

# Y-20 Beginner Contest Editorial

## SECRET GAMES

### Problem Idea - Anshul Garg

A simple and easy problem to introduce i-o format in competitive coding. Competitive coding involves your code being evaluated by an online judge so you need to strictly follow the input-output format as described in the problem statement.

Solution : We need to check if the range of the rocket is greater than or equal to twice the distance between the earth and the moon.

Code:

<https://ideone.com/Low9xF>

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## STREET MIST

### Problem Idea - Palak Agarwal

In the question, we can see the operations and we can note that,  $a[i] + a[i+1] = b[i]$ . In the case using the initial condition, which is  $b[n] = a[n]$ , we can figure out the whole initial array with the given array.

Code:

<https://ideone.com/xUQt32>

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## WIZARDING WORLD

### Problem Idea - Palak Agarwal

There are more than one way to solve this problem, but if we just enumerate how many operations would be of first type and the second type the judge will give a TLE due to heavy constraints.

So we need to apply the greedy approach here, in which we will make the use of the second operation as much as possible and then the first operation will be performed according to the remaining diamonds. This solution takes and runs in  $O(1)$  time.

Code:

<https://ideone.com/3G3lib>

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## WWCD(EASY)

### Problem Idea - Anshul garg & Ayush sharma

Hint: Read the concept of frequency array.

Solution: Create a frequency array (let us denote it by FA) for the varieties of chickens, in the frequency array ith array position (FA[i]) depicts the total number of shops selling the particular variety of chicken. The max value of  $i \cdot \text{FA}[i]$  is the total weight of chicken purchased, let this max value occur for xth variety of chicken . Finally print the shop numbers which keep the xth chicken variety.

Code: <https://pastebin.com/FQAyinPK>

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## WWCD(Hard)

### Problem Idea - Ayush Sharma

You can store all identical integers on that similar index and check the maximum one. And for a harder version of this problem try using map data structure to store integers.

Code: <https://pastebin.com/S0kZQJPq>

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## XOR of Matrix??

### Problem Idea - Gaurav Chuahan

In this question instead of calculating XOR , a better approach was to count the number of 1 in each row and column since the XOR of any binary array is 1 only if there are odd number of ones present , if the count of any 1 in any row or column is odd and there is at least one 0 in that row or column then you may increment the total number of 1 by one.

Due to stronger test cases fast I/O was required and yes python codes were being accepted (if correct :- )

Code :

<https://ideone.com/Y3OHID>

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## IN-glish TEST

### Problem Idea – Ayush Sharma

An efficient approach is to use a prefix sum array to efficiently answer the query. Let **pre[i][j]** store the occurrence of a character **j** till the **i**-th index. For every query occurrence of a character **j** will be **pre[r][j] – pre[l-1][j]** (if  $l > 0$ ). Find the lexicographically smallest character that appears the maximum number of times by iterating the 26 lowercase letters.

Code: <https://pastebin.com/9nQHobHR>

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## Prime Numbers

### Problem Idea – Ayush Sharma

Firstly identify the range which includes all the prime numbers. And to get all to sub array first take a subarray with 0 numbers on left of range and 0 on right then 1,2,3 and so on until end. So the answer is product of number of elements on left to product of numbers on right.

Code: <https://pastebin.com/FPGFdASH>

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## IAS-YAS

### Problem Idea - Anshul Garg

Hint : Read the concept of window sliding technique.

Solution : Simply use window sliding technique and store all possible sums in a STL set(c++), now use the lower\_bound function of STL set over each query. Do give it a read if you don't know about set's inbuilt lower\_bound.

Code: <https://ideone.com/WnCSqG>

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## Let's Play FLAMES!!

### Problem Idea - Gaurav Chuahan

Just count the remaining words after striking the matching words and iterate over "FLAMES" 5 times. There was just implementation in this problem

Code:

<https://ideone.com/r7nHpp>

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## Missile Attack

### Problem Idea - Vishwas Modi

The first thing to note is the sequence of missile numbers is not region-dependent, it is relative, so you can take whatever region 0 to 1 or 0 to 8 you want.

#### # Hint 1

When the person moves right, his left region will be destroyed and his position before moving to the right will be the most left position he will ever be on. So in the first iteration of the string, we can print the indexes of every 'r' (1 base indexing).

#### # Hint 2

When the person moves left, his right region will be destroyed and his position before moving to the left will be the most right position he will ever be in. So for every 'l' store the index in a vector and print the vector's reverse.

You can observe this by the diagram given in the question.

PS. If we brute force assuming left, right and middle positions, it will be correct for smaller test cases, but for large test cases coordinates will become very small and the solution will be wrong.

Code : <https://ideone.com/UrY7kS>

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## Mammy's Post

In this question we have to find the cities which are not in any cycle.

For this test case

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

Cycles are

1->2->1

3->4->3

5->6

So cities 1,2,3,4 are in cycle and 5,6 are not.

We have to perform DFS on every un-visited city and check if we can come back to that city, then all the cities in between are in cycle and if not we need to push them into a vector.

One thing to observe is for the test case

```
4 3
1 2
2 3
4 1
```

If we perform DFS on node 1, it will mark cities 1,2,3 as visited and then we perform DFS on 4, as 1 is visited solution will become wrong as 4 and 1 will be considered in a cycle. Many of you got wrong in this case :-( .

So after completing DFS every time, mark all those nodes in the visited array as 2.

Code: <https://ideone.com/HA1a57>

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