Dashboard > Algorithms > Implementation > Cut the sticks

Badge Progress (Details)

Points: 1671 Rank: 16694

Your Cut the sticks submission got 25.00 points. [Share]   Tweet

Try the Next Challenge | Try a Random Challenge

Cut the sticks 🔖

by **shashank21j**

| Problem | Submissions | Leaderboard | Discussions | Editorial 🔒 | Topics |

You are given a number of sticks of varying lengths. You will iteratively cut the sticks into smaller sticks, discarding the shortest pieces until there are none left. At each iteration you will determine the length of the shortest stick remaining, cut that length from each of the longer sticks and then discard all the pieces of that shortest length. When all the remaining sticks are the same length, they cannot be shortened so discard them.

Given the lengths of n sticks, print the number of sticks that are left before each iteration until there are none left.

Note: Before each iteration you must determine the current shortest stick.

Input Format
The first line contains a single integer n.
The next line contains n space-separated integers: $a_0, a_1,...a_{n-1}$, where a_i represents the length of the ith stick in array *arr*.

Output Format
For each operation, print the number of sticks that are cut, on separate lines.

Constraints

- $1 \le n \le 1000$

- $1 \le a_i \le 1000$

Sample Input 0

```
6
5 4 4 2 2 8
```

Sample Output 0

```
6
4
2
1
```

Sample Input 1

```
8
1 2 3 4 3 3 2 1
```

Sample Output 1

```
8
6
4
1
```

Explanation

Sample Case 0 :

```
sticks-length          length-of-cut    sticks-cut
5 4 4 2 2 8                  2               6
3 2 2 _ _ 6                  2               4
1 _ _ _ _ 4                  1               2
_ _ _ _ _ 3                  3               1
_ _ _ _ _ _                DONE            DONE
```

Sample Case 1

```
sticks-length          length-of-cut    sticks-cut
1 2 3 4 3 3 2 1             1               8
_ 1 2 3 2 2 1 _             1               6
_ _ 1 2 1 1 _ _             1               4
_ _ _ 1 _ _ _ _             1               1
_ _ _ _ _ _ _ _           DONE            DONE
```

Easy	Submitted 89992 times
	Max Score **25**

Need Help?

💬 **View Discussions**

💬 **View Editorial Solution**

🏆 **View Top Submissions**

Rate This Challenge:

☆ ☆ ☆ ☆ ☆

Resources

Sorting

Download problem statement

Download sample test cases

Suggest Edits

Choose a translation

Chinese   ▼

f   🐦   in

Current Buffer (saved locally, editable)   ⎇ 🕘   C++14   ⌄   ⤢   ⚙

```cpp
 1  #include <iostream>
 2  #include <map>
 3
 4  int main()
 5  {
 6      int n; std::cin >> n;
 7      std::map<int,int> Map;
 8
 9      for(int i = 0; i < n; ++i)
10      {
11          int temp; std::cin >> temp;
12          Map[temp]++;
13      }
14
```

```
15        int sticks = n; //number of sticks that are cut
16        std::cout << sticks << std::endl;
17
18        if(Map.size() > 1)
19        {
20            for(const auto &it: Map)
21            {
22                sticks -= it.second;
23                if(sticks == 0) break;
24                std::cout << sticks << std::endl;
25            }
26        }
27        return 0;
28 }
29
```

Line: 29 Col: 1

⬆ Upload Code as File   ☐ Test against custom input   Run Code   Submit Code

Congrats, you solved this challenge!

Challenge your friends: f   🐦   in

✔ Test Case #0   ✔ Test Case #1   ✔ Test Case #2
✔ Test Case #3   ✔ Test Case #4   ✔ Test Case #5
✔ Test Case #6   ✔ Test Case #7   ✔ Test Case #8
✔ Test Case #9

You've earned 25.00 points.   Next Challenge

Contest Calendar|Blog|Scoring|Environment|FAQ|About Us|Support|Careers|Terms Of Service|Privacy Policy|Request a Feature