

Class template and function template are quite useful in C++. Write a program to read different types of input using the standard library class template vector, and sort them using function template.

Requirement: Use class template vector to store input and write sorting function with function template to handle different types of input parameters.

Prohibited: Use built-in function such as qsort or sort for sorting. Use C-style input/output.

Input

Each case contains two line. The first lines have two integers which in turn correspond to the number of elements n and the data type d of each input, where 0, 1, and 2 represent char, int, and double, respectively. The second line contains n elements of type d separated by space. The input ends with a single zero.

Output

For each case, output the sorted result with end line stream manipulator.

Sample Input

4 0
A C D B
5 0
e c o b a
6 1
1 3 9 7 6 2
4 2
3.20 1.30 4.70 2.10
0

Sample Output

A B C D
a b c e o
1 2 3 6 7 9
1.30 2.10 3.20 4.70