



The Mean Node

Problem Code: **MEANND**

Tweet

<https://twitter.com/share> Be the first of your friends to like this.

You are provided a doubly circular linked list of n numbers, where the elements of list are all indexed according to their order of insertion, with the indexing starting from 1 at the head node. Given two integers i and k , locate the following three nodes: i) the node N_i which is located at index i , ii) the node N_{i-k} which precedes N_i by k links in the backward direction, and iii) the node N_{i+k} which succeeds N_i by k links in the forward direction. For any $1 \leq j \leq n$, let V_j denote the value contained in the node N_j . You need to insert a new node at the $(i + 1)$ -th position which contains the average of the values V_i , V_{i-k} and V_{i+k} .

For example, consider the circular list of numbers 4 7 10 8 5, and the inputs $i = 2$ and $k = 1$. In this case, we have $V_i = V_2 = 7$, $V_{i-k} = V_1 = 4$ and $V_{i+k} = V_3 = 10$. So, we insert a new node having value $\frac{7+4+10}{3} = 7.00$ immediately after the node N_i . Thus, the resultant list will be as follows: 4 7 7 10 8 5

NOTE: The numbers in the list may not only be integers!

My Submissions

(/B02G2020/status/MEANND/B02G2020/status/ME

All Submissions

Successful Submissions

Input:

- The first line of input contains a single integer N denoting the number of elements in the list.
- Second line contains N space separated numbers in the order, index starting with 1.
- Third line consists of a single integer Q , denoting the number of operations to be performed.
- Each of the subsequent Q lines contains 2 integers i and k where i is the index of the node in the list and k is the position of node relative to the i th node in both directions as explained above.

Output:

Print final list of numbers correct upto 2 decimal places after the q operations have been performed, starting from index 1 which is assumed to be pointed by the head pointer

Constraints

- $1 \leq N \leq 100$
- $1 \leq Q \leq 50$

Sample Input:

```
5
4 7 10 8 5
1
2 1
```

Sample Output:

```
4.00 7.00 7.00 10.00 8.00 5.00
```

Author: [dsaadmin \(/users/dsaadmin/\)](/users/dsaadmin/)
Tags: [dsaadmin \(/tags/problems/dsaadmin/\)](/tags/problems/dsaadmin/)
Date Added: 27-01-2020
Time Limit: 1 secs
Source Limit: 50000 Bytes
Languages: C, CPP14, JAVA, PYTH, PYTH 3.6

Comments ▸

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

[About CodeChef \(/aboutus/\)](/aboutus/) [CEO's Corner \(/ceoscorner/\)](/ceoscorner/) [Contact Us \(/contactus/\)](/contactus/)

CodeChef uses SPOJ © by [Sphere Research Labs \(http://www.sphere-research.com\)](http://www.sphere-research.com)

In order to report copyright violations of any kind, send in an email to [copyright@codechef.com \(mailto:copyright@codechef.com\)](mailto:copyright@codechef.com).

The time now is: 03:39:06 PM
Your IP: 103.210.49.131

[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 two smaller programming challenges at the middle and end 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 \(/problems/easy/\)](/problems/easy/) - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in the language of your choice. Our **programming contest** judge accepts solutions in over 55+ 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 \(/problems/easy/\)](/problems/easy/) - Monthly Programming Contests, Cook-off and Lunchtime

Here is where you can show off your **computer programming skills**. Take part in our 10 days long monthly coding contest and the shorter format Cook-off and Lunchtime **coding contests**. 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 \(/ide/\)](/ide/)
[Upcoming Coding Contests \(/contests#FutureContests\)](/contests#FutureContests)
[Contest Hosting \(/hostyourcontest\)](/hostyourcontest/)
[Problem Setting \(/problemsetting\)](/problemsetting/)
[CodeChef Tutorials \(/wiki/tutorials\)](/wiki/tutorials/)
[CodeChef Wiki \(/wiki\)](/wiki/)

[Practice Problems](#)

[Easy \(/problems/easy/\)](/problems/easy/)
[Medium \(/problems/medium/\)](/problems/medium/)
[Hard \(/problems/Hard/\)](/problems/Hard/)
[Challenge \(/problems/challenge/\)](/problems/challenge/)
[Peer \(/problems/extcontest\)](/problems/extcontest/)
[School \(/problems/school/\)](/problems/school/)
[FAQ's \(/wiki/fag\)](/wiki/fag/)

[Initiatives](#)

[Go for Gold \(/goforgold/\)](/goforgold/)
[CodeChef for Schools \(/school\)](/school/)
[Campus Chapters \(/campus_chapter/about\)](/campus_chapter/about/)
[CodeChef for Business \(/corporates\)](/corporates/)

[Policy](#)

[Terms of Service \(/terms\)](/terms/)
[Privacy Policy \(/privacy-policy\)](/privacy-policy/)
[Refund Policy \(/refund-policy\)](/refund-policy/)
[Code of Conduct \(/codeofconduct\)](/codeofconduct/)
[Bug Bounty Program \(/bug-bounty-program\)](/bug-bounty-program/)