

1. Active Traders

An institutional broker wants to review their book of customers to see which are most active. Given a list of trades by customer name, determine which customers account for at least 5% of the total number of trades. Order the list alphabetically ascending by name.

Example

$n = 23$

`customers = ["Bigcorp", "Bigcorp", "Acme", "Bigcorp", "Zork", "Zork", "Abc", "Bigcorp", "Acme", "Bigcorp", "Bigcorp", "Zork", "Bigcorp", "Zork", "Zork", "Bigcorp", "Acme", "Bigcorp", "Acme", "Bigcorp", "Acme", "Littlecorp", "Nadircorp"]`.

Bigcorp had 10 trades out of 23, which is 43.48% of the total trades.

Both Acme and Zork had 5 trades, which is 21.74% of the total trades.

The Littlecorp, Nadir, and Abc had 1 trade each, which is 4.35% of the total trades.

So the answer is ["Acme", "Bigcorp", "Zork"] (in alphabetical order) because only these three companies placed at least 5% of the trades.

Function Description

Complete the function `mostActive` in the editor below.

`mostActive` has the following parameter:

`string customers[n]`: an array customer names

Returns

`string[]`: an alphabetically ascending array of customer names

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq \text{length of } customers[i] \leq 20$
- The first character of `customers[i]` is a capital English letter.
- All characters of `customers[i]` except for the first one are lowercase English letters.
- It is guaranteed that at least one customer makes at least 5% of trades.

▼ Input Format For Custom Testing

The first line contains an integer, n , the number of elements in `customers`.

Each line i of the n subsequent lines (where $0 \leq i < n$) contains a string, `customers[i]`.

▼ Sample Case 0

Sample Input For Custom Testing

STDIN	Function
20	→ customers[] size n = 20
Omega	→ customers = ["Omega", "Alpha", "Omega", ..., "Beta"]
Alpha	
Omega	
Alpha	
Omega	
Alpha	
Omega	
Alpha	
Omega	
Alpha	
Omega	
Alpha	
Omega	
Alpha	
Omega	
Alpha	
Omega	
Beta	

Sample Output

Alpha
Beta
Omega

Explanation

Alpha made 10 trades out of 20 (50% of the total), Omega made 9 trades (45% of the total), and Beta made 1 trade (5% of the total). All of them have met the 5% threshold, so all the strings are returned in an alphabetically ordered array.

▼ Sample Case 1

Sample Input For Custom Testing

```
STDIN      Function
-----
21         → customers[] size n = 21
Alpha      → customers = ["Alpha", "Beta", "Zeta", ..., "Beta"]
Beta
Zeta
Beta
Zeta
Zeta
Epsilon
Beta
Zeta
Beta
Zeta
Beta
Beta
Delta
Zeta
Beta
Zeta
Beta
Zeta
Beta
```

Sample Output

```
Beta
Zeta
```

Explanation

Both Beta and Zeta made *9* trades out of *21* (*42.86%* of the total). Alpha, Delta and Epsilon made *1* trade each, which is only *4.76%* of the total number of trades. Only *Beta and Zeta* meet the threshold.