

Advanced Coding a.k.a. CODIESTA

Event Focus: We are targeting the pro coders who have ready to deploy their knowledge about algorithms and data-structures to solve coding problems of different levels of difficulty.

Rules(same for both days):

1. It will be a team event. A team should have maximum of two students from the same college.
2. Use of laptops, books, phones are allowed and talking to other contestants other than his/her team member may lead to disqualification.
3. Opening any other website other than the website provided will lead to disqualification.
4. No restriction in programming language i.e. a contestant can use any language of his/her choice.

Day 1:

Event Synopsis: This will be an elimination round , only those teams with sound coding knowledge will proceed to the final Round on Day 2. There are total of 3 sets of questions distributed from 9:45 a.m. till 5:15 p.m. Each set will have **4 problems** and a team needs to solve them within 1 hour and 30 minutes. Top 10-15 teams from each set will be selected for final round.

Challenge: All the participants will be given a set of **4 Coding Questions** to solve, question will test their in-depth knowledge of **basic** algorithms and data structure.

Contest will be hosted Online on **HackerRank.com**

Sample Question:

Check if a string can be converted to a palindrome by shifting the characters in $O(n)$.

Contributors:

Set 1: Vishal Shrivastava, Bobby Anand.

Set 2: Santosh Kumar Shaw, Namrata Nandy.

Set 3: Sampat Kr Ghosh, Soumyajit Das.

Day 2:

FINAL ROUND

Event Synopsis: This will be final round, only those teams who qualified round 1 will be allowed to participate in this round. There will be a total of 6 problems and time allowed to solve this problem is 2.5 - 3 hours. There is only one set of problems.

Challenge: All the participants will be given a set of **6 Coding Questions** to solve, question will test their in-depth knowledge of **complex** algorithms and data structure. Contest will be hosted Online on **CodeChef.com**

Sample Question:

You are initially given an array of N integers. Given this array, you have to perform 2 kinds of operations:

1 $L\ R$: You are given 2 integers L and R . You need to return the sum of all the elements with indices between L and R (both inclusive). That is, if the elements currently in the array are $a_1, a_2, a_3, \dots, a_n$, you need to return the following sum : $a_L + a_{L+1} + a_{L+2} \dots + a_R$.

2 X : You are given a single integer X . Add this element to the beginning of the array. After this operation, X will now become a_1 , the old a_1 will now become a_2 , and so on. The size of the array will increase by 1.

Input

The first line contains a single integer N , the number of elements initially in the array.

This is followed by a line containing N space separated integers.

The next line contains a single integer Q , the number of operations you will be asked to perform.

This is followed by Q lines of queries.

Output

For each query of type 1, output the return value on a new line. No output needs to be printed for queries of type 2.

Constraints

- $1 \leq L \leq R \leq N \leq 10^5$
- $1 \leq Q \leq 10^5$
- $1 \leq X \leq 10^9$
- $1 \leq A_i \leq 10^9$

Complexity of total code should be maximum of $O(n)$ in order to pass all test cases.

Contributors: Sampat Kr Ghosh.

Outcome:

Competitive Coding helps students to clear coding round of many top MNC companies to get better job opportunities.

The winner will prove that he/she can use their programming knowledge to code and solve coding problem with given time complexity and space complexity.

Help:

Students will be made familiar with competitive coding.

Requirements:

- Internet Access in the Lab.
- Allocate Three Lab for our event.

Target Participants: Event is open to all students of any college.

Event heads: Sampat Kr Ghosh, Santosh Kumar Shaw.

Volunteers: Bobby Anand, Namrata Nandy, Soumyajit das, Vishal Shrivastava.