Codeforces Online Judge

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Codeforces Online Judge Guide

Lecture Agenda

We will discuss in this lecture the following topics

1- Codeforces Online Judge

2- How to Create an Account

3- How to Solve a Problem

4- How to Learn from Other Solutions

5- How to Compete in Contest

6- How to Learn from Contest Tutorial


Let's
START UP

Lecture Agenda

Section 1: Codeforces Online Judge

Section 2: How to Create an Account

Section 3: How to Solve a Problem

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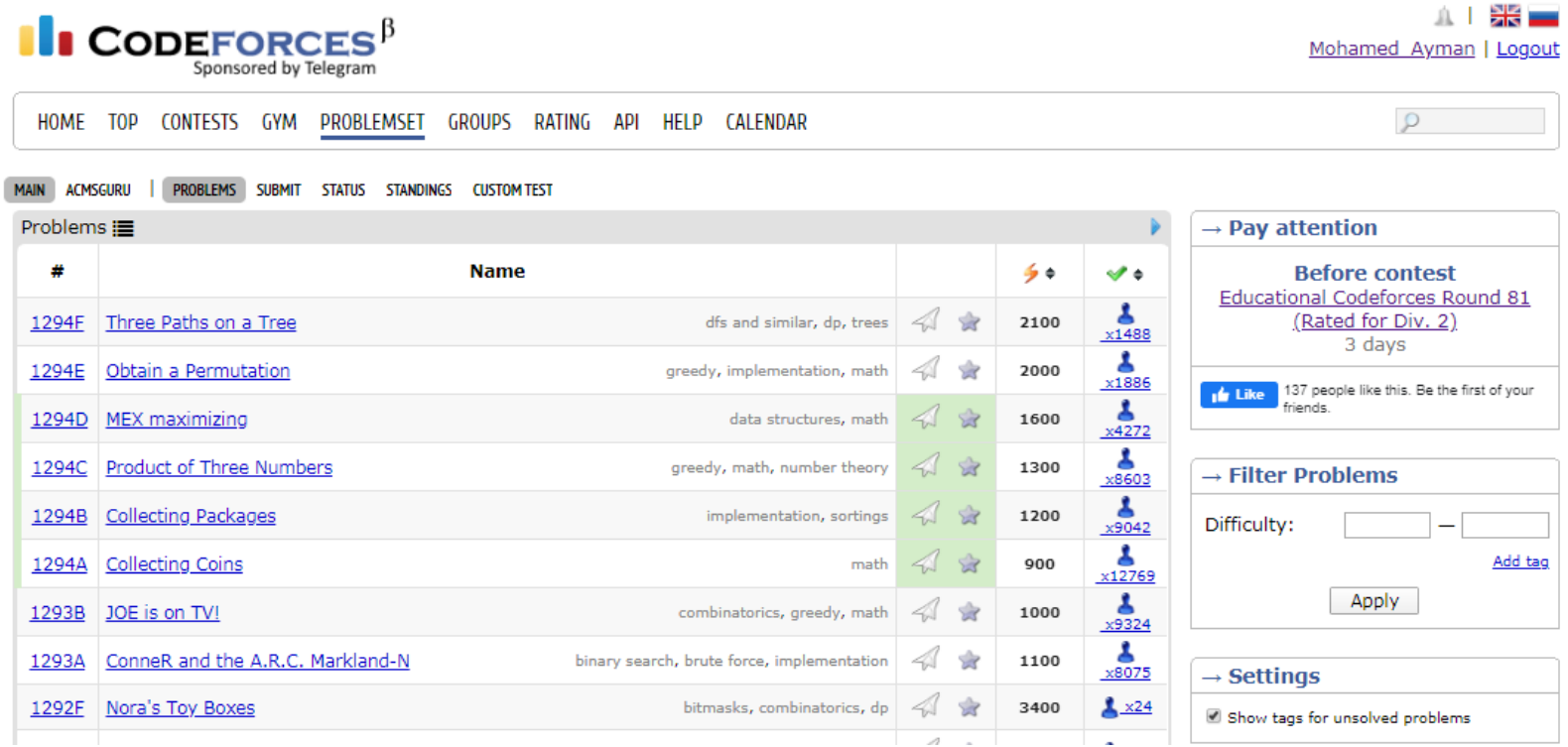
Section 6: How to Learn from Contest Tutorial

Codeforces Online Judge

Codeforces is a website that hosts competitive programming contests. It is maintained by a group of competitive programmers from ITMO University led by Mikhail Mirzayanov.

Codeforces Online Judge



Lecture Agenda

- ✔ Section 1: Codeforces Online Judge
- **Section 2: How to Create an Account**
- Section 3: How to Solve a Problem
- Section 4: How to Learn from Other Solutions
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- Section 6: How to Learn from Contest Tutorial

How to Create an Account

1- Go To Registration

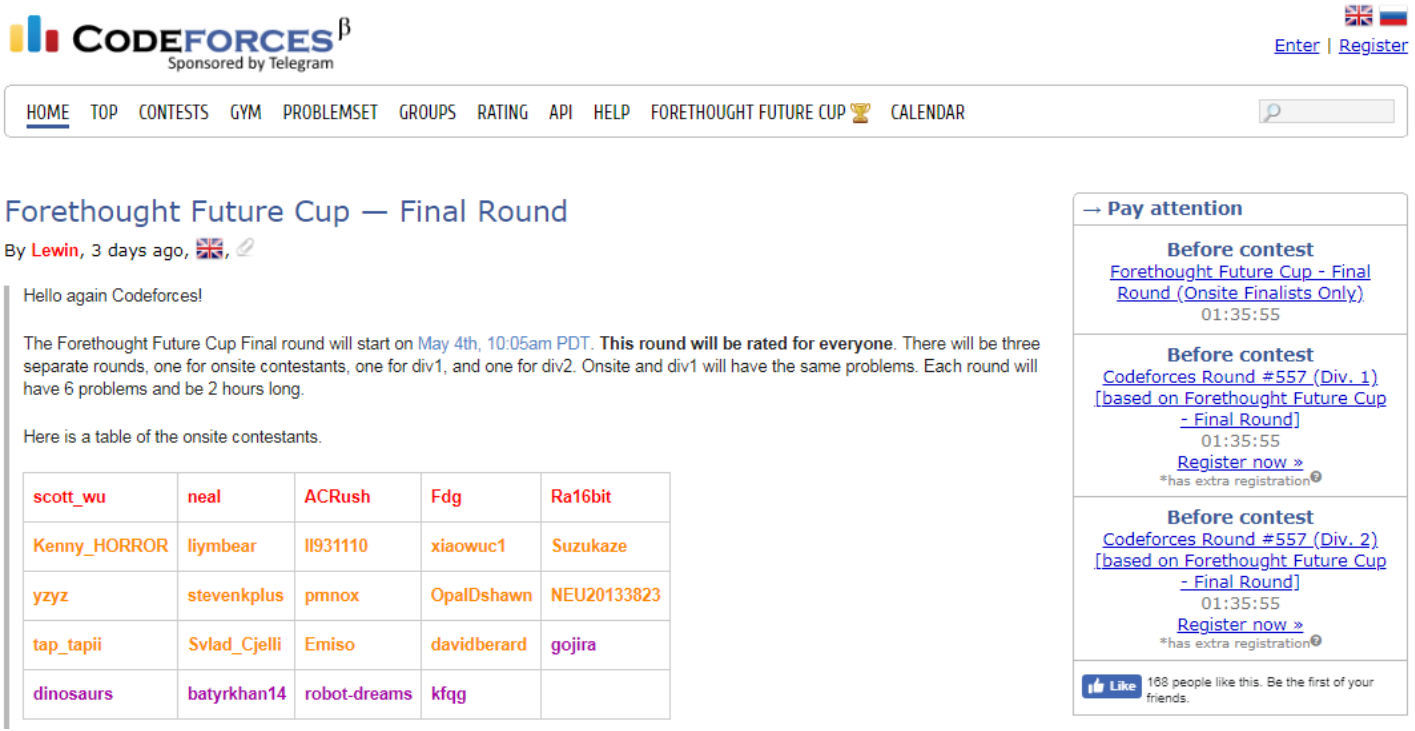
2- Fill Your Data

3- Verify your Registration from your Mail

4- Log-in Your Account

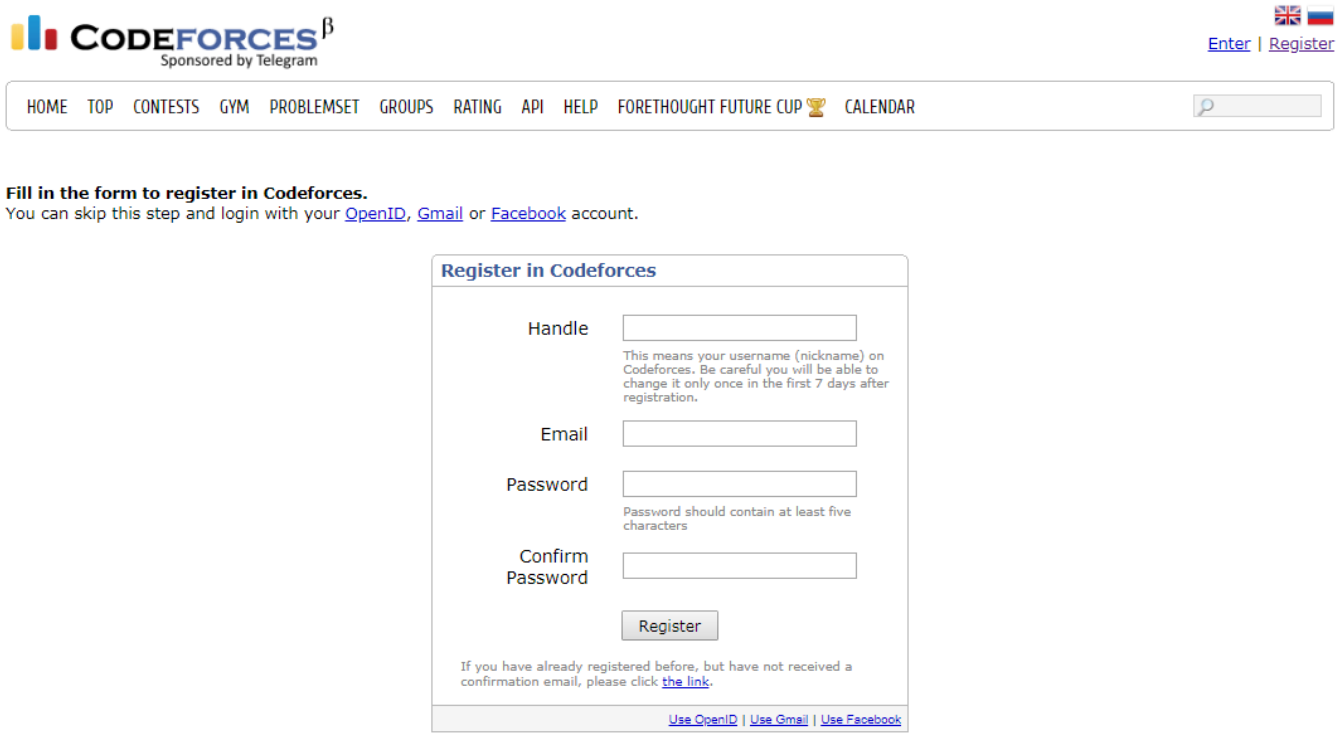
Codeforces Registration

Select Register from this Link: codeforces.com



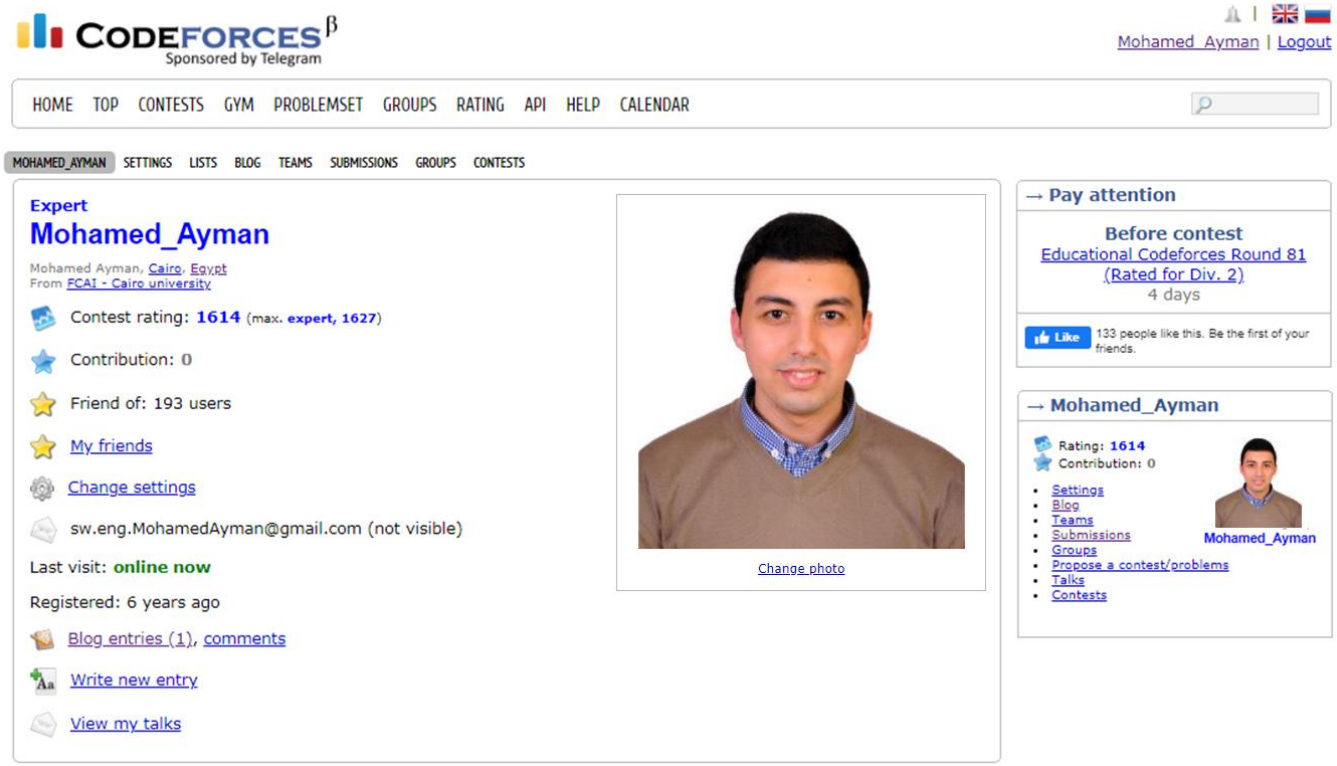
Registration Form

Fill your data and you will receive a verification mail



Your Profile

After verification your account from your mail, your profile will be appeared from you



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How to Solve a Problem

1- Read the Problem Statement

2- Think for a Problem Solution

3- Implement an Efficient & Correct Algorithm

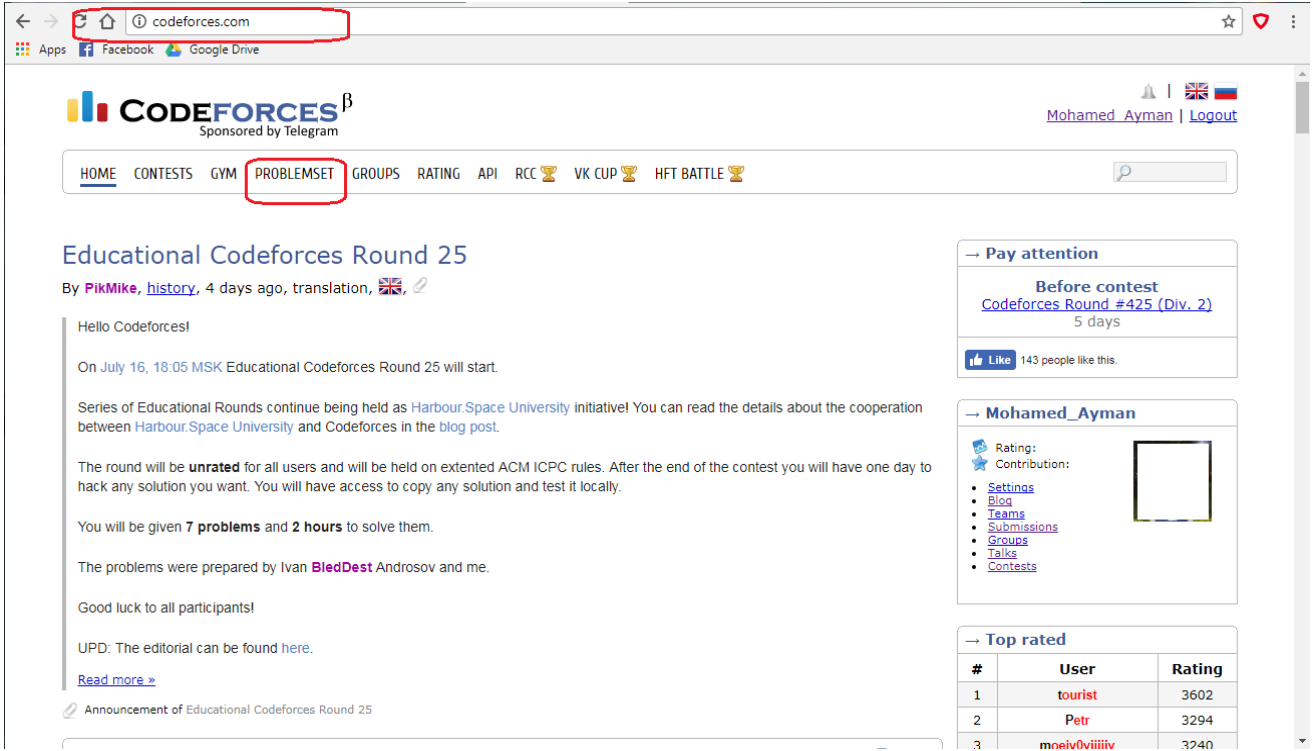
4- Test Your Solution

5- Submit Your Solution

6- Go to Step 1 Till You Get Accepted

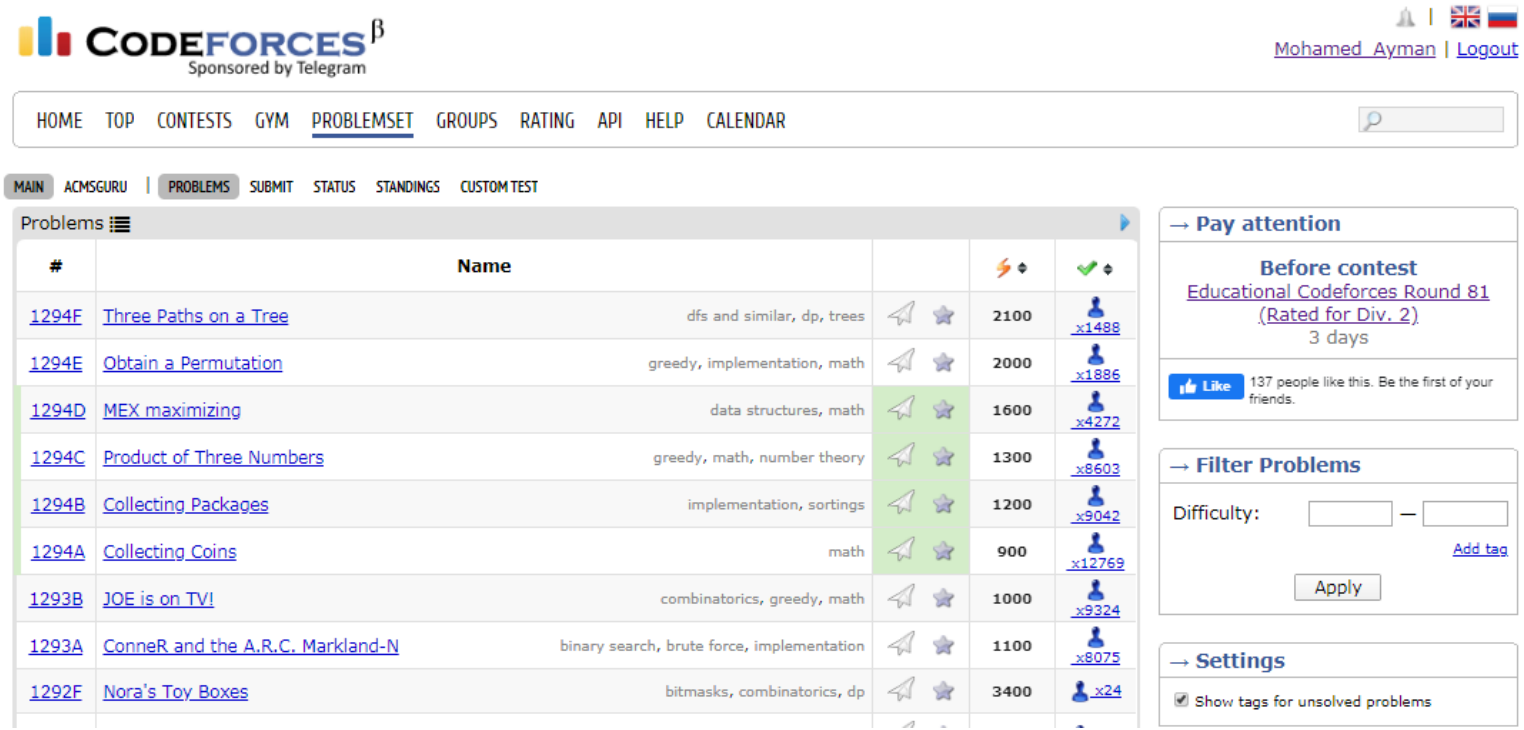
Codeforces Wall

Select Problemset Tab to get all problems in codeforces



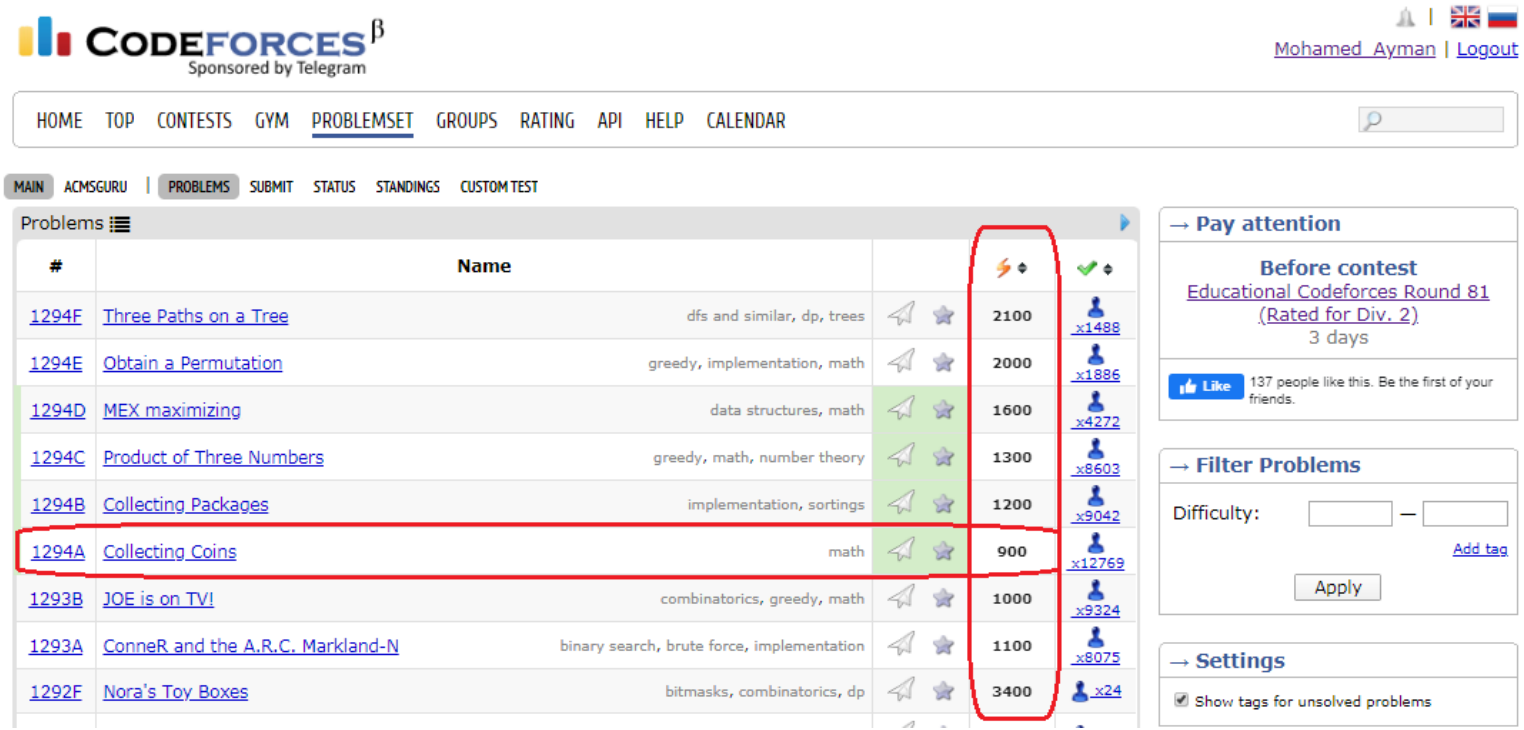
Problem Set Tab

Any problem has an ID, name, difficulty degree and number of users who solved it.



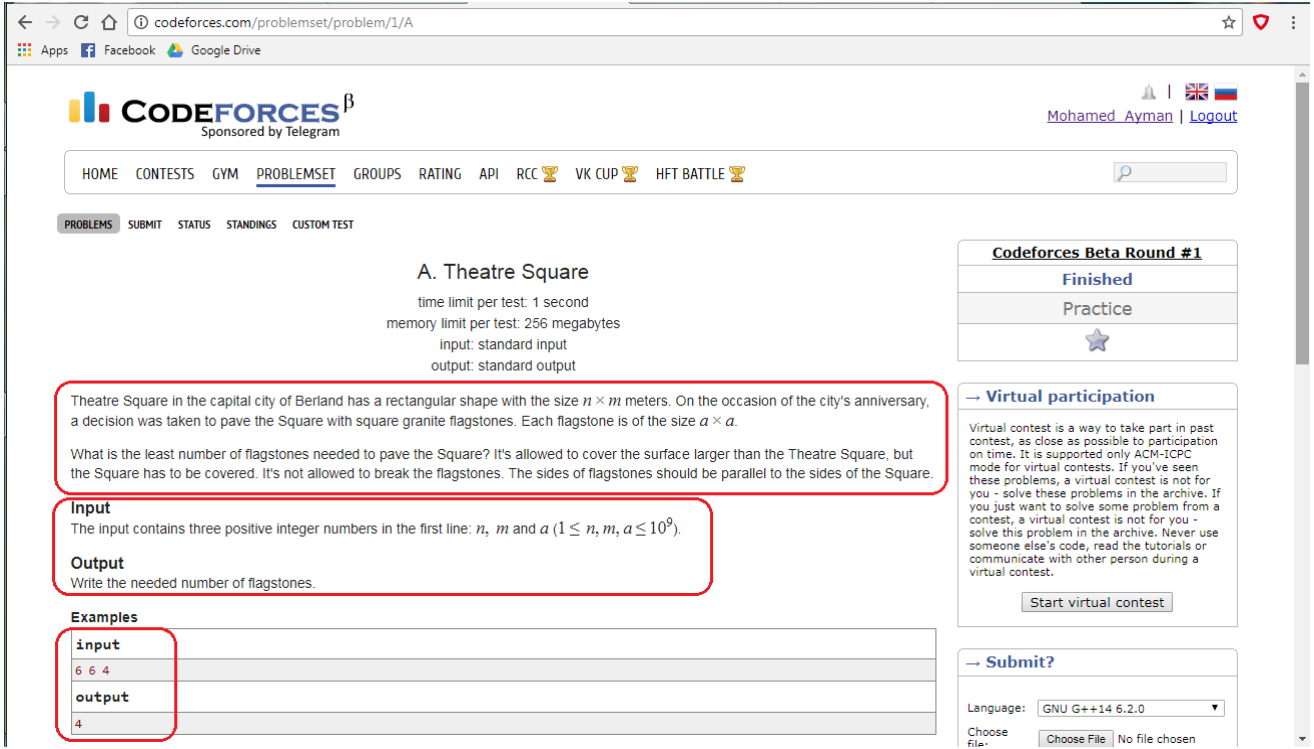
Problem Set Tab

When you select [difficulty degree] the problems will be sorted according to it's difficulty

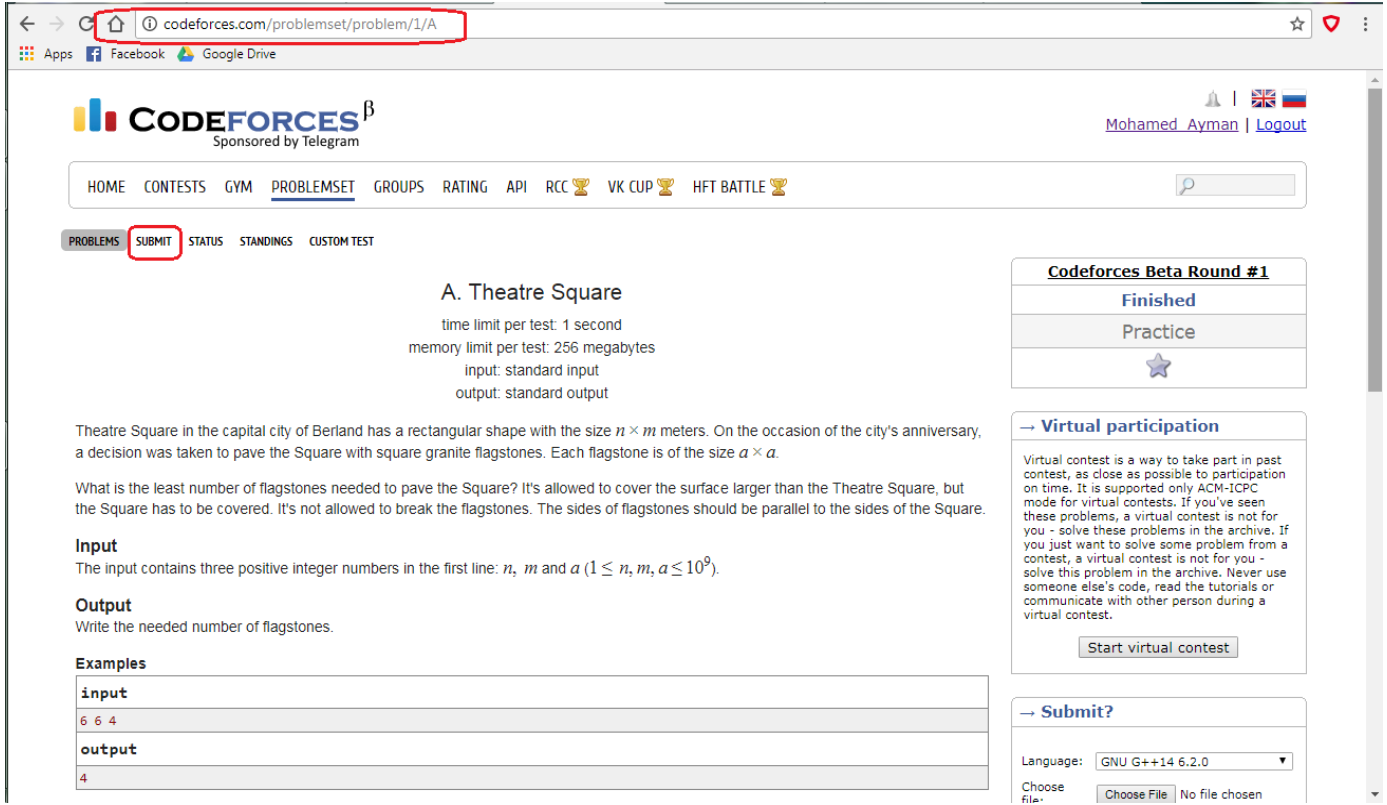


Problem Body

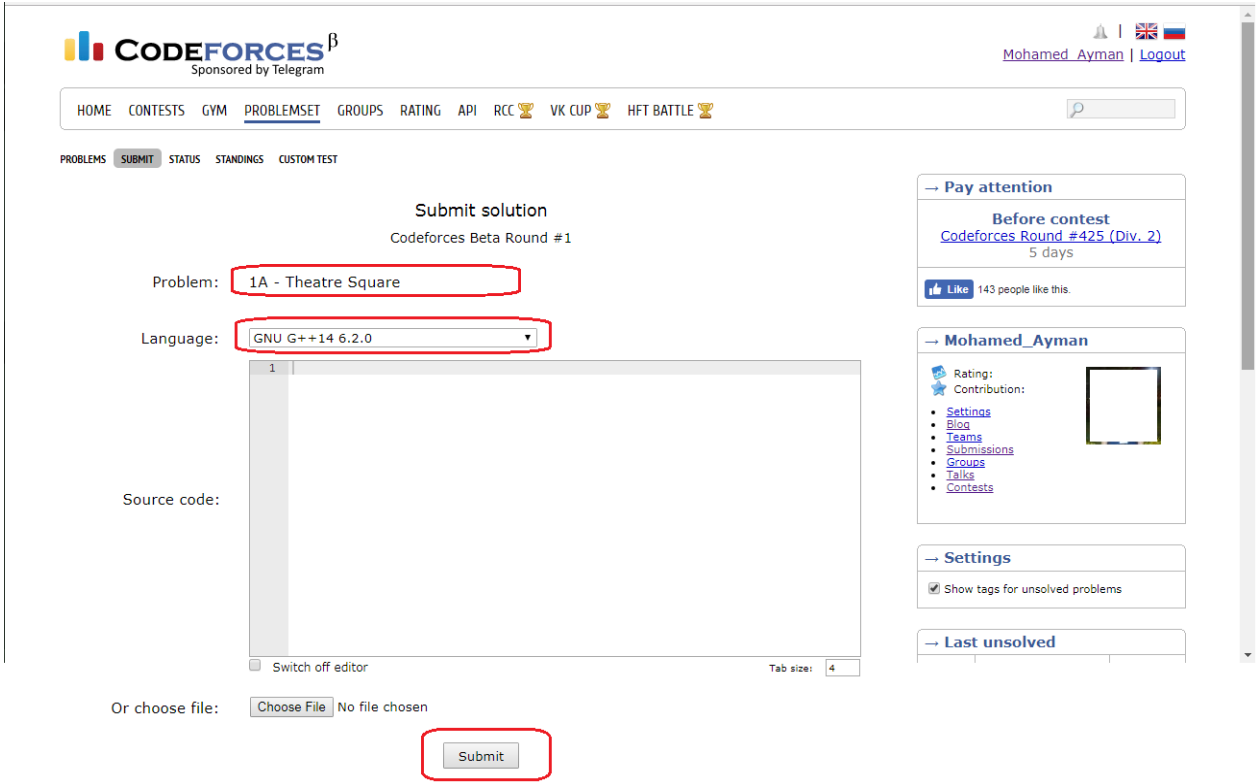
Any problem has a body description and input-output constraint and test case(s)



Submitting Problem

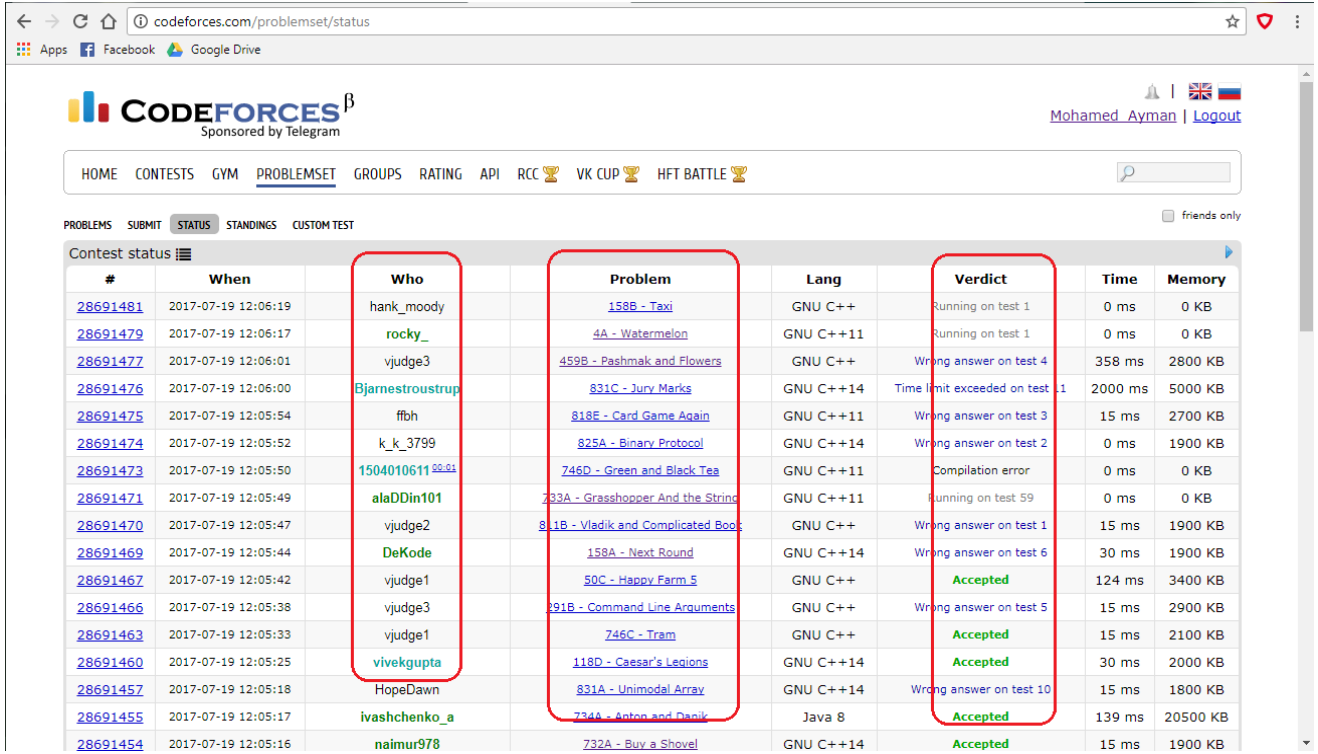


Submitting Problem



Problem Verdict

Your submitted algorithm will be accepted or fail in specific test case



codeforces.com/problemset/status

Apps Facebook Google Drive

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HOME CONTESTS GYM PROBLEMSET GROUPS RATING API RCC VK CUP HFT BATTLE

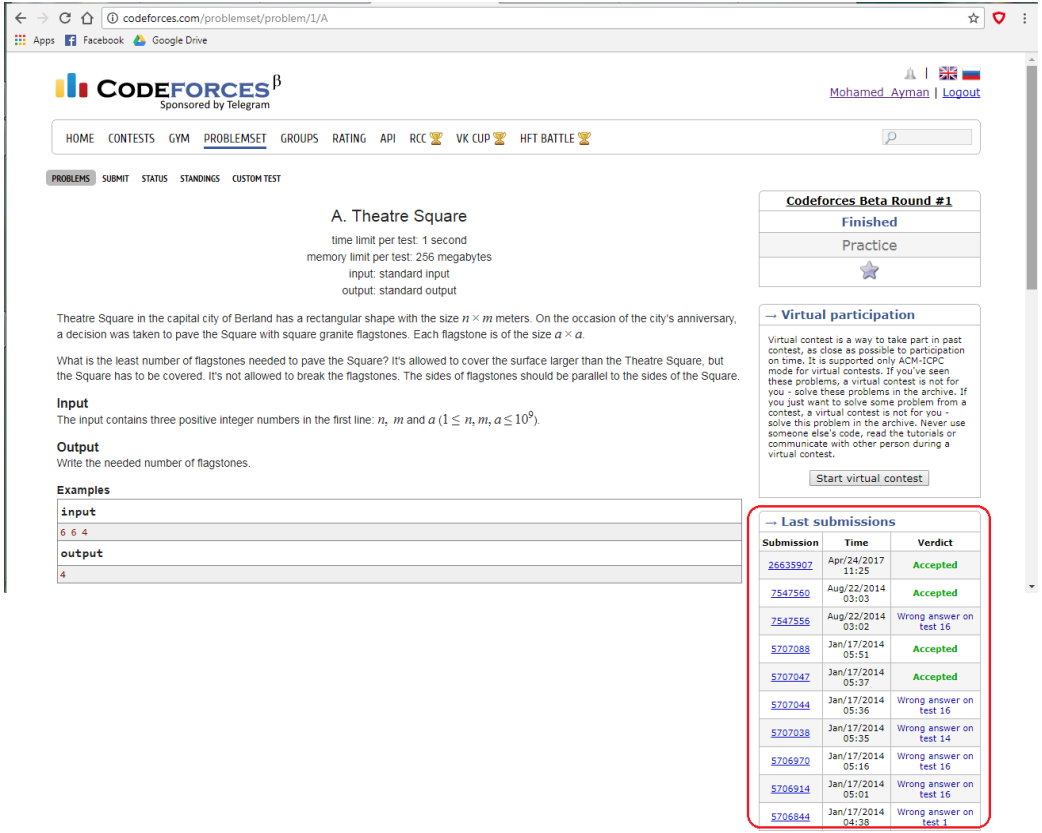
PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

friends only

Contest status

#	When	Who	Problem	Lang	Verdict	Time	Memory
28691481	2017-07-19 12:06:19	hank_moody	158B - Taxi	GNU C++	Running on test 1	0 ms	0 KB
28691479	2017-07-19 12:06:17	rocky_	4A - Watermelon	GNU C++11	Running on test 1	0 ms	0 KB
28691477	2017-07-19 12:06:01	vjudge3	459B - Pashmak and Flowers	GNU C++	Wrong answer on test 4	358 ms	2800 KB
28691476	2017-07-19 12:06:00	Bjarnestroustrup	831C - Jury Marks	GNU C++14	Time limit exceeded on test 11	2000 ms	5000 KB
28691475	2017-07-19 12:05:54	ffbh	818E - Card Game Again	GNU C++11	Wrong answer on test 3	15 ms	2700 KB
28691474	2017-07-19 12:05:52	k_k_3799	825A - Binary Protocol	GNU C++14	Wrong answer on test 2	0 ms	1900 KB
28691473	2017-07-19 12:05:50	1504010611 00:01	746D - Green and Black Tea	GNU C++11	Compilation error	0 ms	0 KB
28691471	2017-07-19 12:05:49	alaDDin101	733A - Grasshopper And the String	GNU C++11	Running on test 59	0 ms	0 KB
28691470	2017-07-19 12:05:47	vjudge2	811B - Vladik and Complicated Book	GNU C++	Wrong answer on test 1	15 ms	1900 KB
28691469	2017-07-19 12:05:44	DeKode	158A - Next Round	GNU C++14	Wrong answer on test 6	30 ms	1900 KB
28691467	2017-07-19 12:05:42	vjudge1	50C - Happy Farm 5	GNU C++	Accepted	124 ms	3400 KB
28691466	2017-07-19 12:05:38	vjudge3	291B - Command Line Arguments	GNU C++	Wrong answer on test 5	15 ms	2900 KB
28691463	2017-07-19 12:05:33	vjudge1	746C - Tram	GNU C++	Accepted	15 ms	2100 KB
28691460	2017-07-19 12:05:25	vivekgupta	118D - Caesar's Legions	GNU C++14	Accepted	30 ms	2000 KB
28691457	2017-07-19 12:05:18	HopeDawn	831A - Unimodal Array	GNU C++14	Wrong answer on test 10	15 ms	1800 KB
28691455	2017-07-19 12:05:17	ivashchenko_a	734A - Anton and Danik	Java 8	Accepted	139 ms	20500 KB
28691454	2017-07-19 12:05:16	naimur978	732A - Buy a Shovel	GNU C++14	Accepted	15 ms	1900 KB

History of Problem Submission



Any Problem has a list of your submissions with it's judge.

- Accepted
- Wrong Answer
- Time Limit Exceeded
- Memory Limit Exceeded
- Compilation error

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How to Learn from Other Solutions

1- Go To Round Problems

2- Go To Status Tab

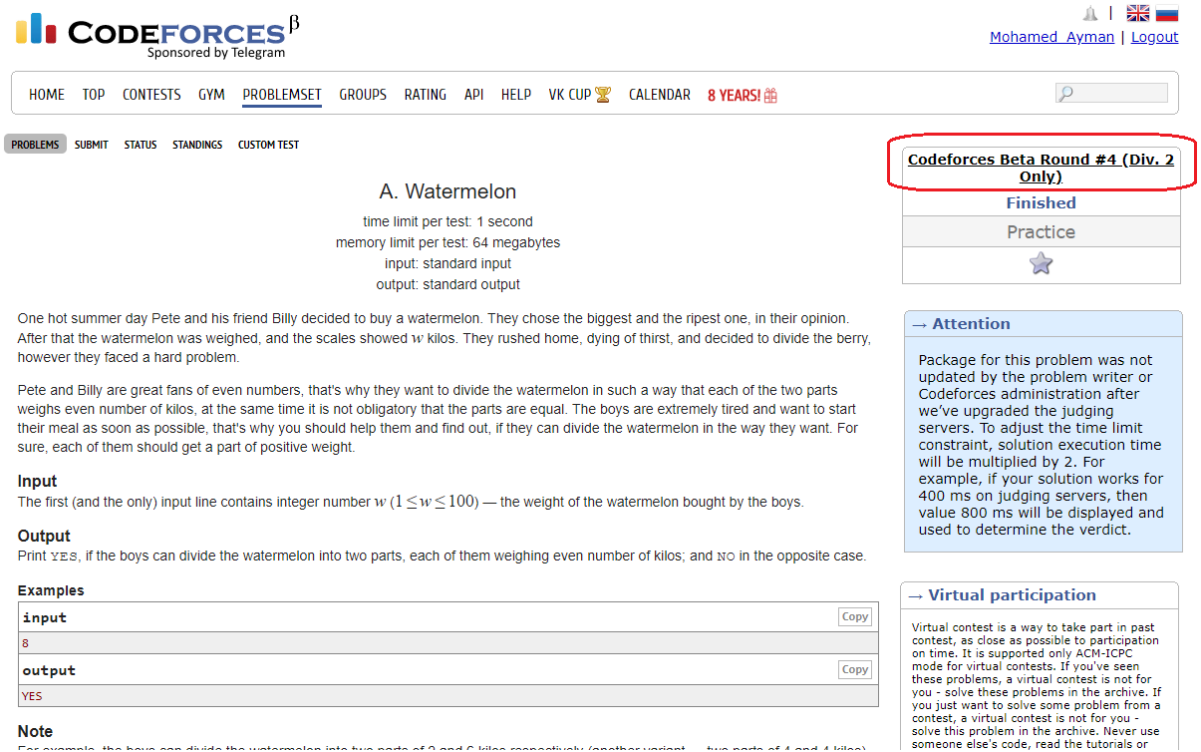
3- Put You Criteria to Filter Submissions

4- Applying Your Filter

5- Show Your Target Solution

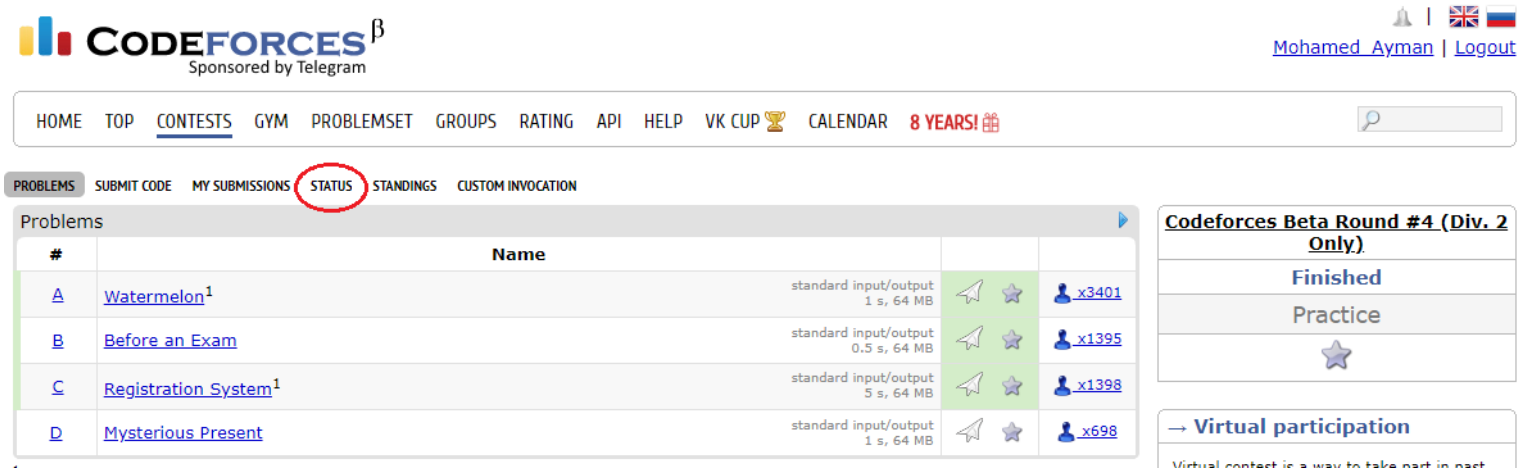
Round Number in Problem Body

Any problem has a round number at the top of right side, click it



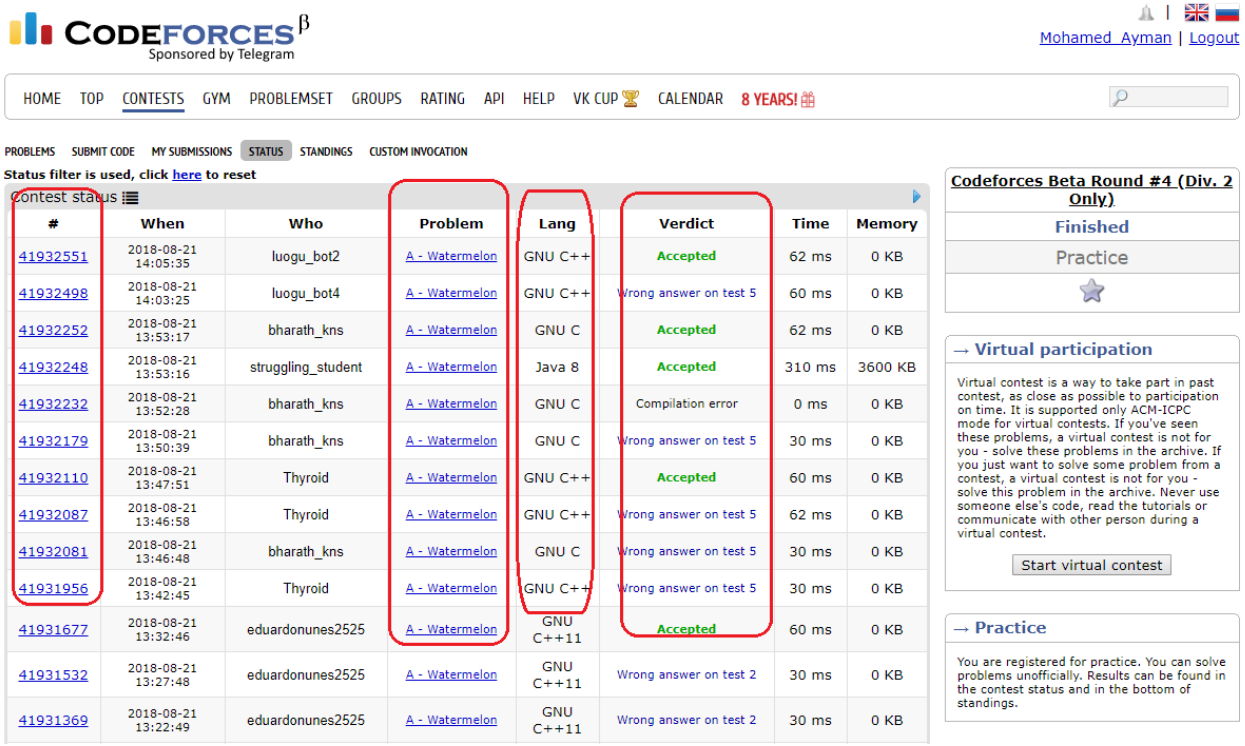
Problems of The Round

Select STATUS tab



Status of The Round

This page will show all results of round for all languages and all verdicts and all round problems



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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

Status filter is used, click here to reset

Contest status

#	When	Who	Problem	Lang	Verdict	Time	Memory
41932551	2018-08-21 14:05:35	luogu_bot2	A - Watermelon	GNU C++	Accepted	62 ms	0 KB
41932498	2018-08-21 14:03:25	luogu_bot4	A - Watermelon	GNU C++	Wrong answer on test 5	60 ms	0 KB
41932252	2018-08-21 13:53:17	bharath_kns	A - Watermelon	GNU C	Accepted	62 ms	0 KB
41932248	2018-08-21 13:53:16	struggling_student	A - Watermelon	Java 8	Accepted	310 ms	3600 KB
41932232	2018-08-21 13:52:28	bharath_kns	A - Watermelon	GNU C	Compilation error	0 ms	0 KB
41932179	2018-08-21 13:50:39	bharath_kns	A - Watermelon	GNU C	Wrong answer on test 5	30 ms	0 KB
41932110	2018-08-21 13:47:51	Thyroid	A - Watermelon	GNU C++	Accepted	60 ms	0 KB
41932087	2018-08-21 13:46:58	Thyroid	A - Watermelon	GNU C++	Wrong answer on test 5	62 ms	0 KB
41932081	2018-08-21 13:46:48	bharath_kns	A - Watermelon	GNU C	Wrong answer on test 5	30 ms	0 KB
41931956	2018-08-21 13:42:45	Thyroid	A - Watermelon	GNU C++	Wrong answer on test 5	30 ms	0 KB
41931677	2018-08-21 13:32:46	eduardonunes2525	A - Watermelon	GNU C++11	Accepted	60 ms	0 KB
41931532	2018-08-21 13:27:48	eduardonunes2525	A - Watermelon	GNU C++11	Wrong answer on test 2	30 ms	0 KB
41931369	2018-08-21 13:22:49	eduardonunes2525	A - Watermelon	GNU C++11	Wrong answer on test 2	30 ms	0 KB

Codeforces Beta Round #4 (Div. 2 Only)

Finished

Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

Filtration of The Round Status

You can filter results for specific problem and specific language and specific verdict

41932179	2018-08-21 13:50:39	bharath_kns	A - Watermelon	GNU C	Wrong answer on test 5	30 ms	0 KB
41932110	2018-08-21 13:47:51	Thyroid	A - Watermelon	GNU C++	Accepted	60 ms	0 KB
41932087	2018-08-21 13:46:58	Thyroid	A - Watermelon	GNU C++	Wrong answer on test 5	62 ms	0 KB
41932081	2018-08-21 13:46:48	bharath_kns	A - Watermelon	GNU C	Wrong answer on test 5	30 ms	0 KB
41931956	2018-08-21 13:42:45	Thyroid	A - Watermelon	GNU C++	Wrong answer on test 5	30 ms	0 KB
41931677	2018-08-21 13:32:46	eduardonunes2525	A - Watermelon	GNU C++11	Accepted	60 ms	0 KB
41931532	2018-08-21 13:27:48	eduardonunes2525	A - Watermelon	GNU C++11	Wrong answer on test 2	30 ms	0 KB
41931369	2018-08-21 13:22:49	eduardonunes2525	A - Watermelon	GNU C++11	Wrong answer on test 2	30 ms	0 KB
41930949	2018-08-21 13:09:52	MayFloweryy	A - Watermelon	GNU C++14	Wrong answer on test 5	30 ms	0 KB
41930872	2018-08-21 13:07:08	MayFloweryy	A - Watermelon	GNU C++14	Accepted	30 ms	0 KB
41930580	2018-08-21 12:57:52	bqx	C - Registration System	GNU C++11	Accepted	1682 ms	800 KB
41930538	2018-08-21 12:55:45	luogu_bot2	A - Watermelon	GNU C++	Accepted	62 ms	0 KB
41929696	2018-08-21 12:23:54	FAYJUL	C - Registration System	GNU C++11	Time limit exceeded on test 1	5000 ms	14100 KB
41929373	2018-08-21 12:12:54	CtrlCV	A - Watermelon	GNU C++17	Accepted	62 ms	0 KB
41929198	2018-08-21 12:05:50	rubiks_spiedy	A - Watermelon	GNU C++14	Accepted	62 ms	0 KB
41929158	2018-08-21 12:04:24	rubiks_spiedy	A - Watermelon	GNU C++14	Compilation error	0 ms	0 KB
41929116	2018-08-21 12:03:06	jarvis307	A - Watermelon	Java 8	Accepted	248 ms	3600 KB

on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

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→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Status filter

Problem: A - Watermelon

Verdict: Accepted

Language: Python 3

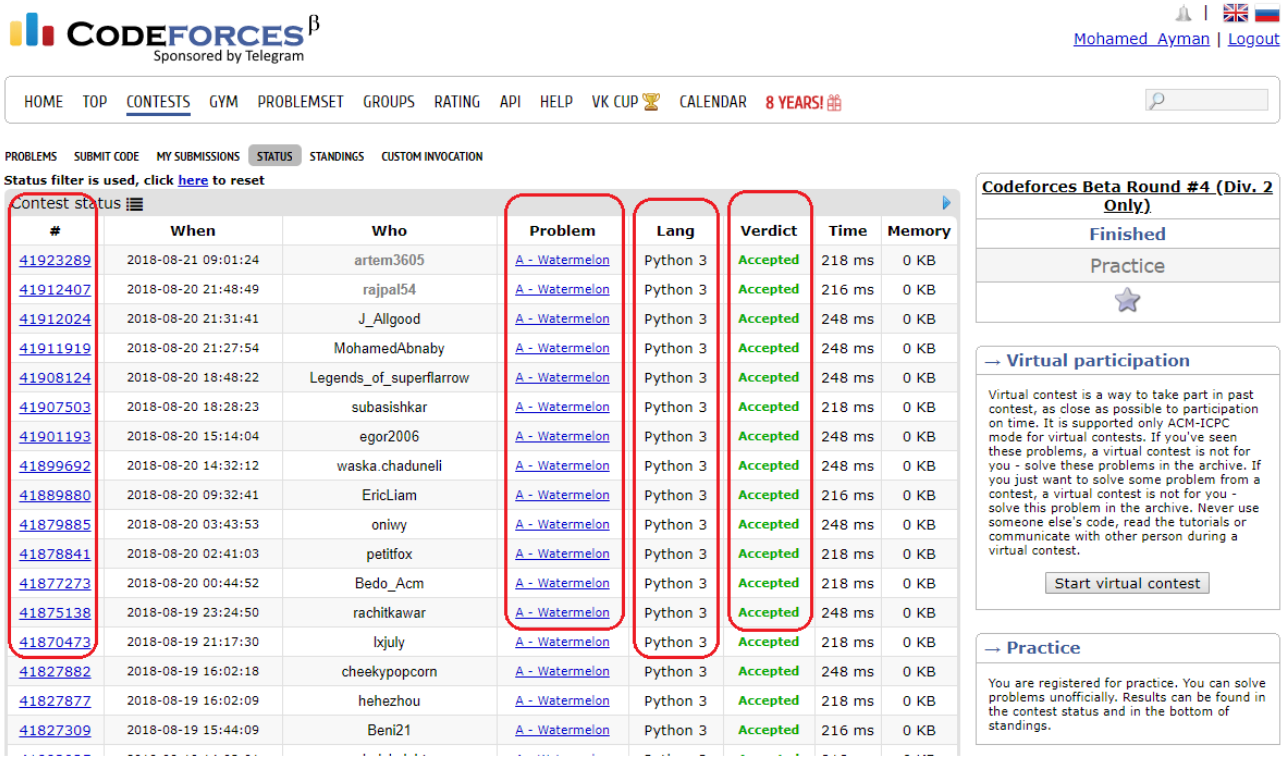
Test: Not used

Apply Reset

→ Contest materials

Appling Filtration

After applying a filter results will be like that



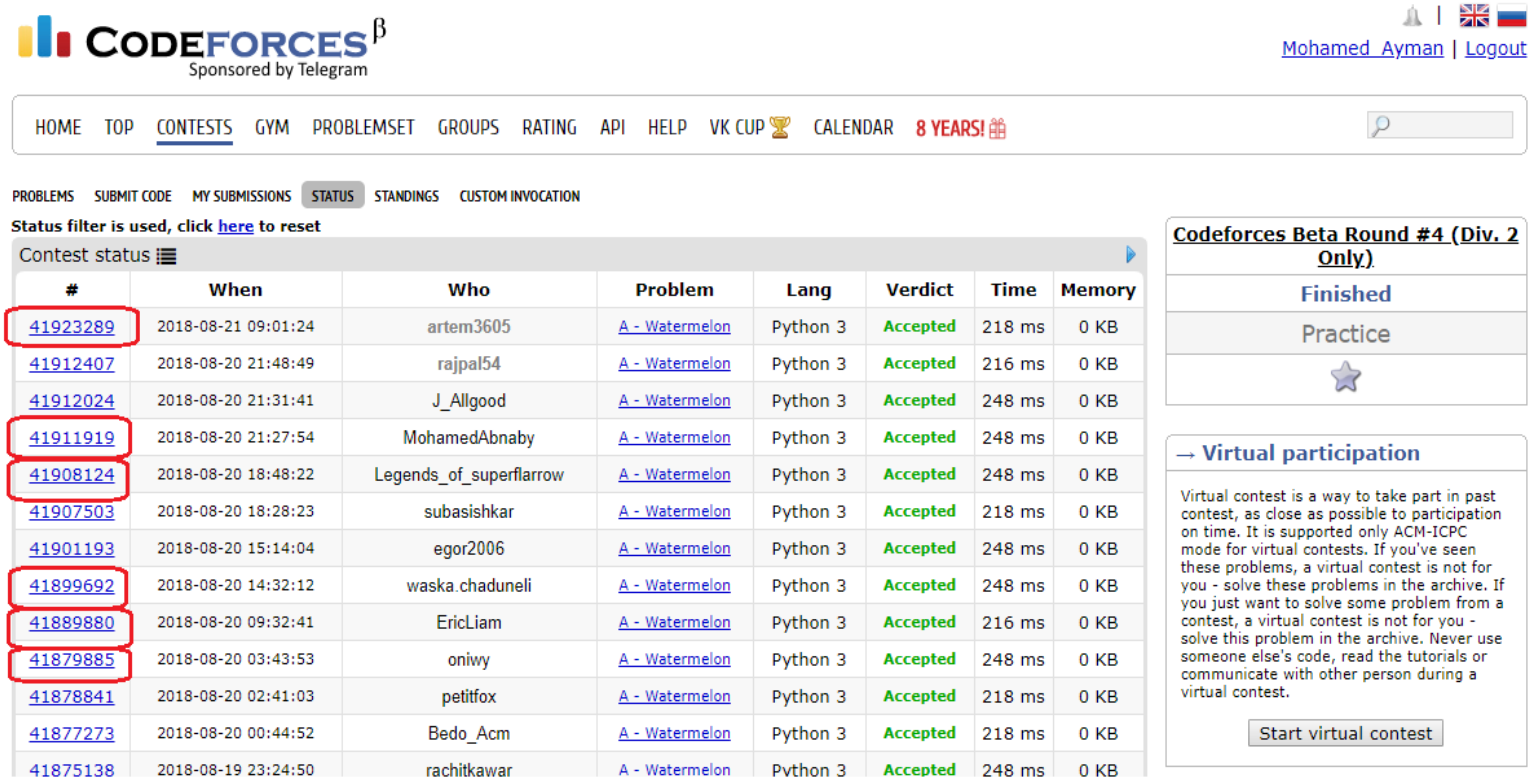
This filter about:

Verdict : Accepted

Problem : A

Language : Python 3

Solutions of The Others



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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

Status filter is used, click here to reset

Contest status

#	When	Who	Problem	Lang	Verdict	Time	Memory
41923289	2018-08-21 09:01:24	artem3605	A - Watermelon	Python 3	Accepted	218 ms	0 KB
41912407	2018-08-20 21:48:49	rajpal54	A - Watermelon	Python 3	Accepted	216 ms	0 KB
41912024	2018-08-20 21:31:41	J_Allgood	A - Watermelon	Python 3	Accepted	248 ms	0 KB
41911919	2018-08-20 21:27:54	MohamedAbnaby	A - Watermelon	Python 3	Accepted	248 ms	0 KB
41908124	2018-08-20 18:48:22	Legends_of_superflarrow	A - Watermelon	Python 3	Accepted	248 ms	0 KB
41907503	2018-08-20 18:28:23	subasishkar	A - Watermelon	Python 3	Accepted	218 ms	0 KB
41901193	2018-08-20 15:14:04	egor2006	A - Watermelon	Python 3	Accepted	248 ms	0 KB
41899692	2018-08-20 14:32:12	waska.chaduneli	A - Watermelon	Python 3	Accepted	248 ms	0 KB
41889880	2018-08-20 09:32:41	EricLiam	A - Watermelon	Python 3	Accepted	216 ms	0 KB
41879885	2018-08-20 03:43:53	oniwy	A - Watermelon	Python 3	Accepted	248 ms	0 KB
41878841	2018-08-20 02:41:03	petitfox	A - Watermelon	Python 3	Accepted	218 ms	0 KB
41877273	2018-08-20 00:44:52	Bedo_Acm	A - Watermelon	Python 3	Accepted	218 ms	0 KB
41875138	2018-08-19 23:24:50	rachitkawar	A - Watermelon	Python 3	Accepted	248 ms	0 KB

Codeforces Beta Round #4 (Div. 2 Only)

Finished

Practice

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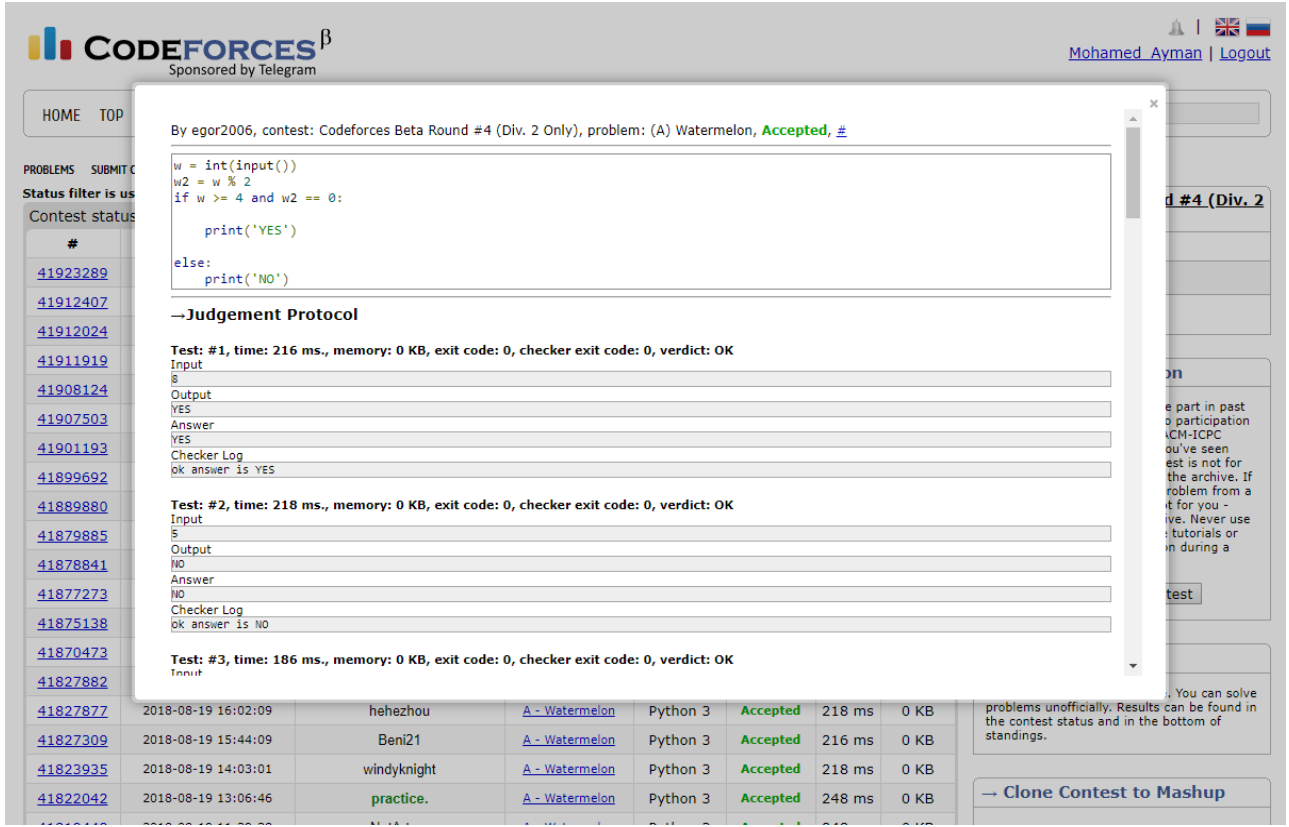
Start virtual contest

Show Solutions of The Others



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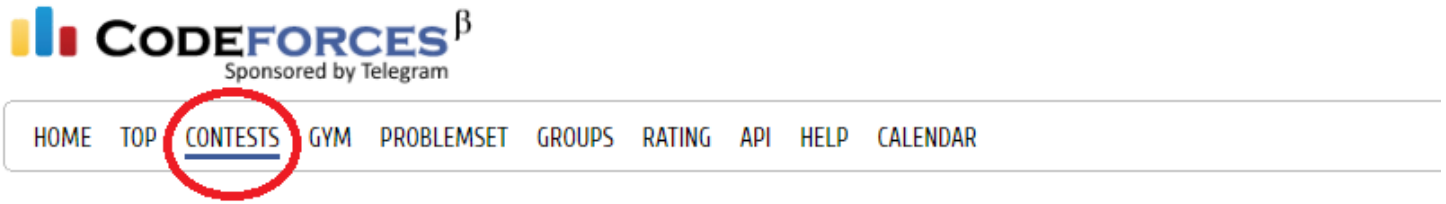
Register in Previous Contest

Select CONTEST Tab

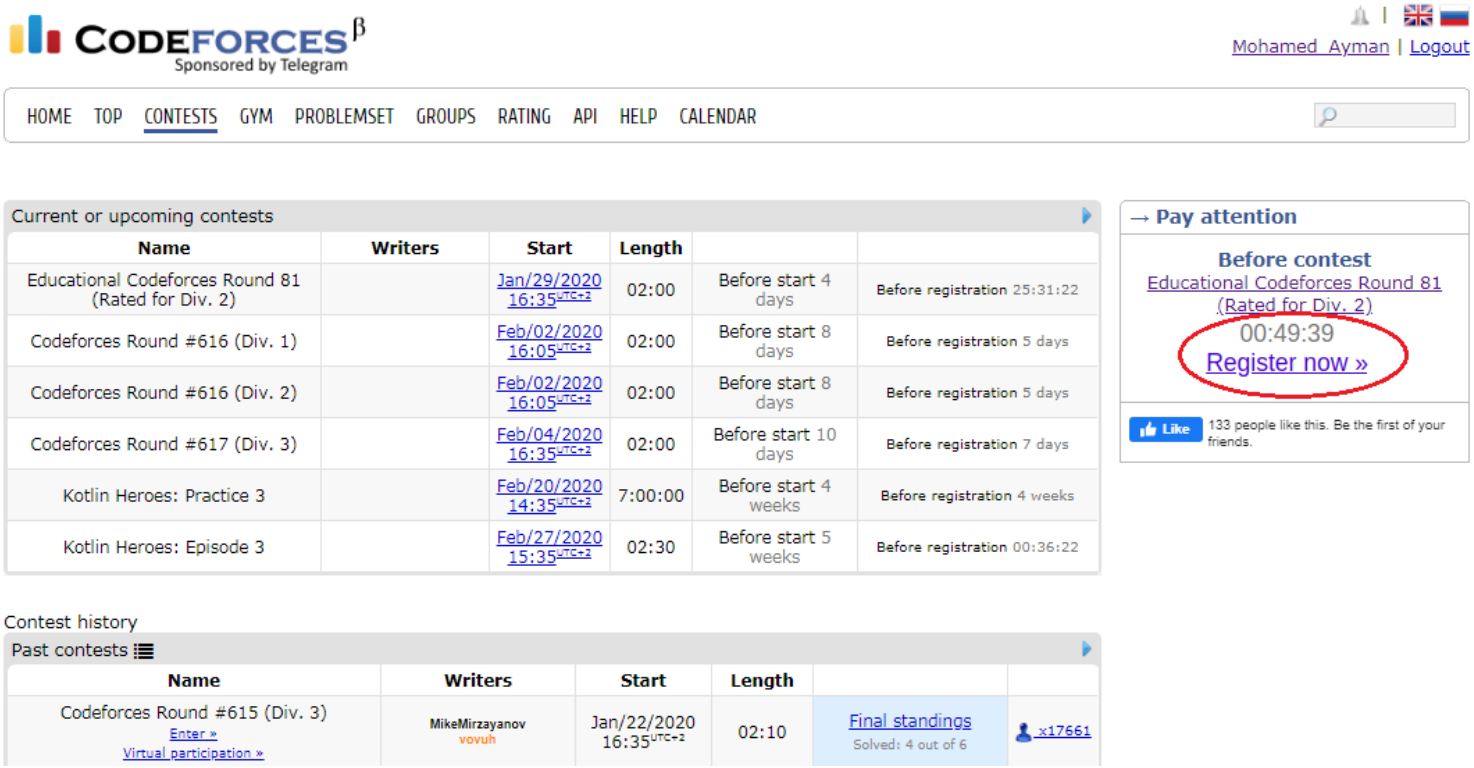


Current or upcoming contests

Name	Writers	Start	Length		
Educational Codeforces Round 81 (Rated for Div. 2)		Jan/29/2020 16:35 UTC+2	02:00	Before start 4 days	Before registration 25:47:01
Codeforces Round #616 (Div. 1)		Feb/02/2020 16:05 UTC+2	02:00	Before start 8 days	Before registration 5 days
Codeforces Round #616 (Div. 2)		Feb/02/2020 16:05 UTC+2	02:00	Before start 8 days	Before registration 5 days
Codeforces Round #617 (Div. 3)		Feb/04/2020 16:35 UTC+2	02:00	Before start 10 days	Before registration 7 days
Kotlin Heroes: Practice 3		Feb/20/2020 14:35 UTC+2	7:00:00	Before start 4 weeks	Before registration 4 weeks
Kotlin Heroes: Episode 3		Feb/27/2020 15:35 UTC+2	02:30	Before start 5 weeks	Before registration 00:52:00

Register in New Contest

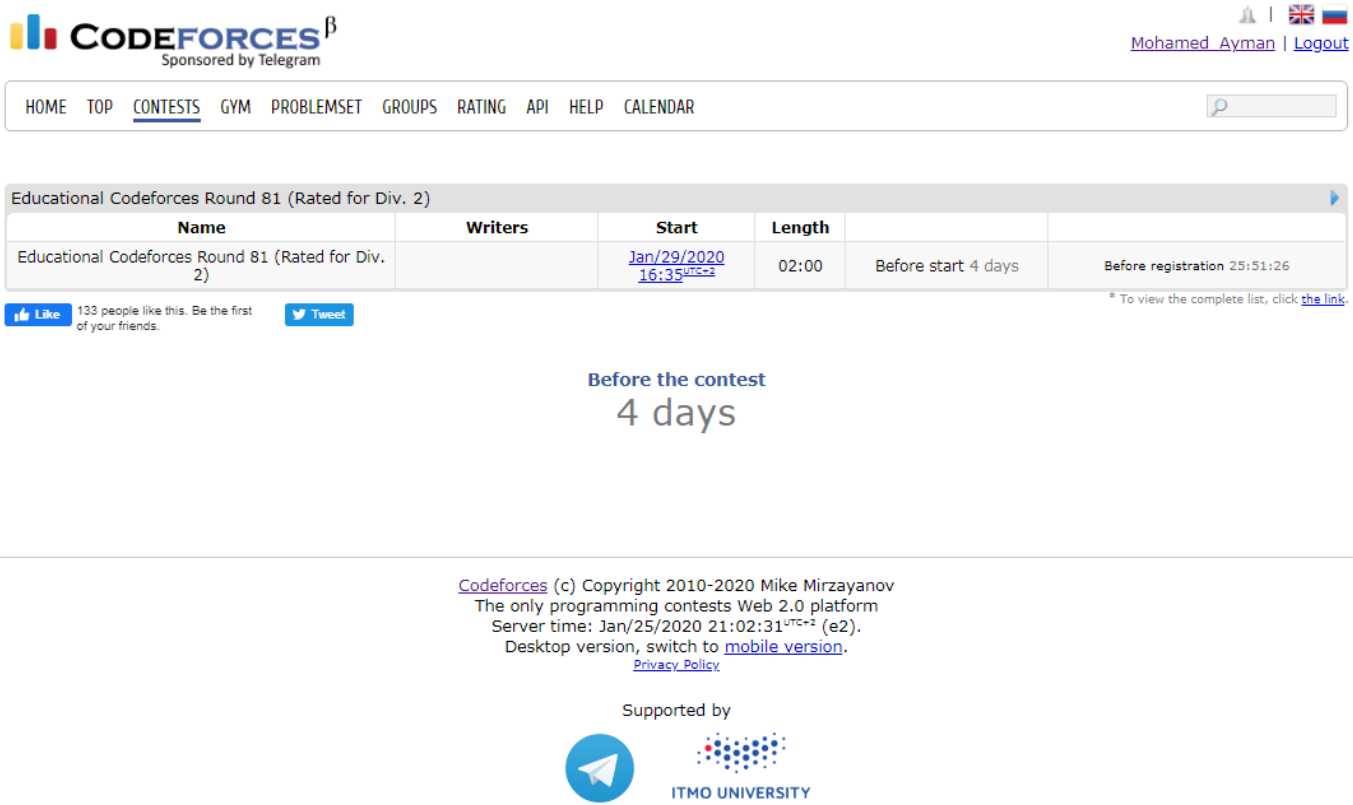
Register The Contest from Register now » link



Register in New Contest

Register The Contest from Register link

Register in New Contest



Register in Previous Contest

You Can Compete in Previous Contests

Contest history

Past contests

Name	Writers	Start	Length		
Codeforces Round #615 (Div. 3) Enter » Virtual participation »	MikeMirzayanov vovuh	Jan/22/2020 16:35 UTC+2	02:10	Final standings Solved: 4 out of 6	x17661
Codeforces Round #614 (Div. 1) Enter » Virtual participation »	Akikaze low_ xuanquang1999	Jan/19/2020 15:35 UTC+2	02:00	Final standings	x1391
Codeforces Round #614 (Div. 2) Enter » Virtual participation »	Akikaze low_ xuanquang1999	Jan/19/2020 15:35 UTC+2	02:00	Final standings	x13746

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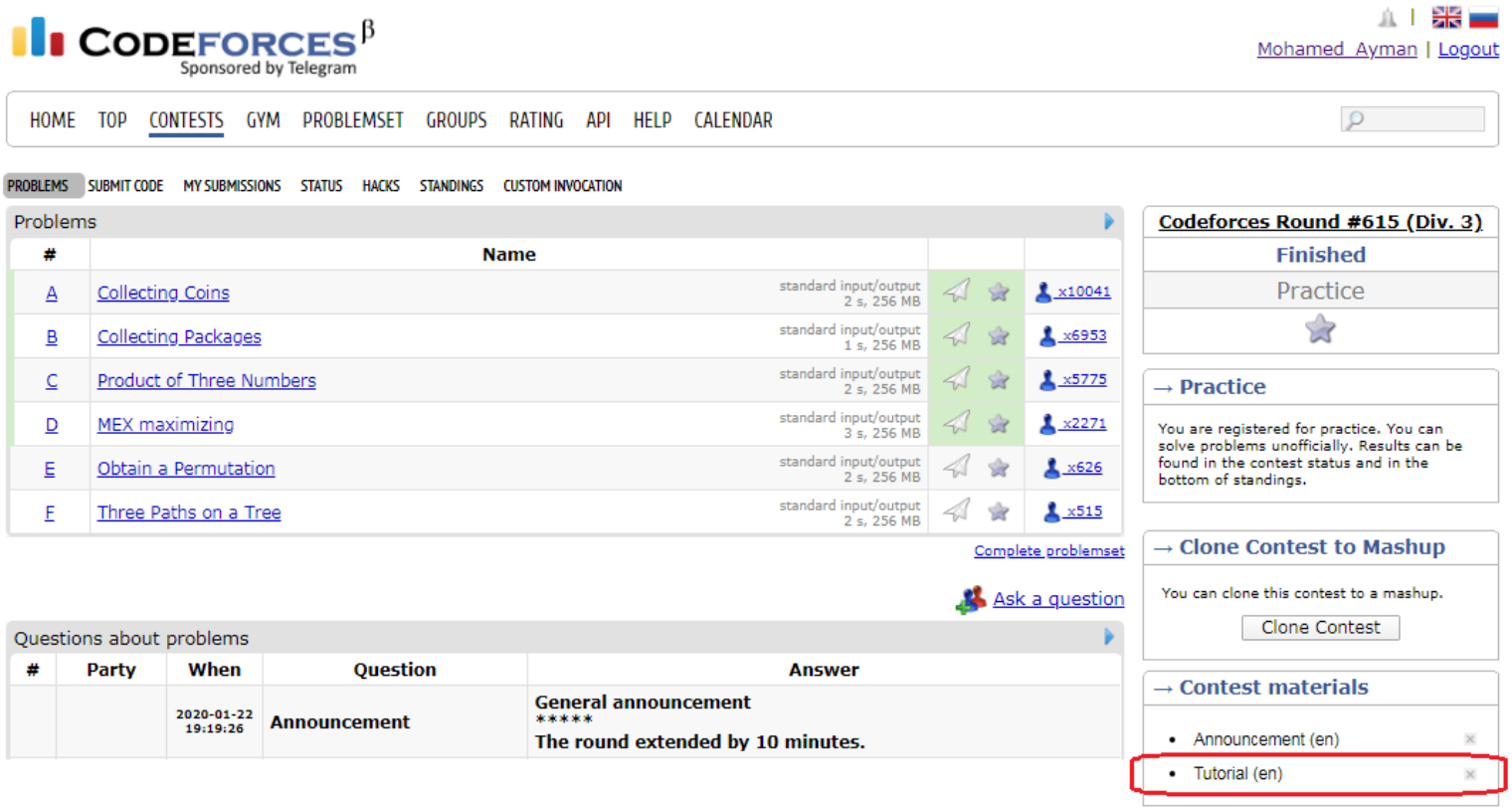
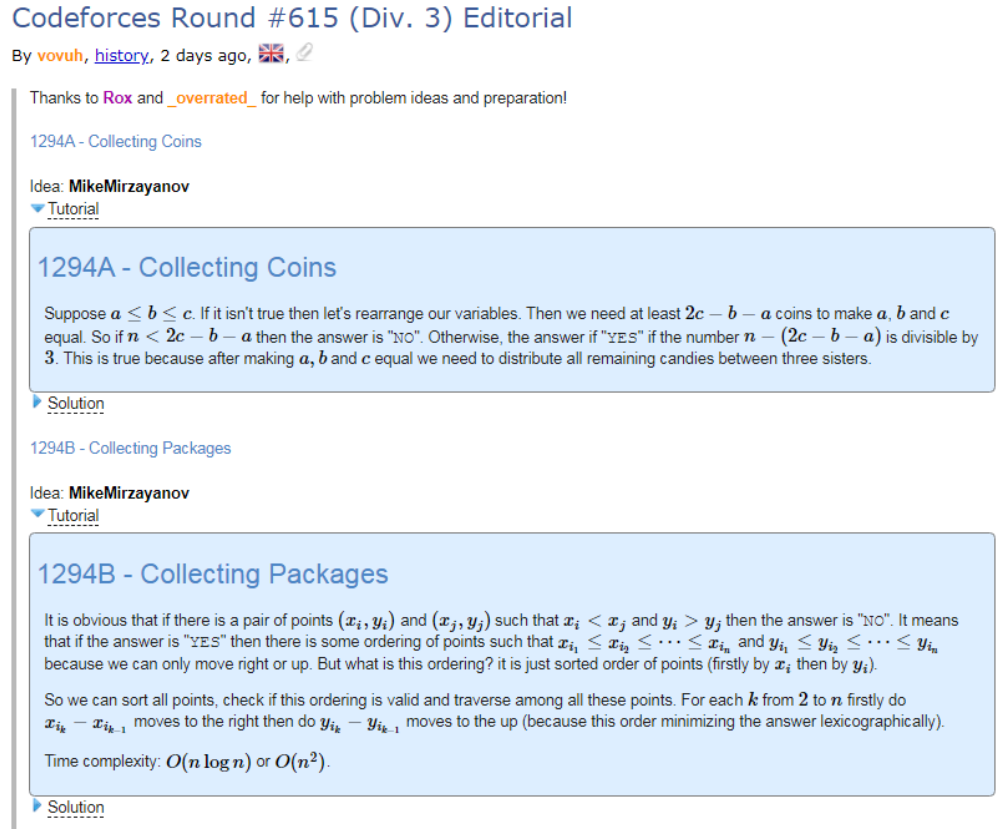
Section 6: How to Learn from Contest Tutorial

How to Learn from Contest Tutorial



How to Learn from Contest Tutorial

- In Tutorial Section for each contest in codeforces there is a blog which explain the idea of the problems in this round with a solution example.



Codeforces Round #615 (Div. 3) Editorial

By vovuh, history, 2 days ago,

Thanks to Rox and _overrated_ for help with problem ideas and preparation!

1294A - Collecting Coins

Idea: **MikeMirzayanov**

Tutorial

1294A - Collecting Coins

Suppose $a \le b \le c$. If it isn't true then let's rearrange our variables. Then we need at least $2c - b - a$ coins to make a, b and c equal. So if $n < 2c - b - a$ then the answer is "NO". Otherwise, the answer if "YES" if the number $n - (2c - b - a)$ is divisible by 3. This is true because after making a, b and c equal we need to distribute all remaining candies between three sisters.

Solution

1294B - Collecting Packages

Idea: **MikeMirzayanov**

Tutorial

1294B - Collecting Packages

It is obvious that if there is a pair of points (x_i, y_i) and (x_j, y_j) such that $x_i < x_j$ and $y_i > y_j$ then the answer is "NO". It means that if the answer is "YES" then there is some ordering of points such that $x_{i_1} \le x_{i_2} \le \cdots \le x_{i_n}$ and $y_{i_1} \le y_{i_2} \le \cdots \le y_{i_n}$ because we can only move right or up. But what is this ordering? it is just sorted order of points (firstly by x_i then by y_i).

So we can sort all points, check if this ordering is valid and traverse among all these points. For each k from 2 to n firstly do $x_{i_k} - x_{i_{k-1}}$ moves to the right then do $y_{i_k} - y_{i_{k-1}}$ moves to the up (because this order minimizing the answer lexicographically).

Time complexity: $O(n \log n)$ or $O(n^2)$.

Solution

Lecture Agenda

- ✔ Section 1: Codeforces Online Judge
- ✔ Section 2: How to Create an Account
- ✔ Section 3: How to Solve a Problem
- ✔ Section 4: How to Learn from Other Solutions
- ✔ Section 5: How to Compete in Contest
- ✔ Section 6: How to Learn from Contest Tutorial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