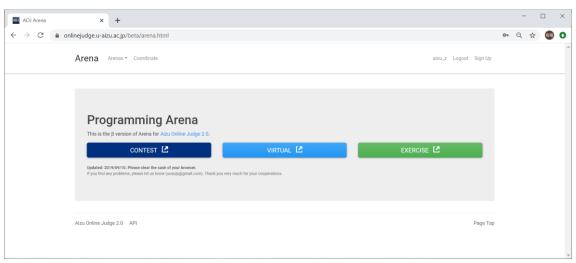
Programming Arena ver1.0 Tutorial

1. What is Programming Arena?





Programming Arena is a tool to organize arenas each of which consists of a set of problem from Aizu Online Judge (AOJ). There are three types of arenas as follows:

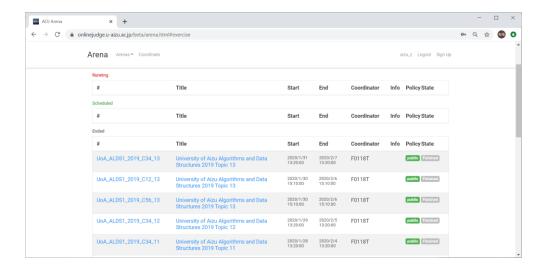
- **Exercise**: Oriented towards introduction to programming and algorithms which use elementary or typical problems from Courses
- Virtual: Oriented towards virtual programming contests witch use past problems from Challenge
- Contest: Oriented towards real programming contests which use original problem sets

There are three roles in Arena as follows:

- Participants: Users who solve problems in Arenas. Students and competitors.
- Coordinators: Users who create and manage Exercises and Virtuals. Teachers and coaches.
- Manager: The admin who can create and manage Contests. (* now AOJ admin)

2. Entrance of Arena

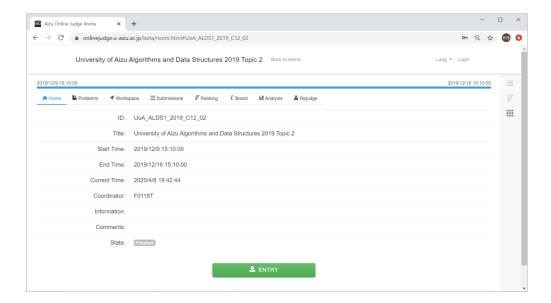
You can browse a list of Arenas from the top page of Programming Arena. Generally, participants enter an Arena via URL given from its Coordinator.



3. Activities in Arena: Participants

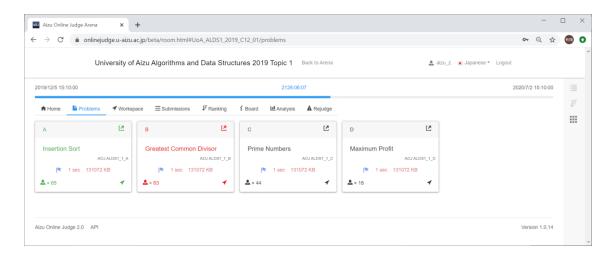
Login and Entry

Home provides a basic information of the arena. First of all, users need to login to Programming Arena with AOJ ID. Then a participant has to enter the Arena through ENTRY to solve problems. If the Arena is private, he/she must input its password given by the Coordinator.

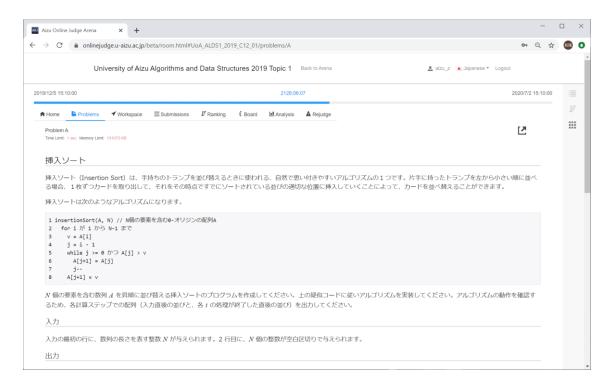


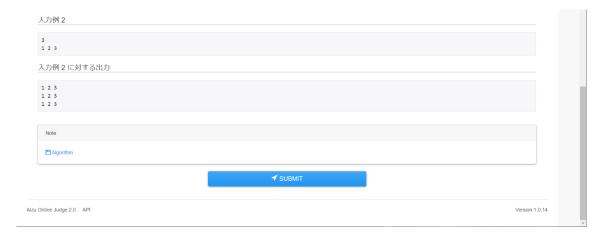
Problem

You can see a list of problems given by the arena.



You can click a panel (or link) to browse the problem description.

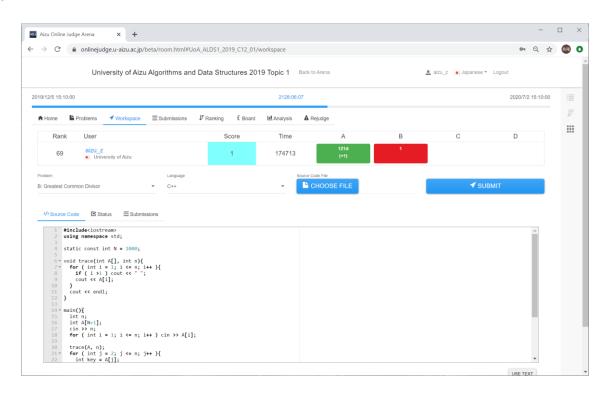




If the Arena is EXERCISE, links to commentary are available (if any) within the problem description.

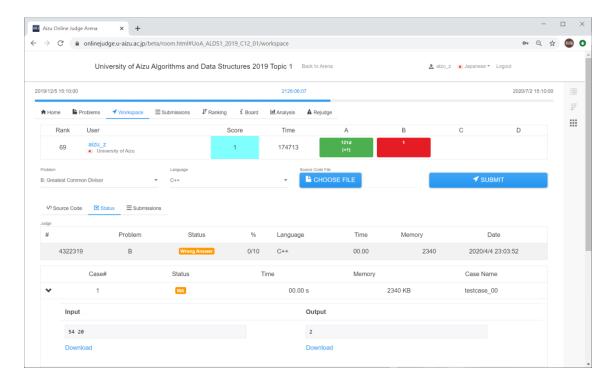
You can move to Workspace with the corresponding problem ID through SUBMIT button.

Workspace



The Workspace is to submit source codes and check verdict for the selected problem. You can see your progress state at the top of the Workspace.

When you submit your source code, please confirm the problem ID and programming language you use. Select the source code from CHOOSE FILE then the source code is shown in the Source Code area. Then, you can submit the code by SUBMIT button.



When the verdict becomes available, the judge result is shown in the Status.

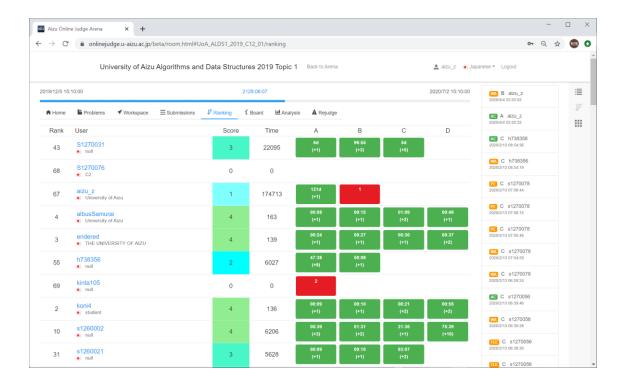
You can browse test cases (judge data) from SHOW DETAILS.

Here are the details of judge status.

Result	Details of the status
CE COMPILE ERROR	Compiler the judge uses has failed to compile your program. Please see error messages from the judge. If you need, please see the version of compilers at System Information.
RUNTIME ERROR	Your program has failed during the execution. Possible causes include: out of range in pointer reference (Segmentation Fault), stack overflow (infinite recursive functions), division by zero and many others. Note that, the main function in C language should return 0.
TLE TIME LIMIT EXCEEDED	The CPU time your program has run has exceeded the time limit specified by the corresponding problem. Note that, the judge runs your program up to around the Time Limit +1 seconds, and the judge may be forcibly terminated around 40 seconds with Runtime Error.
MLE MEMORY LIMIT EXCEEDED	The maximum amount of memory that your program has used has exceeded the limit specified for the corresponding problem.
OLE OUTPUT LIMIT EXCEEDED	Your program has produced too much output.
WA WRONG ANSWER	Your program has produced the output which is different from the judge data. In the case of special judges, the judge may return Wrong Answer depending on results of validators prepared for the corresponding problem.
PE PRESENTATION ERROR	Your program is almost accepted but not perfect. Your program outputs extra spaces or blank lines, and/or does not output required spaces or blank lines.
ACCEPTED	Your program has been "accepted" since it has not failed into all the above mentioned conditions.

Ranking

You can browse status of all participants through the leaderboard. The participants can be sorted by their scores or IDs.



Board

Board is for Q&A and clarification between participants and coordinators.

