

Guidelines of the Online Judge System

0. Register your account

Access the CodeForces website with URL <https://codeforces.com/enter>.

If you already have a CodeForces account, log in directly. If not, Click “Register” to register an account, then log in.



Fill in the form to login into Codeforces.

You can use [Gmail](#), [Facebook](#) or [ICPC](#) as an alternative way to enter.

Login into Codeforces

Handle/Email

Password

Remember me for a month

[Forgot your password?](#)

[Use Gmail](#) | [Use Facebook](#) | [Use ICPC](#)

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The only programming contests Web 2.0 platform
Server time: Sep/28/2020 02:05:22^{UTC-7} (h1).
Desktop version, switch to [mobile version](#).
[Privacy Policy](#)

Supported by



1. Join Our Group as a Participant

After login, click here to join our group: <https://codeforces.com/group/d1x0Mh7PUS/contests>

Remember to choose “Participant” as Membership type. (The default option is “Spectator”, which will not allow you to submit your code.) Then click “Join”.

The screenshot shows the Codeforces website interface for a group. At the top, there is a navigation bar with links for HOME, TOP, CONTESTS, GYM, PROBLEMSSET, GROUPS, RATING, EDU, API, CALENDAR, and HELP. Below this is a search bar. The main content area is divided into two sections: a table of group contests and a member management panel.

Name	Start	Length		
CS218 Homework 3	Jan/27/2021 18:00UTC-8	14:00:00	Before start 4 weeks	Prepared by syhlalala Before registration 4 weeks
CS 218 Homework 2	Jan/13/2021 18:00UTC-8	14:00:00	Before start 2 weeks	Prepared by syhlalala Before registration 2 weeks
CS218, Homework 1 programming	Jan/04/2021 18:00UTC-8	14:05:59	Before start 6 days	Prepared by syhlalala Before registration 6 days

* Highlighted contests are not public

CS218
Private
Spectator
→ Member management
You are not group member yet, but can request group join.
Membership type: Participant
Join

Here you can see the home page of our group, each programming assignment will be released at the corresponding start time. Usually, this is the time that the corresponding assignment is released.

Once it's released, the page will look like this:

The screenshot shows the Codeforces website interface for a group, similar to the previous one, but with a contest in progress. The table of group contests is updated, and the member management panel shows the user is now a member.

Name	Start	Length		
CS218 Homework 3	Jan/27/2021 18:00UTC-8	14:00:00	Before start 4 weeks	Prepared by syhlalala Before registration 4 weeks
CS 218 Homework 2	Jan/13/2021 18:00UTC-8	14:00:00	Before start 2 weeks	Prepared by syhlalala Before registration 2 weeks
CS218, Homework 1 programming	Dec/28/2020 18:00UTC-8	14:05:59	Current standings Running 13 days	Prepared by syhlalala Register » x0 Until closing 13 days

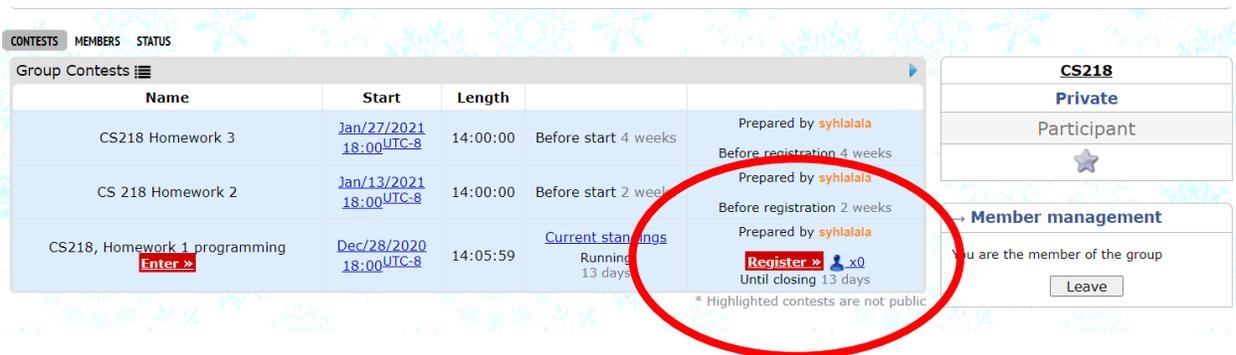
* Highlighted contests are not public

CS218
Private
Participant
→ Member management
You are the member of the group
Leave

2. Registration for the Contests

After it's released, you can see the page above.

Click “Register” to register for the contest. You should be registered for the contest to be able to submit.

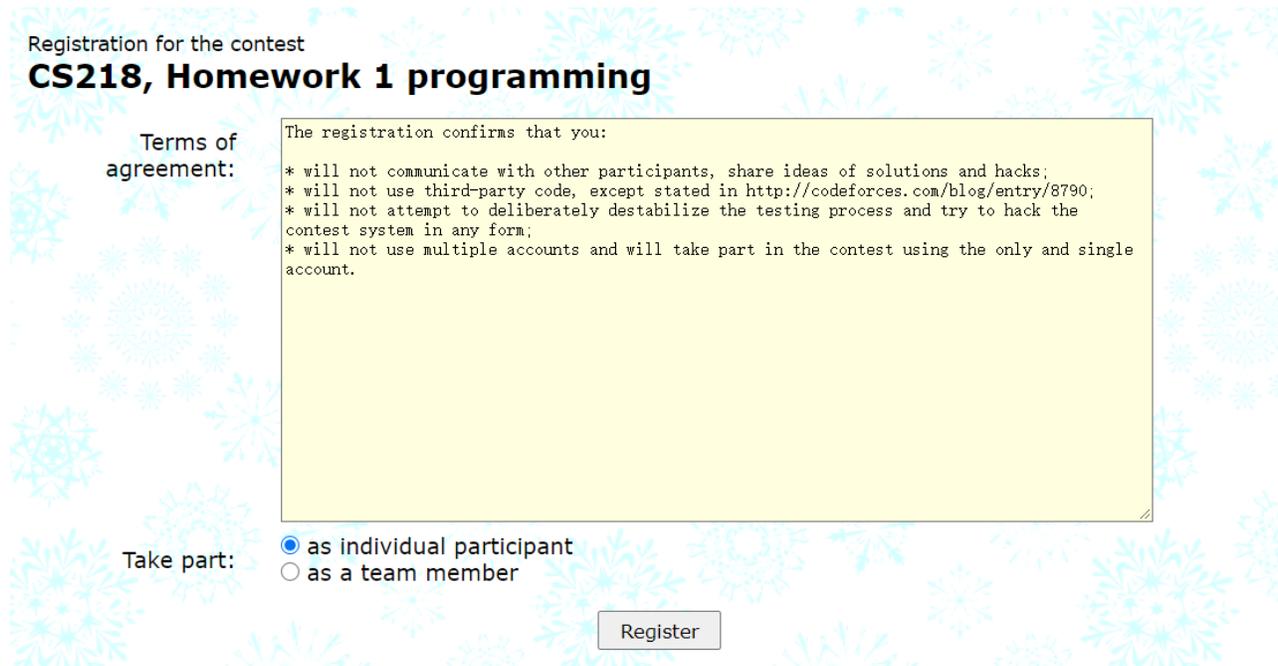


The screenshot shows the 'Group Contests' page on Codeforces. A table lists three contests:

Name	Start	Length	Status	Prepared by
CS218 Homework 3	Jan/27/2021 18:00 UTC-8	14:00:00	Before start 4 weeks	syhlalala
CS 218 Homework 2	Jan/13/2021 18:00 UTC-8	14:00:00	Before start 2 weeks	syhlalala
CS218, Homework 1 programming	Dec/28/2020 18:00 UTC-8	14:05:59	Current standings Running 13 days	syhlalala

The 'Register' button for the 'CS218, Homework 1 programming' contest is highlighted with a red circle. To the right, there is a sidebar for the 'CS218' group, showing it is 'Private' and a 'Participant'. Below that, there is a 'Member management' section with a 'Leave' button.

Continue clicking “Register”, then you will receive a message that “You have been successfully registered”.



The registration page for the contest 'CS218, Homework 1 programming' is shown. It includes a 'Terms of agreement' section with the following text:

The registration confirms that you:

- * will not communicate with other participants, share ideas of solutions and hacks;
- * will not use third-party code, except stated in <http://codeforces.com/blog/entry/8790>;
- * will not attempt to deliberately destabilize the testing process and try to hack the contest system in any form;
- * will not use multiple accounts and will take part in the contest using the only and single account.

Below the terms, there are radio buttons for 'Take part:':

as individual participant
 as a team member

A 'Register' button is located at the bottom of the page.

3. Start Programming

Before starting programming, make sure you can see "Registration Completed" displayed here, which means you have successfully registered. If not, try to repeat the registration step.

Then, **click “Enter”**.

CONTESTS MEMBERS STATUS

Group Contests

Name	Start	Length		
CS218 Homework 3	Jan/27/2021 18:00UTC-8	14:00:00	Before start 4 weeks	Prepared by syhlalala Before registration 4 weeks
CS 218 Homework 2	Jan/13/2021 18:00UTC-8	14:00:00	Before start 2 weeks	Prepared by syhlalala Before registration 2 weeks
CS218 Homework 1 programming	Dec/28/2020 18:00UTC-8	14:05:59	Current standings Running 13 days	Prepared by syhlalala Registration completed x1

* Highlighted contests are not public

You will see the programming problems for this assignment.

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

Problems

#	Name			
A	Merge Them!	standard input/output 2 s, 256 MB		x1
B	Share candies	standard input/output 2 s, 256 MB		
C	Sort the train	standard input/output 2 s, 256 MB		

[Complete problemset](#)

[Ask a question](#)

Questions about problems

#	Party	When	Question	Answer
No items				

Click on the name to enter. Then you can see the whole problem.

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

A. Merge Them!

time limit per test: 2.0 s
memory limit per test: 256 megabytes
input: standard input
output: standard output

It's not easy to be a teacher - because you need to make all students happy. Yihan is asked to order a list of students by their exam score (from lowest to highest). Now all the students stands in a row in front of her. She has learned the merge sort algorithm, so that's exactly how she plans to do: she will divide the students into the left half and the right half, sort each of them respectively, and then merge them into a sorted row.

The core part in merge sort is to merge two sorted arrays (subset of students) into one. However, students are incoordinate because some of them are unhappy to be sorted. Generally, anytime two subsets of students A and B are merged, the student with the lowest score in $A \cup B$, let's call the student X , will be very unhappy because now everyone knows that he or she didn't do well in the exam. Yihan has to give X some candies to make X happy again. In particular, the number of candies X needs is the difference between X 's score and the highest score in the merged result $A \cup B$. If there are multiple such students (i.e., with the same lowest score), they all need the same number of candies.

Yihan knows the initial order of the students and their scores. She wants to know how many candies she needs to prepare to finish the task of merge-sorting all the students's score, while keeping everyone happy.

Input
The first line is a single integer $n(1 \leq n \leq 10^6)$. Assume n is a power of 2 so that in merge sort we can always divide it into exactly halves.
In each of the next n lines, there is an integer that is the score s_i of the i -th student $0 < s_i \leq 2^{31}$.

CS218
Private
Participant
★

CS218, Homework 1 programming
Contest is running
13 days
Contestant
★

→ Submit?

Language: GNU GCC C11 5.1.0

Choose file: 选择文件 未选择任何文件

Submit

To submit your code, **click “Submit Code”**. **Don't forget to choose your language.**

HOME TOP CONTESTS GYM PROBLEMS SET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS **SUBMIT CODE** MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

Submit solution

CS218, Homework 1 programming

Problem: Choose problem

Language: GNU GCC C11 5.1.0

Source code:

1

CS218
Private
Participant
★

CS218, Homework 1 programming
Contest is running
13 days
Contestant
★

→ Your points

	Points
A	
B	
C	

You can also submit a file. After finishing your code, click the **“Submit”** button to submit your answer.

Then you can see whether your answer is correct. If all test cases are passed, it will be judged as **“Accepted”**. If not, means you failed some test cases. You should go back to the **“Submit Code”** page, review your code, modify it, and resubmit it.

You won't be able to see the test data before the contest ends.

My Submissions

#	When	Who	Problem	Lang	Verdict	Time	Memory
94070335	01:18:52	██████████	1 - Merge Them!	Java 11	Wrong answer on test 2	171 ms	0 KB
94061848	01:08:08	██████	1 - Merge Them!	GNU C++17	Accepted	202 ms	500 KB

"Accepted" means your answer passed all test cases

"Wrong answer..." means you failed some of the test cases

With some of the core operations and functions covered above, you can try clicking on other buttons to explore other features that have not been introduced!

Happy Coding!