



TCS CodeVita™ Season 12

MockVita questions have been rolled over as
Practice questions.

Register now to participate.

Unite in the arena. Prepare for victory.

[Register Now!](#)



6

Hours to prove your mettle



20000

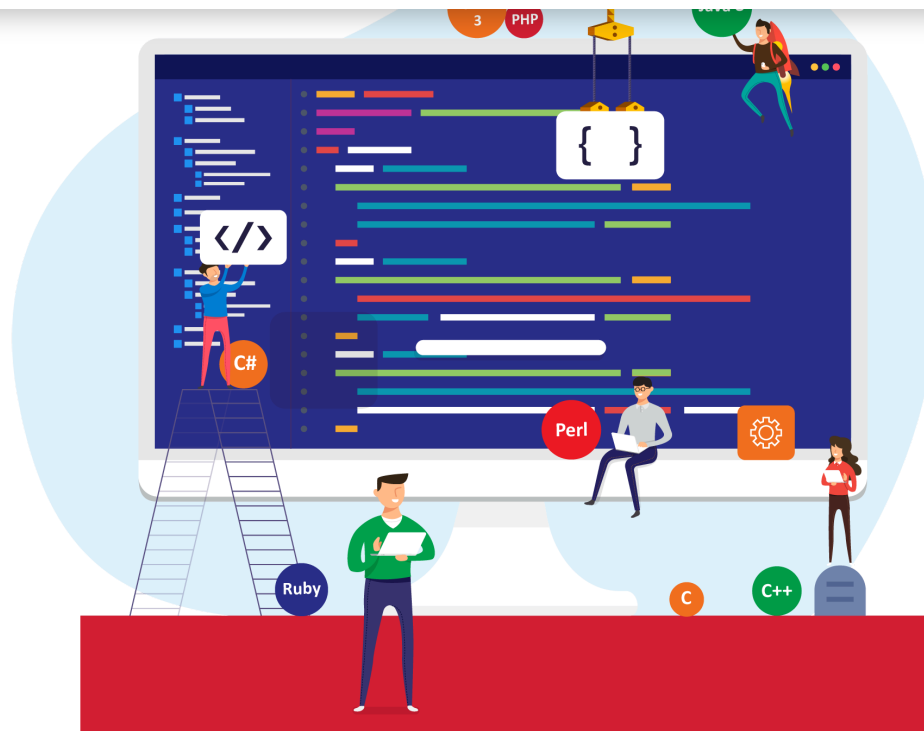
USD in prize money



1

Global Ranking List to top coders

ABOUT US



Get ready to unlock the world of programming excitement with CodeVita!

Launched in 2012, TCS CodeVita is a global programming competition designed to identify top coders around the world. It's a dynamic contest that unites people from diverse backgrounds and cultures, shattering boundaries. The "Guinness Book of World Records" listed TCS CodeVita as 'The world's largest programming contest' with registrations from 98 countries/regions, proving it as a true global phenomenon.

In Season 11, participation soared to 444k+ contestants, representing 3,500+ institutes. Imagine participants from 10 regions engaging in an electrifying battle during the grand finale!

This year, we are "United by Code", celebrating a global community bound by the shared passion for programming. This season 12 promises more thrilling challenges and unforgettable experiences, highlighting the unity and diversity of coders worldwide.

Are you intrigued? Brace yourself for another extraordinary journey with TCS CodeVita, where coding transcends boundaries.



What's in it for students?

- Top 3 coders to win total prize money of USD 20,000
- Chance to explore exciting careers* with one of the world's most powerful brands
- Chance to compete with some of the best coders in the world
- Platform to showcase your programming skills
- Finalists stand a chance to travel to India for the season 12 live grand finale experience

*as applicable in the respective geographies



Eligibility

Current graduation or post-graduation students who are

- Studying in any stream of science or engineering
- Expecting to complete their course in the year of 2025, 2026, 2027 or 2028
- From any recognized institute across the globe



THE JOURNEY

Journey of a thousand miles begins with one step.

— Lao Tzu



Registration

To get started, click on the register button.



MockVitas

MockVitas are just like actual rounds to give demo of the actual contest.



Rounds

Clear the actual rounds to move further in your CodeVita journey.



SAMPLE QUESTIONS

On A Cube

Sorting Boxes

Sport Stadium

Water Cistern

Square Free Numbers

Codu and Sum Love

Obstacle Game

It is the sports event of the year for the residents of Sportsville. Their team had finally made it to the finals of the Bowls League Cup.

Problem Description

It is the sports event of the year for the residents of Sportsville. Their team had finally made it to the finals of the Bowls League Cup.



Unfortunately, there was rain the previous night and some of the seats are still wet. Some of the contingent love Bowls so much and are excited enough not to mind sitting on a wet chair. There are k of these. However, others want to sit on a dry seat so that they can enjoy the match more.

The contingent wants to minimize the distance between the first and last person in the row so that they can still conduct Mexican Waves, and other forms of support for their team.

Because they want to sit together, any block of 15 or more contiguous unoccupied seats between the first person sitting and the last person sitting is unacceptable.

There are M blocks of seats, starting with a dry block, with alternating wet and dry blocks. The number of seats in each block is known.

Given S (the number of seats in the row), N (the size of the contingent), k (the number of the contingent who are willing to sit in a wet seat), and the distribution of wet and dry blocks, write a program to find the minimum distance between the first and the last member of the contingent in the row.

Input

The first line contains four comma separated numbers representing S , N , k and M respectively.

The second line is a set of M comma separated numbers representing the number of seats in each block of seats. The first block is dry, and the remaining blocks alternate between wet and dry.

Output

One integer representing the minimum distance between the first and last member of the row. If it is impossible to seat all the members according to their preferences, and with the unoccupied seat restriction, the result should be 0.

Constraints



Complex

Time Limit (secs)

1

Examples

Example 1

Input

100,50,5,6

3,10,30,5,30,22

Output

49

Explanation

$S = 100$, and there are 100 seats in the row. $N=50$, and there are 50 members in the contingent. $k=5$, and 5 people (out of the 50) do not mind sitting on wet seats. $M=6$, and there are 6 blocks of seats. The number of seats in each block is 3,10,30,5,30 and 22, with the first block of 3 seats being dry, the next 10 being wet and so on.

One possible positioning to achieve the minimum distance is to place the a set of 30 people in seats 14 to 43 (the dry block), the 5 people who do not mind sitting on wet seats in the wet block 44 to 48, and the remaining 15 people (of the 50) in the seats 49 to 63. There is no unoccupied seat between the first person and the last person, and so this is acceptable. The distance between the last allocated seat (63) and the first allocated seat (14), is 49. This is the output.

Example 2

Input



Output

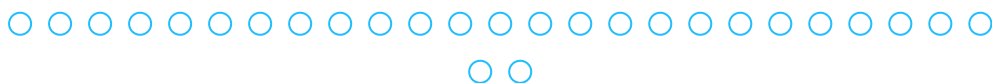
64

Explanation

$S = 100$, and there are 100 seats in the row. $N=50$, and there are 50 members in the contingent. $k=5$, and 5 people (out of the 50) do not mind sitting on wet seats. $M=8$, and there are 8 blocks of seats.

One possible positioning is to have a set of 10 people sit in the dry block 11 – 20, the 5 people who will accept wet seats in seats 21 – 25 (in the wet block 21 – 30), another 20 people in the dry block 31 – 50, leave the wet block 51-60 empty, and seat the remaining 15 people in seats 61 – 75 (in the dry block 61-80). There is a block of 5 unoccupied seats (26-30) between the first person and the last person. As this is not more than 15, this is acceptable. The distance from the last allocated seat (75) and the first allocated seat (11) is 64. This is the result.

GALLERY





FREQUENTLY ASKED QUESTIONS

In doubt? Don't worry! Check out our Frequently Asked Questions enclosed below.

How do I register and login for the contest?

What if I accidentally delete my Microsoft Authenticator account?

Can I go back to the welcome page after starting to answer the coding problems?

Do I have to attempt the questions in serial order?

Where can I see the list of languages and compilers with their version?

If I move to question no. 2 without submitting question 1, does the timer continue for Question 1?

If I have referred/used a code from the internet, do I have to declare the same?

Where can I check the status of questions submitted by me?

If I close my browser will the codes written be saved on the system?

How long before a session will expire?



What is the purpose of Code Attribution?

What do different answer statuses mean?

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