Problem A. MinMax

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given an array of N integer numbers, find the sum of the minimum and maximum numbers.

Input

First line contains an integer number n ($1 \leq N \leq 10^5$) representing the length of the array.

Second line contains n integer numbers ($A_1, A_2, A_3, ..., A_n$) representing the array ($-10^5 \leq A_i \leq 10^5$).

Output

Print one line containing the sum of minimum and maximum numbers in the given array.

Examples

standard input	standard output
5 9 3 7 1 5	10
4 5 6 7 8	13

Problem B. Hello Loops

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Nasser loves to classify things. He has an integer number N and wants to classify all numbers from 1 to N (inclusive) into even and odd numbers. Help him to do that classification.

Input

One line contains an integer number $N(2 \leq N \leq 10^5)$.

Output

Print two lines.

First line contains all odd numbers from 1 to N in increasing order.

Second line contains all even numbers from 1 to N in increasing order.

Examples

standard input	standard output
10	1 3 5 7 9 2 4 6 8 10
7	1 3 5 7 2 4 6

Problem C. Fibonacci

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given a number N. Print the N^{th} Fibonacci number.

Note: In order to create the Fibonacci sequence use the following function:

$fib(0) = 0$

$fib(1) = 1$

$fib(N) = fib(N-1) + fib(N-2)$

Input

Only one line containing a number N $(1 \leq N \leq 50)$.

Output

Print the N^{th} Fibonacci number.

Examples

standard input	standard output
5	5
11	89

Problem D. Exploded Numbers

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Nasser gave Hossam a task to do. The task is to sum two integer numbers. Nasser realized that the task is too easy, so he asked Hossam to print the sum exploded.

Explosion for a number means to put a space between every two digits of that number.

Ex: Explode (1325) = 1 3 2 5

Input

One line containing the two integer numbers A and B ($1 \leq A, B \leq 10^{10}$).

Output

One line containing the exploded sum of the two given numbers.

Examples

standard input	standard output
12 55	6 7
100 53	1 5 3

Problem E. Diameter of 2D

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

The main diameter of a 2D square array of length N is all elements which have (i, i) position where $1 \leq i \leq N$.

You are given a 2D square array, find the sum of its main diameter.

Input

First line contains an integer number n ($1 \leq N \leq 500$) representing the length of 2D square array.

Each of the following n lines contains n integer numbers representing the 2D square array ($1 \leq A_{i,i} \leq 10^9$).

Output

One line containing the sum of main diameter for the given 2D square array.

Example

standard input	standard output
3 4 5 6 1 2 3 7 8 10	16