

Exercises: Arrays

Problems for exercise for the ["PHP Fundamentals" course @ SoftUni](#).

You can check your solutions in [Judge](#).

1. Train

You will be given a count of wagons in a train **n**. On the next **n** lines you will receive how many people are going to get on that wagon. At the end print the whole train and after that the sum of the people in the train.

Examples

Input	Output
3 13 24 8	13 24 8 45
6 3 52 71 13 65 4	3 52 71 13 65 4 208
1 100	100 100

2. Common Elements

Write a program, which prints common elements in two arrays. You have to compare the elements of the second array to the elements of the first.

Examples

Input	Output
Hey hello 2 4 10 hey 4 hello	4 hello
S of t un i of i 10 un	of i un
i love to code code i love to	code i love to

3. Zig-Zag Arrays

Write a program which creates 2 arrays. You will be given an integer **n**. On the next **n** lines you get 2 integers. Form 2 arrays as shown below.

Examples

Input	Output
4 1 5 9 10 31 81 41 20	1 10 31 20 5 9 81 41
2 80 23 31 19	80 19 23 31

4. Array Rotation

Write a program that receives an array and number of rotations you have to perform (first element goes at the end)
Print the resulting array.

Examples

Input	Output
51 47 32 61 21 2	32 61 21 51 47
32 21 61 1 4	32 21 61 1
2 4 15 31 5	4 15 31 2

5. Top Integers

Write a program to find all the top integers in an array. A top integer is an integer which is **bigger** than all the elements to its right.

Examples

Input	Output
1 4 3 2	4 3 2
14 24 3 19 15 17 17	24 19 17
27 19 42 2 13 45 48	48

6. Equal Sums

Write a program that determines if there **exists an element in the array** such that the **sum of the elements on its left is equal** to the **sum of the elements on its right**. If there are **no elements to the left / right**, their **sum is considered to be 0**. Print the **index** that satisfies the required condition or **“no”** if there is no such index.

Examples

Input	Output	Comments
1 2 3 3	2	At a[2] -> left sum = 3, right sum = 3 a[0] + a[1] = a[3]
1 2	no	At a[0] -> left sum = 0, right sum = 2 At a[1] -> left sum = 1, right sum = 0 No such index exists
1	0	At a[0] -> left sum = 0, right sum = 0
1 2 3	no	No such index exists
10 5 5 99 3 4 2 5 1 1 4	3	At a[3] -> left sum = 20, right sum = 20 a[0] + a[1] + a[2] = a[4] + a[5] + a[6] + a[7] + a[8] + a[9] + a[10]

7. Max Sequence of Equal Elements

Write a program that finds the **longest sequence of equal elements** in an array of integers. If several longest sequences exist, print the leftmost one.

Examples

Input	Output
2 1 1 2 3 3 2 2 2 1	2 2 2
1 1 1 2 3 1 3 3	1 1 1
4 4 4 4	4 4 4 4
0 1 1 5 2 2 6 3 3	1 1

8. Magic Sum

Write a program, which prints all unique pairs in an array of integers whose sum is equal to a given number.

Examples

Input	Output
1 7 6 2 19 23 8	1 7 6 2
14 20 60 13 7 19 8 27	14 13 20 7 19 8

9. *Easter Gifts

As a good friend, you decide to buy presents for your friends.

Create a program that helps you plan the gifts for your friends and family. First, you are going to **receive the gifts** you plan on buying on a **single line, separated by space**, in the following **format**:

"{gift₁} {gift₂} {gift₃}... {gift_n}"

Then you will start receiving **commands** until you read the **"No Money"** message. There are **three** possible commands:

- **"OutOfStock {gift}"**
 - Find the gifts with this name in your collection, if there are any, and change their values to "None".
- **"Required {gift} {index}"**
 - Replace the value of the current gift on the given index with this gift, if the index is valid.
- **"JustInCase {gift}"**
 - Replace the value of your last gift with this one.

In the end, print the gifts on a single line, except the ones with value "None", separated by a single space in the following format:

"{gift₁} {gift₂} {gift₃}... {gift_n}"

Input / Constraints

- On the 1st line you are going to receive the names of the gifts, separated by a single space.
- On the next lines, until the "No Money" command is received, you will be receiving commands.
- The input will always be valid.

Output

- Print the gifts in the format described above.

Examples

Input	Output
Eggs StuffedAnimal Cozonac Sweets EasterBunny Eggs Clothes OutOfStock Eggs Required Spoon 2 JustInCase ChocolateEgg No Money	StuffedAnimal Spoon Sweets EasterBunny ChocolateEgg
Comments	
<p>First, we receive the command "OutOfStock" and we need to replace the values of "Eggs" with "None". After this command the list should look like this:</p> <p>None StuffedAnimal Cozonac Sweets EasterBunny None Clothes .</p> <p>Afterwards, we receive the "Required" command and we need to replace the value on the 2nd index of our list with the value "Spoon". The list should look like this:</p> <p>None StuffedAnimal Spoon Sweets EasterBunny None Clothes</p> <p>After, we receive the "JustInCase" command, which means we need to replace the last value in our list with "ChocolateEggs". The list should look like this:</p> <p>None StuffedAnimal Spoon Sweets EasterBunny None ChocolateEggs</p> <p>In the end, we print all of the gifts, except the ones with values "None". This is the result list:</p> <p>StuffedAnimal Spoon Sweets EasterBunny ChocolateEggs</p>	

Input	Output
Sweets Cozonac Clothes Flowers Wine Clothes Eggs Clothes Required Paper 8 OutOfStock Clothes Required Chocolate 2 JustInCase Hat OutOfStock Cable No Money	Sweets Cozonac Chocolate Flowers Wine Eggs Hat