = 3

M = 1

K = 100

price = [[1], [2], [3]]

Output: 94

Approach :

The best possible choice is to:

- Choose 1 from the first row.
- Choose 2 from the second row.
- Choose 3 from the third row.

The sum of the chosen elements is 6, and the absolute difference is 94.

ⓘ The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 1

```
1
5
42
9 33 35 78 39
```

Sample output 1

```
3
```

Sample input 1

```
1
5
42
9 33 35 70 39
```

Sample output 1

```
3
```

Sample input 2

```
3
1
64
23
66
69
```

Sample output 2

```
94
```

Note:

Your code must be able to print the sample output from the provided sample input. However, your code is run against multiple hidden test cases. Therefore, your code must pass these hidden test cases to solve the problem statement.

Limits

Time Limit: 10 sec(s) for each input file.
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Scoring