Lab: Vectors, Lists and Iterators

Please submit your solutions (source code) of all below-described problems in Judge

1. Remove Negatives and Reverse

Write a program that:

- Read a **sequence of numbers**, separated with single space
- **Remove all negative numbers** from given **sequence**
- Print the remaining elements in **reversed order**

Note: In case of no elements left in the list, print "**empty**".

Examples

Input	Output
10 -5 7 9 -33 50	50 9 7 10
7 -2 -10 1	1 7
-1 -2 -3	empty

2. Products

Write a program that:

- Read an **integer number N (count of the products)** from the first line of the console
- Read **N lines of products (string)**
- Print a **numbered list** of all the products **ordered by name**

Examples

Input	Output
4 Potatoes Tomatoes Onions Apples	1.Apples 2.Onions 3.Potatoes 4.Tomatoes
3 Orange Grape Strawberry	1.Grape 2.Orange 3.Strawberry

3. Gauss' Trick

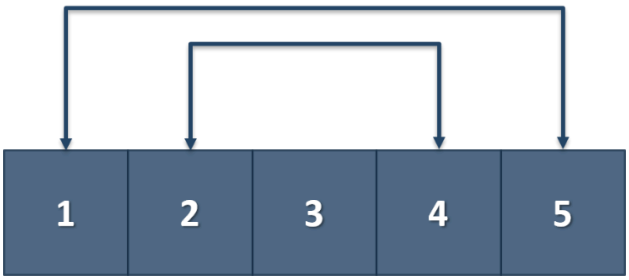
Write a program that:

- Read a **sequence of numbers**, separated with single space

- **Sum** all **numbers in a list** in the following order:

  first + last, first + 1 + last - 1, first + 2 + last - 2, … first + n, last – n

- Print **resulting sequence**



Example

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

4. Merging Sequences

Write a program that:

- Read **two sequences with numbers** from the first two lines of the console
- Create a **result sequence that contains the numbers from both of the lists**
- The **first element should be from the first list**, the **second from the second list** and so on
- Print the **resulting merged sequence**

Note: If the length of the two lists is not equal, just add the remaining elements at the end of the list.

Examples

Input	Output
3 5 2 43 12 3 54 10 23 76 5 34 2 4 12	3 76 5 5 2 34 43 2 12 4 3 12 54 10 23
76 5 34 2 4 12 3 5 2 43 12 3 54 10 23	76 3 5 5 34 2 2 43 4 12 12 3 54 10 23

5. Manipulations

Write a program that:

- Read a list of integers from the first line of the console
- Then until you receive **"end"**, you will be given different **commands:**
  - **`Add {number}`** – add a number to the end of the list
  - **`Remove {number}`** – remove a number from the list
  - **`RemoveAt {index}`** – remove a number at a given index
  - **`Insert {number} {index}`** – insert a number at a given index

Note: All the indices will be valid!

- When you receive the **"end"** command, print the **final state** of the list (**separated by spaces**).

Examples

Input	Output
4 19 2 53 6 43 Add 3 Remove 2 RemoveAt 1 Insert 8 3 end	4 53 6 8 43 3
12 34 100 1 45 2 8 Add 30 Remove 12 Remove 3 RemoveAt 3 Insert 2 3 end	34 100 1 2 2 8 30