jBOI, 2025 Cyprus

Rules

Contents

1. Organizers

The Olympiad is organized by the Ministry of Education and similar appropriate institutions and organizations from the following countries: Albania, Bulgaria, Bosnia and Herzegovina, Cyprus, Greece, North Macedonia, Moldova, Montenegro, Romania, Serbia, Slovenia and Turkey. According to the rules accepted by the initiators of the jBOI, teams of these countries are invited as regular participants. Moreover, the host country may invite guest participants as well. Enlarging or decreasing the number of jBOI countries can only be adopted by consensus.

2. Goals

The jBOI aims at motivating secondary school students from the aforesaid countries to:

- become more interested in informatics and information technology in general,
- test and prove their competence in solving problems with the help of computers,
- exchange knowledge and experience with other students of similar interest and qualification,
- establish personal contacts with young people from the Eastern European region.

Additionally, the jBOI may :

- provide training for students participating in the International Olympiad in Informatics (IOI),
- initiate discussion and co-operation in informatics education in the secondary schools from the East European countries.

3. General Regulations

Each team is made up of up to four secondary school students, and two team leaders. Team members need to cover only those expenses related to traveling to and from the competition venue. All local expenses, deriving from the general regulation are covered by the organizers. Accompanying persons and observers are welcome, but they should pay for their stay. Interested people in attending the event are advised to contact local organizers.

The official language is English. Students may use their native language. Programming problems will be formulated in English and then translated by the team leaders into the native language of their team. Both versions will be given to students. Team leaders must be able to speak and write in English, as well as the language of their team.

The contestants will be using Personal Computers (PC) and / or Laptops with selected software packages. Only computers and software with built-in help facilities provided by the organizers may be used during the competition. The use of digital, printed, sound and other materials will be forbidden. The programming languages of the contest are C++ and Python. The compilers and programming environments for the above-mentioned programming languages will be installed on the hard disk.

4. Team Composition / Age Limit

Composition: Each Team will consist of a Team Leader, a Deputy Leader and up to four contestants.

Age Limit: For the jBOI 2025, contestants must be born after 31/12/2009

5. The General Assembly

The General Assembly is made up of the team leaders of the participating teams and the president, nominated by the host country. The General Assembly selects problems to be solved in the competition from a set of problems prepared and proposed by the Scientific Committee.

The selection procedure is as follows:

The chairperson of the Scientific Committee distributes the proposals. Their number equals the number of problems to be solved by the contestants.

The GA members may either accept or, in case of a major ambiguity of formulation or other serious reasons, deny the proposals by voting. When and if a proposal is denied, another prepared proposal will be offered to the GA. For such cases, the Scientific Committee should prepare at least two extra proposals for each round. The text of the accepted proposals must not be changed by the GA, except for minor rephrasing that is needed to avoid smaller ambiguities.

The selected problems will be translated by the team leaders into the national languages of the teams.

6. Scientific Committee

The Scientific Committee (SC) consists of a chairperson and a number of experts (SC members) from the host country. It becomes active well before the beginning of the Olympiad and has the task of selecting and preparing problems proposals. Another task of the Scientific Committee is to test and evaluate the solutions of the contestants.

7. Competition Problems

The competition takes place over two rounds across two days. Each round lasts four hours, during which contestants will be presented with one to four problems to solve. The chosen problems are translated by the team leaders into the respective national languages of their teams.

8. Tasks: Handing out and online access

On each competition day, every contestant will receive the official English version of the tasks in a sealed envelope. Contestants who have requested translations will also receive, in the same envelope, a version of the tasks in the requested language alongside the English version.

In addition, each contestant will have online access to the official English version of tasks and all task

translations in electronic format (PDF).

The number and kind of files that the contestant must submit as a solution (for example, "source code of the program in a text file") will be specified in the task statement.

Direct access to any file, excluding standard input and standard output, is forbidden. In some tasks reading from file and writing in file this could be not necessary at all because data will be exchanged through the interfaces specified in the task statement.

Each task will be checked on set of single test cases or/and groups of test cases with specific properties (subtasks), each worth a fraction of the total points. Points for subtask will be assigned only when all test cases of the subtask are solved.

Time limit for a single test case and memory limit will be specified for every task. When few tests are grouped in a subtask then time limit is applied for each test case in the group separately. The memory limit is on the overall memory usage including executable code size, stack, etc. In general, time and memory limits will be generous.

All necessary files regarding the statement of a task as well as electronic documentation or reference manuals will be provided through the grading system.

9. Limits

For every task the following limits will be enforced on the contestants' submissions:

- **Time limit:** a limit on the total processor time the process may consume while solving a given input.
- **Memory limit:** a limit on the total amount of memory the process may have allocated at any moment. Note that this limit includes not only the variables, but also the executable code, global data, the stack etc. There is no separate limit on the stack size.
- **Source size limit:** no submitted program may exceed 256 kB in size.

All task-dependent limits will be announced in the problem statements.

10. Competition Equipment and Environment

Hardware specification of the computers (Dell laptops):

- Processor Intel(R) Core(TM) i3-10105T CPU @ 3.00GHz 3.00 GHz
- SSD: 256 GB
- Memory: 8 GB DDR4
- Windows 10 Education

- Other: Standard US/EN Keyboard & Optical Mouse

Software that is installed on the computers for JBOI:

- Codeblocks 25.03
- Geany 2.0
- Gvim 9.1
- VS Code
- Python 3.13.6 (IDLE)

C++17 and Python 3 will be provided both on contestants' PC's and the evaluating system. Note: Contestants can bring their own keyboard (USB type and has to work with standard Windows 10 drivers) and order to use it for the competition they must hand out the keyboard to a member of the Technical Committee on the Test Session.

The contest will use IOI - Contest Management System (CMS)

11. Submitting Solutions

The contestants' submissions are evaluated by a contest system. The contest system consists of a contest server. The contestants will be able to run their solutions on the server using the test facility

- Contestants submit solutions to the contest server via a web-based submission system running on that server. Each contestant will be assigned a username and a password for accessing the web application on the contest server.
- Submissions are evaluated on the server
- The submission facility will accept Python or C++ source files, verify that the program compiles and obeys the stated limits on program source size; the submission facility will then run the program on the task test cases (different from the ones given in the task description), enforcing the relevant run-time resource constraints, grade the solutions and report the results to the contestants.
- For each task full feedback will be enabled
- A wait period of 30 seconds will be enforced between submissions from the same contestant, for the same task

The solution must terminate its execution normally in order to be graded. If the solution returns an error code different from zero, the contest system will consider that the solution had a runtime error and no points will be awarded for the corresponding test case. Therefore, solutions in Python or C++ have to define the main function as 'int main' and terminate the execution with 'return 0' or 'exit(0)'.

It is the responsibility of the contestants to submit their solutions to the contest system before the contest is finished. We advise the contestants to make sure they have enough time before the end of the contest so that all of their solutions are submitted.

Contestants may use the test interface of the contest system to run their submitted solutions on test data of their choice.

12. Scoring

For each task the test data will be divided into groups, with each group containing one or more test inputs. A test input is solved correctly if the submitted program produces a correct output file within the set limits. A group is solved correctly if each of the inputs it contains is solved correctly.

Points are awarded only for correctly solved groups of test inputs. If there are partial grading rules for the problem, then the score for an input group will be the lowest among the scores for the particular test inputs contained in the group.

13. Supplies

In the competition room, working paper and writing tools will be provided. During competition days, contestants may not bring anything into the competition rooms, except for the following items under the provision that they cannot transmit or store any data in electronic or printed format (other than the purpose for which they have been designed):

- clothing
- reasonable jewelry
- keyboards (without wireless and/or calculation functions)
- small mascots
- English dictionaries
- mechanical watches

If a contestant wants to bring a keyboard, small mascots or English dictionaries to the competition, these must be submitted to the technical staff during the practice competition day. They will be checked and, if cleared, will be given to the contestant on the first competition day. After the first competition day, the contestant must leave these items on their workstation if they want to use them during the second competition day. Once again these will be checked and, if cleared, will be given to the contestant during the second competition day. After the second competition day the contestant must take all of these items back.
Any attempt to bring any other item into the competition room will be considered cheating. In particular, during competition rounds it is strictly prohibited to bring:

- any computing equipment (e.g. calculators, laptops, tablets, smart watches, activity tracker, and not presented in advance keyboards)
- any books, manuals, written or printed materials
- any data storage medium (e.g., CD-ROMs, USB drives, flash cards, micro-drives)
- any communication devices (e.g., mobile phones, radios of any sort)

14. Competition and Grading

All contestants must wear their ID badges during the competition.

Each contestant will have a pre-assigned workstation. The workstations have network access to the grading system.

Contestants should be in their seats at least 5 minutes prior to the start of the competition. Contestants must find their assigned computer, sit down, and wait for the competition to begin without touching anything (such as keyboards, mice, pen or paper).

Contestants must submit their solutions for each task by using the grading system. During the competition, contestants may submit written questions concerning any ambiguities or items needing clarification in the competition tasks. Questions and comments must be submitted through the grading system and / or on the provided Clarification Request Forms, expressed either in the contestant's native language or in English. If required, delegation leaders will translate their contestants' questions into English after they are submitted and before they are sent to the Scientific Committee. The Scientific Committee will respond to every question submitted by the contestants during the competition. Since this might take some time, contestants should continue working while waiting for the answer to their questions. Questions concerning any of the tasks will be accepted only during the first hour of the competition.

Contestants should phrase their questions so that a yes/no answer will be meaningful. Questions will be answered with one of the following without any translation (so the contestant have to know their meaning):

- "YES"
- "NO"
- "ANSWERED IN TASK DESCRIPTION (EXPLICITLY OR IMPLICITLY)" - The task description contains sufficient information. The contestant should read it again carefully
- "INVALID QUESTION" - The question is most likely not phrased so that a yes/no answer would be meaningful. The contestant is encouraged to rephrase the question.
- "NO COMMENT" - The contestant is asking for information that the Scientific Committee cannot give

There is no restriction on the number of times a program may be edited, compiled, and run on the workstation. Grading and evaluation take place on the grading system, which provides a same execution environment to that of the contestant workstation. Grading workstation will have the same hardware and software configuration as contestants' workstations (without programs for monitoring and the grading system).
To avoid overloading the grading system, there are two restrictions on the number of submissions:

- Contestants may submit a solution to each task at most once per 30 seconds. This restriction is removed in the last 15 minutes of the contest
- Contestants may submit at most 100 solutions for each task

Contestants can use the grading system to view the status of their submissions and get a short report on the compilation errors of their source code.
The final score for each subtask will be the maximum score of this subtask across all submissions. The score for each task will be the sum of scores for its subtasks.
If a subtask is not solved, then the grading system will give the feedback for the first input scenario, which was not solved correctly. The feedback will contain the input scenario number and the type of error.

It should be noted that the score reported in the full feedback is only provisional. There are two ways how this score may change after it has been reported to the contestant:

- Due to a successful appeal after the contest.
- In some cases, the contestants' submissions may be re-evaluated. This re-evaluation may sometimes lead to a different total score. (E.g., if a solution behaves nondeterministically or runs very close to the time or memory limit.) In such cases, the final score for the submission is the score for its latest re-evaluation. This change in scoring cannot be appealed. Note that the final score for each task is still the maximum score over all submissions.

Contestants may ask the support staff for assistance at any time. The staff members will not answer questions about the competition tasks, help locate toilets and refreshments, and assist with computer and network problems. The only manner in which contestants are allowed to access the network is via the grading system: even running a single "ping" command is strictly prohibited and may lead to disqualification.

Contestants should never attempt to fix or debug or even check computer or network problems themselves; instead, they should ask for assistance

15. Cheating

Contestants must use only the workstation and account assigned to them on each competition day. In particular, contestants must not:

- attempt to submit illegal programs as discussed above, nor try to tamper with or compromise the grading system
- attempt to gain access to root or any account other than the one assigned to them
- attempt to store information in any part of the file system other than specified by Contest Environment
- touch any workstation other than the one assigned to them
- attempt to access any machine on the network or the Internet, other than to submit tasks and view submission results through the grading system

- attempt to alter the boot sequence of any workstation
- communicate with other people during the competition, other than the staff and/or Scientific Committee members.

All of the above actions are considered cheating and may result in disqualification

16. Appeal Process

Provisional grades, based on tests, are available immediately to competitors. In the event of an error with the test data, the Scientific Committee will attempt to, but is not forced to, follow the following process:

- Every attempt will be made to fix test data and regrade all solutions as quickly as possible
- Additional test data may be added only when the grading data does not meet the intention of the Scientific Committee from before the contest
- Late detections of issues, especially during the last 2 hours of the contest, may be grounds for extending the length of the contest.

The hidden test data will be made available electronically in the competition area during the scheduled time after the second competition day. Contestants and team leaders may use the contestant's workstations to verify that the grades are assessed correctly.

A Team Leader may file an appeal by completing an Appeal Form and submitting it to the Scientific Committee at least 30 minutes prior to the final GA meeting of that competition day. The GA will be informed where Appeal Forms can be collected, and where they can be submitted to the Scientific Committee. Every appeal will be reviewed by the Scientific Committee and the Team Leader will be notified of the committee's decision. All appeals and their disposition will be summarized at the final GA meeting of that competition day.

In the event that every submission of a task should be re-graded and re-scored as a consequence of an accepted appeal, note that re-scoring may result in a higher or lower score for any contestant. Should anyone's score change after grading results have been published, new results will be published again. Score changes resulting from this are not appealable

17. Feedback

For all tasks full feedback will be enabled. Every time contestants submit a solution, they receive full feedback for that submission

18. Announcements

In case the Scientific Committee makes verbal announcements during the competition, these announcements will also be available on the Competition Server’s web interface. These

announcements will be in English only. The web interface also shows the official time remaining in the contest.

19. Medal Award

After the second Competition Day and before the JBOI Awards Ceremony the medal distribution is determined by an automatic procedure, based on the number of points the contestants achieved. The medal awards are uniquely determined by the following rules:

- 1. The score necessary to achieve a gold medal is the highest score so that at least one twelfth of all contestants receive a gold medal.
- 2. The score necessary to achieve a silver medal is the highest score so that at least one fourth of all contestants receive a silver or a gold medal.
- 3. The score necessary to achieve a bronze medal is the highest score so that at least one half of all contestants receive a medal

Each team's score will be calculated as the sum of the best three scores of its members. The final standings will be posted on the official website