homework2.2 quick sort

Description

請依照下列虛擬碼來實作 quick sort

```
Quicksort(A, p, r)
       If p < r then
              q <- Partition(A, p, r)            /* divide */
              Quicksort(A, p, q-1)        /* conquer */
              Quicksort(A, q+1, r)        /* conquer */
```

```
Partition(A, p, r)
       i = p-1
       for j= p to r-1
              do if A[j] <= A[r]          /* comparison of elem
ents of A*/
              then   i = i+1
                     exchange A[i] and A[j]
       exchange A[i+1] and A[r]
       return i+1
```

若僅考慮元素皆不相同的數字陣列($a_i \neq a_j, \forall i \neq j$)，給定一個長度為 n 的陣列 A，請判斷 quicksort 是否遇到"最差狀況"，即在所有長度為 n 且元素皆不同的陣列中，陣列 A 的元素間的比較次數是否最大。若是，請輸出"Yes"，不是，則輸出"No"。

Input Format

The first line contains a positive integer T (T<=100) - the number of test cases.

For each test case, the first line contains a positive integer N (N <= 10^3) - the size of the array to be sorted. The second line contains N integers to be sorted. Numbers are between -2^31 and 2^31-1, separated by spaces.

It is guaranteed that all the numbers are distinct in each test case.

Output Format

For each test case, output "Yes" or "No" in one line(which means the quicksort is in worst case or not), and output the sorted array (from small to large) in another line.

Separate numbers by spaces.

Hint

Sample Input	Sample Output
3 12 1 2 10 999 888 777 444 555 666 111 2222 1234 12 89 90 91 106 105 100 101 102 103 104 99 88 10 -2147483648 -1 0 2147483641 2147483642 2147483643 2147483644 2147483645 2147483646 2147483647	No 1 2 10 111 444 555 666 777 888 999 1234 2222 Yes 88 89 90 91 99 100 101 102 103 104 105 106 Yes -2147483648 -1 0 2147483641 2147483642 2147483643 2147483644 2147483645 2147483646 2147483647