

[Home](#) » [Compete](#) » [May Challenge 2017](#) » Median of adjacent maximum numbers

Median of adjacent maximum numbers

Problem Code: **MXMEDIAN**[Tweet](#)

All submissions for this problem are available.

Read problems statements in [mandarin chinese](#), [russian](#) and [vietnamese](#) as well.

You are given an array **A** of size $2 * N$ consisting of positive integers, where **N** is an odd number. You can construct an array **B** from **A** as follows, $B[i] = \max(A[2 * i - 1], A[2 * i])$, i.e. **B** array contains the maximum of adjacent pairs of array **A**. Assume that we use 1-based indexing throughout the problem.

You want to maximize the [median](#) of the array **B**. For achieving that, you are allowed to permute the entries of **A**. Find out the maximum median of corresponding **B** array that you can get. Also, find out any permutation for which this maximum is achieved.

Note

Median of an array of size n , where n is odd, is the middle element of the array when it is sorted in non-decreasing order. Note that n being odd, the middle element will be unique, i.e. at index $(n+1) / 2$.

Input

The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows.

The first line of each test case contains an integer **N**.

The second line of each test case contains $2 * N$ space separated integers denoting array **A**.

Output

For each test case, output two lines.

The first of which should contain an integer corresponding to maximum value of the median of array **B** that you can get.

[All Submissions](#)[Successful Submissions](#)

We use cookies to personalise your experience, to provide social media features and to analyse our traffic. We also share information about your use of our site with our social media, advertising and analytics partners who may combine it with other information that you've provided to them or that they've collected from your use of their services. You consent to our cookies if you continue to use our website.

Read our [Privacy Policy](#) and [Terms](#) to know more.

[Save my Cookies](#)

- $1 \leq T \leq 10$
- $1 \leq N \leq 50000$
- $1 \leq A_i \leq 2 * N$

Subtasks

- **Subtask #1** (25 points) : $1 \leq N \leq 3$
- **Subtask #2** (75 points) : original constraints

Example

Input :

```
3
1
1 2
3
1 2 3 4 5 6
3
1 3 3 3 2 2
```

Output :

```
2
1 2
5
1 3 2 5 4 6
3
1 3 3 3 2 2
```

Explanation

Example case 1. There are only two possible permutations of **A**, for both of those **B** will be 2. The median of **B** is 2.

Example case 2. For following permutation of **A**: 1 3 2 5 4 6, the corresponding **B** will be: 3 5 6, whose median is 5, which is the maximum that you can achieve.

Example case 3. For **A**: 1 3 3 3 2 2, the corresponding **B** will be: 3, 3, 2. Its median is 3, which is maximum that you can achieve.

Author:	admin2
Editorial:	https://discuss.codechef.com/problems/MXMEDIAN
Tags:	admin2 , long-contest , may17
Date Added:	5-05-2017
Time Limit:	2 secs
Source Limit:	50000 Bytes
Languages:	C, CPP14, JAVA, PYTH, PYTH 3.5, PYPY, CS2, PAS fpc, PAS gpc, RUBY, PHP, GO, NODEJS, HASK, SCALA, D, PERL, FORT, WSPC, ADA, CAML, ICK, BF, ASM, CLPS, PRLG, ICON, SCM qobi, PIKE, ST, NICE, LUA, BASH, NEM, LISP sbcl, LISP clisp, SCM guile, JS, ERL, TCL, PERL6, TEXT, SCM chicken, CLOJ, FS

[CodeChef is a non-commercial competitive programming community](#)

[About CodeChef](#) | [About Directi](#) | [CEO's Corner](#) | [C-Programming](#) | [Programming Languages](#) | [Contact Us](#)

© 2009 [Directi Group](#). All Rights Reserved. CodeChef uses SPOJ © by [Sphere Research Labs](#)
In order to report copyright violations of any kind, send in an email to copyright@codechef.com

Directi
Intelligent People. Uncommon Ideas.
The time now is: 10:52:11 AM
Your IP: 169.54.6.221

CodeChef - A Platform for Aspiring Programmers

CodeChef was created as a platform to help programmers make it big in the world of algorithms, **computer programming** and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

Practice Section - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in a language of your choice. Our **programming contest** judge accepts solutions in over 35+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

Compete - Monthly Programming Contests and Cook-offs

Here is where you can show off your **computer programming skills**. Take part in our 10 day long monthly coding contest and the shorter format Cook-off **coding contest**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), \$700 (for Global Community) and lots more CodeChef goodies up for grabs.

Programming Tools

[Online IDE](#)

[Upcoming Coding Contests](#)

[Contest Hosting](#)

[Problem Setting](#)

[CodeChef Tutorials](#)

[CodeChef Wiki](#)

Practice Problems

[Easy](#)

[Medium](#)

[Hard](#)

[Challenge](#)

[Peer](#)

[School](#)

[FAQ's](#)

Initiatives

[Go for Gold](#)

[CodeChef for Schools](#)

[Campus Chapters](#)