



Notice

For all tasks:

- There is an attachment package that you can download from the contest system.
- The attachment package contains sample graders, sample implementations, example test cases, and compile and run scripts.
- You may make up to 50 submissions for each task, and you have to submit exactly one file in each submission.
- When testing your programs with the sample grader, your input should match the format and constraints from the task statement, otherwise, unspecified behaviors may occur.
- In sample grader inputs, every two consecutive tokens on a line are separated by a single space, unless another format is explicitly specified.
- When you test your code on your local machine, we recommend you to use scripts in the attachment packages. Please note that we use the `-std=gnu++17` compiler option.
- If you are unable to submit to CMS, you can use the `ioisubmit` tool to store your code for evaluation after the end of the contest.
 - Run `ioisubmit <task_shortname> <source_file>` in directory with `<source_file>`.
 - Ask a committee member to take a picture of the output of `ioisubmit`. Your submission will not be considered unless this step was done.
 - If you are competing online, ask your proctor to take a picture of the output of `ioisubmit` and send it to the organizers.

Convention

The task statements specify signatures using generic type names `void`, `bool`, `int`, `int[]` (array), and `int[][]` (array of array).

In C++, the graders use appropriate data types or implementations, as listed below

void	bool	int	int[]
void	bool	int	std::vector<int>

int[][]	length of array a
std::vector<std::vector<int>>	a.size()

Limits

The limits for all tasks are available in the "Overview" page in the contest system.