Qwiksort

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

You are given an array containing the integers from 1 to $2n$, each number appearing exactly once. Your goal is to sort the array in increasing order using a special operation called "Qwiksort". In one execution of Qwiksort, you can choose a contiguous range of size n and sort them in increasing order in-place. For example, if $n = 3$ and the array is $[3, 2, 4, 1, 6, 5]$, and you choose to apply Qwiksort to a contiguous range from the second to the fourth position, the array becomes $[3, 1, 2, 4, 6, 5]$.

You can apply the Qwiksort operation zero or more times to sort the array. But due to limitations of our server, you can only do it at most 10 times on a particular array. Please print the operations required to sort the array in increasing order. You do not need to minimize the number of operations. It is guaranteed that it's possible to sort the arrays with at most 10 Qwiksort operations.

Input

First line of input will contain a single integer T ($1 \leq T \leq 40{,}000$) denoting the number of independent test cases. Then the descriptions of T test cases follow. Each test case will start with a line containing an integer n ($2 \leq n \leq 1{,}000$). The next line will contain $2n$ space separated integers, the elements of the array to sort.

Sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, first print the number of Qwiksort operations k ($k \leq 10$) required to sort the array in a line. Then print k lines, each line containing two space separated integers l and r denoting 1-based index specifying the beginning and the end of the range that you applied Qwiksort to.

Note that $1 \leq l \leq r \leq 2n$ and $r - l + 1 = n$ must be ensured.

Example

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