Thuật toán ứng dụng => Hướng dẫn



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## A. 01. ADD

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

Cho hai số nguyên a và b. Yêu cầu viết chương trình tính tổng c=a+b bằng ngôn ngữ C/C++

**Lưu ý giới hạn**:  $a,b < 10^{19}$  dẫn đến c có thể vượt quá khai báo <u>long long</u>

#### Input

Gồm hai dòng, mỗi dòng ghi một số nguyên

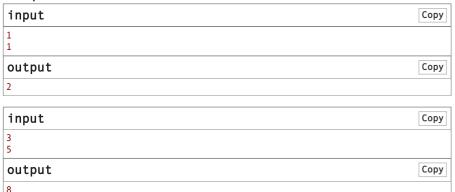
#### **Output**

Một dòng chứa số nguyên là kết quả bài toán

#### Scoring

 $0 \leq a,b \leq 9 imes 10^{18}$  Có 50% test với  $a,b \leq 10^9$ 

#### **Examples**



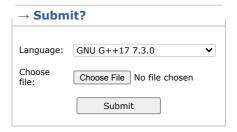




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# Training 1 - Intro - 20201 Finished Practice



→ Last submissions		
Submission	Time	Verdict
93048576	Sep/17/2020 16:09	Perfect result: 100 points
93048522	Sep/17/2020 16:08	Partial result: 80 points
93048183	Sep/17/2020 16:04	Partial result: 60 points

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0460183554HuyNQ | Logout

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## B. 01. SUBSEQMAX

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

Cho mảng  $s=(a_1,\ldots,a_n)$ 

Một đoạn 
$$s(i,j)=(a_i,\ldots,a_j), 1\leq i\leq j\leq n$$

Trọng số 
$$w(i,j) = a_i + a_{i+1} \ldots + a_j$$

Hãy tìm một đoạn trong mảng có trọng số lớn nhất, nghĩa là tổng các số trong đoạn là lớn nhất.

## Input

Dòng thứ nhất chứa một số nguyên  $n \leq 10^6$  .

Dòng thứ hai chứa n số nguyên.

#### **Output**

Ghi ra duy nhất một số nguyên là trọng số lớn nhất tìm được.

#### Example

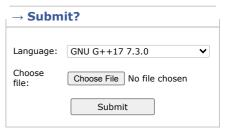


# ĐH Bách Khoa Hà Nội Private Participant ☆





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→ Last submissions		
Submission	Time	Verdict
93420282	Sep/21/2020 18:36	Perfect result: 100 points
93051300	Sep/17/2020 16:42	Wrong answer on test 1
93050819	Sep/17/2020 16:36	Partial result: 20 points

10/4/2020



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#### C. ADDMOD

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

(a+b) mod (10^9+7) a and b is in long long type

#### Input

contains a and b ( $1 \le a, b \le 18446744073709551614$ )

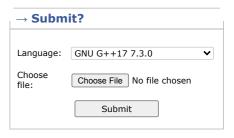
#### Output

(a+b) mod (10^9+7)









ightarrow Last submissions		
Submission	Time	Verdict
93445883	Sep/22/2020 05:25	Perfect result: 120 points
93421371	Sep/21/2020 18:49	Perfect result: 120 points
93421143	Sep/21/2020 18:46	Partial result: 100 points
93420914	Sep/21/2020 18:43	Partial result: 100 points
93049213	Sep/17/2020 16:17	Perfect result: 100 points



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## D. EXPMOD

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

Given two positive integers a and b. Compute  $a^b \mod (10^9 + 7)$ 

#### Input

One line contains two integers a and b ( $1 \leq a,b \leq 18446744073709551614$ )

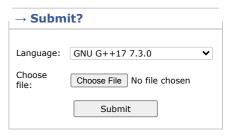
# **Output**

The value  $a^b \mod (10^9 + 7)$ 









ightarrow Last submissions		
Submission	Time	Verdict
93451744	Sep/22/2020 08:10	Perfect result: 120 points
<u>93445561</u>	Sep/22/2020 05:11	Partial result: 100 points
93445545	Sep/22/2020 05:10	Partial result: 100 points
93445485	Sep/22/2020 05:08	Partial result: 20 points
93445200	Sep/22/2020 04:55	Partial result: 20 points
93445079	Sep/22/2020	Partial result: 20

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	04:50	points
93443936	Sep/22/2020 03:56	Partial result: 20 points
93425642	Sep/21/2020 19:42	Partial result: 20 points
93423370	Sep/21/2020 19:14	Partial result: 20 points
93422081	Sep/21/2020 18:58	Partial result: 20 points

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### E. SUMSEQ

time limit per test: 5 seconds memory limit per test: 256 megabytes input: standard input output: standard output

Given a sequence  $a_1, a_2, \ldots, a_n$ . Compute  $S = a_1 + a_2 + \ldots + a_n$ .

$$n \le 10^6, 0 \le a_i \le 10^9$$

## Input

- ullet Line 1: number n of elements
- Line 2: n integers  $a_1, a_2, \ldots, a_n$

#### Output

Unique value  $S \mod (10^9 + 7)$ 

## Example



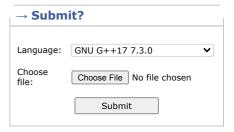




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ightarrow Last submissions		
Submission	Time	Verdict
93126940	Sep/18/2020 17:37	Perfect result: 100 points

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# F. Way Too Long Words

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

Sometimes some words like "localization" or "internationalization" are so long that writing them many times in one text is quite tiresome.

Let's consider a word *too long*, if its length is **strictly more** than 10 characters. All too long words should be replaced with a special abbreviation.

This abbreviation is made like this: we write down the first and the last letter of a word and between them we write the number of letters between the first and the last letters. That number is in decimal system and doesn't contain any leading zeroes.

Thus, "localization" will be spelt as "110n", and "internationalization" will be spelt as "118n".

You are suggested to automatize the process of changing the words with abbreviations. At that all too long words should be replaced by the abbreviation and the words that are not too long should not undergo any changes.

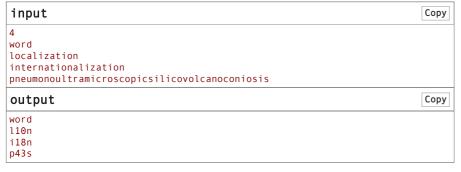
#### Input

The first line contains an integer n ( $1 \le n \le 100$ ). Each of the following n lines contains one word. All the words consist of lowercase Latin letters and possess the lengths of from 1 to 100 characters.

#### Output

Print n lines. The i-th line should contain the result of replacing of the i-th word from the input data.

## **Examples**



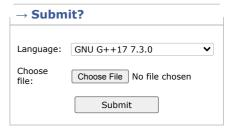




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→ Last submissions		
Submission	Time	Verdict
93422630	Sep/21/2020 19:05	Perfect result: 0 points
93134832	Sep/18/2020 19:11	Perfect result: 0 points
93126145	Sep/18/2020 17:28	Perfect result: 0 points
93125867	Sep/18/2020 17:25	Perfect result: 0 points
93125769	Sep/18/2020 17:24	Perfect result: 0 points
93125326	Sep/18/2020	Wrong answer on

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	17:19	test 1
93125044	Sep/18/2020 17:16	Partial result: 0 points
93124976	Sep/18/2020 17:16	Compilation error
93124154	Sep/18/2020 17:07	Time limit exceeded on test

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