

ECE30018 Problem Solving Studio, Fall 2023

P3. Shopping Bag Carriers

| Submission due: 1:00 PM, 26 Sep Tue

Shopping Bag Carriers

You bought a lot of things from a shopping malls and put these to N bags whose weights are w_1, w_2, \dots, w_N . The weight of each shopping bag is no more than M kg.

To bring all these bags home, you need to hire carriers. A carrier can carry at most two bags if the sum of the weights of the carrying bags does not exceed M kg.

Write a program that finds the minimal number of carriers to hire.

Requirements

- **Input:** the input data is given to the standard input. The first line has a positive integer M , the maximum weight that a carrier can carry at a time. M is no more than 100000. Subsequently, an arbitrary number of lines follow, each of which contains a weight of a shopping bag. A weight of a bag is no more than 100000.
- **Output:** Print out the answer to the standard output.
- **Example**

Input

```
5
1
3
2
3
5
```

Output

```
3
```