

# 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 scripts.
- You may make up to 50 submissions for each task, and you have to submit exactly one file in each submission.
- The name of the file that you should submit is given in the task statement header.
- 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 package. Otherwise, especially in C++, make sure to add `-std=gnu++17` option to compile.
- 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_shortcode> <source_file>` in directory with `<source_file>`.
  - Ask your proctor to take a picture of the output of `ioisubmit` and send it to the organizers. Your submission will not be considered unless this step was done.

# Convention

The task statements specify signatures using generic type names `void`, `string`, `int`, `int[]` (array), and `bool[][]` (2D array).

In each of the supported programming languages, the graders use appropriate data types or implementations, as listed below

Language	<code>void</code>	<code>string</code>	<code>int</code>	<code>int[]</code>	length of array <code>a</code>
C++	<code>void</code>	<code>std::string</code>	<code>int</code>	<code>std::vector&lt;int&gt;</code>	<code>a.size()</code>

A 2D array is a non-empty array of arrays of the same length.

Language	<code>bool[][]</code>	#rows in 2D array a	#columns in 2D array a
C++	<code>std::vector&lt;std::vector&lt;bool&gt;&gt;</code>	<code>a.size()</code>	<code>a[0].size()</code>

## Limits

Task	Name	Time limit	Memory Limit
gift	Handcrafted Gift	1.000 second	2.00 GiB
jelly	Jelly Flavours	1.000 second	2.00 GiB
robot	Robot	1.000 second	2.00 GiB
routers	Finding Routers	1.000 second	2.00 GiB