General Assembly: Agenda for the Meetings held in Baku, Azerbaijan
4 August – 11 August, 2019
Venue: Taghiyev Room 2

Monday 5 August : GA Meeting 1   8:30 – 9.30

1.   Welcome and Apologies

The President Greg Lee thanked Araz Yusubov and ADA University for what is going to be a great IOI. Apologies were received from Nigeria.

2.   GA chair presented

The Deputy Minister of Transport, Communications and High Technologies of the Republic of Azerbaijan, Mr. Elmir Valizada was presented. He was among the pioneers of the computing breakthroughs of the 1980s in Azerbaijan, and was personally very supportive of the competitive programming movement.

Mr Valizada welcomed the assembly and said Azerbaijan is trying many things for development and this is an opportunity to meet with others. He wishes everyone a good competition.

3.   Presentation and confirmation of GA agenda

The agenda was approved by a majority.

4.   Approval of Contest Rules and procedures

The HSC Chair Farid Ahmadov was asked, in the absence of the ISC chair, to present the rules.

- Snacks students bring should not be noisy or smelly.
- Modify what a clarification answer could be. The traditional (Yes/No/See task description) now has added that if it is technical and not related to task, then we are allowed to assist (eg: designated staff may help) . It is now "Clarification/Assistance" so the query may be technical or task related.
- Removed the live statistics availability as it may be interpreted as an indication of easiness of a task.
- The phrase about reverse engineering was edited.
- A change was made yesterday about the rounding of scores. Last year the GA decided we want to have to two decimal points. This was missed in a previous version but it is now implemented. It may not have been seen in the online practice session, but it will be operational today.

There was a question about the snacks. There will be chocolate, apples and bananas. People could bring in their own but they should be delivered with keyboards to avoid long queues. Students will see in the MS that they can request additional snacks or water by clicking on an icon.

The Rule changes were approved: For 73, Against 0.

The chair asked the GA to please refer to the website www.ioi2019.az .

5.   Call for nominations for IC and ISC and ITC

There are 2 positions for IC . There were changes made for ISC - there are two positions, one for one year and one for three years as Jonathan Gunawan moves from an elected position to the Indonesian representative. There is one position for ITC. Potential ITC candidates should talk to ISC first. Nominations close at the end of GA5 with forms to be submitted to the Secretary.

6.   Code of Conduct reminder and Harassment handout

Ben Burton stated that last year the GA approved a code of conduct but it didn't get into all contestants' bags. Araz has organised the guides to distribute a copy to those who registered early. There is a link to the Code of Conduct on the 2019 Contest rules page and also on the Regulations of the IOI website. All contestants should be aware and Leaders are asked to discuss them if their students don't speak English.

Ben also sent an email earlier today about a harassment document and this will be in placed in pigeonholes. It is intended for Team leaders and reminds them to be a role model and an ally to groups such as women or transgender people. It is hoped that this awareness will lead to prevention rather than dealing with incidents. We want an inclusive environment, so you are encouraged to speak up if you witness harassment. If you are able, please share with your students. If there are questions please speak to Ben or other IC members.

The Chair endorsed that we are looking forward to an inclusive IOI this year.

The Chair brought the meeting to close at 9.18 am and wished a good contest for all teams. Araz added that the Welcome Pocket guide gives you the daily schedule. Please make your way to the bus number on your badge, and the Guides in green shirts will assist.

Monday 5 August : GA Meeting 2   12.30-13.30

7.   Issues arising from practice session

Martin Mareš apologised for lateness as the committees required further time to discuss all the options and asked for several minutes.

Ben Burton took the opportunity to make some housekeeping announcements about lost-and-found items and pigeon holes.

Martin then reported that
- The practice session started on time but mistakes were quickly discovered: the contestant's codes in the system didn't match what was on their badges. It will be fixed for tomorrow by changing the CMS.
- One of the tasks was given the wrong zip file with the data. This was fixed.
- The Codeblocks version used this year, the same as last year, isn't especially up to date. The committee is considering updating Codeblocks for tomorrow. It will require a lot of testing. One plug-in is known to be buggy, so the update will have that plug-in disabled.
- They are not aware of any system updates

- One contestant broke a button on his keyboard but it will be replaced (the machine not the contestant!)
- The GEdit editor when running on a large file, had a problem so tell students not to use GEdit.
- Some things were not easily understood. So all announcements will be made in CMS in text plus a voice announcement "Please look at CMS". It will be the main source.
- Some keyboards were quite noisy. We discussed whether to allow them and finally decided that we would let the borderline ones go. But if there are complaints about them, we will reconsider for day 2. Please tell your students.
- There was a Host committee miscommunication where they said "its not our problem". We will respond appropriately / helpfully on the contest days.

Questions
- A leader reported that there was meant to be a 256KB code limit but found that 440KB was accepted. Martin will look at this.
- What error should be seen if too large a source file is submitted? Martin said it should be "Its too large".
- There was a large flickering bright screen in the room, could it be removed? Martin said, yes they will have a look at it.
- The contestant machines did not have the task directories unzipped. Jakub Łącki responded they will be zipped tomorrow.
- The Contest server took 2.5 minutes to load at the start of the session. Martin said he hopes it will work fine tomorrow.
- There were no pens or paper today, will there be tomorrow? Yes - no translations were required today so everything will be in the envelopes tomorrow.
- What if battery runs out on the wireless mice? They have tested them but there are spares if required.
- Could the ISC in the future provide guidance on what constitutes a noisy keyboard it so that there is no chance of a student being disadvantaged? Martin said it will be in the rules and acknowledged they knew it wasn't currently. The questioner asked for a list of similar restrictions.
- What is the protocol for printing as it didn't work from codeblocks (but other editors were fine)? Martin said it should all work tomorrow. It didn't today but command line printing will work tomorrow.
- A screen went black for a while after closing codeblocks and clicking on the file didn't open editor. Martin said we will change the default editor. (A later question asked if it could be GEdit and Martin said they would consider the question.)
- Guests were not allowed in contest hall today so will they be allowed tomorrow? Araz Yusubov said no one can go in anyway. After the contest tomorrow, if a leader asks for a guest to come in they will be allowed.
- LPSolve to solve output only tasks was present today so will it be installed for tomorrow as well? Martin said Yes. A subsequent question was whether LPSolve could help solve any task? For example, to make it easy for some linear programming tasks. Jakub responded that it was out of syllabus so knowing that linear programming tasks could be solved using LPSolve will not be helpful.

8.   Scrutineers

Greg Lee asked for approval of past IOI chairs present, not on the IC, to be scrutineers. (Troy Vasiga, Mohammad Ali Abam and Vladimir Kiryukhin.) They were approved by a majority.

9.   Other Business

- GROUP PROPOSALS DISCUSSIONS and SURVEY (Mile Jovanov)
  Mile explained the survey being sent to the GA mail list. There are 2 parts: the first is to collect National Contact details and the 2nd part statistics on participation in your country. This part will not be published). Please complete by tomorrow night (August 6)

  For group discussions for the 2nd Competition day, please send suggestions to Mile or to the GA list.

- REGULATION CHANGES

  Ben: presented the proposed changes which have been emailed out, with the changes marked in yellow. GA members can discuss them with any IC member .

  N2.6.1, N2.6.2, E3.4, N5.6.1, E6.11, E6.12, N6.11.3, N6.12

  Mārtiņš Opmanis asked for a definition of what leads to disqualification, and added that the Code of Conduct shouldn't be in the rules but in the regulations. Religious discussion boundaries may be an issue.
  Ben responded that it was added in the Notes, which are not binding, but help with understanding.
  Mārtiņš said if you change the code of conduct and an infringement of that can lead to disqualification, then it's not in the right place.
  Ben asked everyone to please read and discuss with IC members if you wish.

- REGISTRATION FEE
  Eljakim Schrijvers reminded the assembly that the registration fee will be collected tonight.

Monday 5 August : GA Meeting 3   20:30 – 22:00 *(start time in program as 20.00)*

10.   Presentation of Tasks for Competition Day 1 (Jakub Łącki)

The Translation system and objection method was explained. Leaders can see the problems once they are logged into the Translation System.
- The Translation instructions were given: the URL was shown, login to 2019 wifi, usernames and passwords were given for the practice session and have been sent again by email. Once the translation is complete, leaders will be called to sign that what is in the envelopes is correct. There is a button to do a rough printout, - click and the printout will be given to you. There was a technical problem Martin is trying to solve (If the log into wifi didn't work because the laptop only supports 2.4 GHz network and the hotel is 5 GHz.) For countries who do not need to translate, they could sign empty envelopes but at their own risk.

- Once the problems statements have been read, minor objections such as the wording formulation may be lodged, a major objection may also be lodged and may lead to the task being removed.

Problems:

Shoes: It was reported by a Beta tester that this is similar to a Codeforces problem from June 2018. There are differences: The limits are smaller, there is no notion of left vs right shoes, and there is a there is a single matching shoe in the Codeforces version.

The ISC believes the problem should be kept :
- its a relatively easy problem and it is not realistic to expect all easy tasks to be totally unique
- the task appeared in a publicly available contest which at least 3 HSC/ISC members participated in, but they didn't remember solving it

Rectangle: The Shusha plateau lies in an area of international conflict. The ISC advised the reference should be removed but the HSC decided to keep it.

An Overview of the solutions was displayed:

Shoes:
- Greedy solution: find the shoe matching the leftmost shoe, move it left
- Use Fenwick tree to solve in O(n log n)

Rectangle
- For each row/column find all pairs of cells that can be on the boundary (there are O(HW) of them)
- Use DP to aggregate these pairs
- For each cell, consider O(1) rectangles, where it is a corner. It can be shown we do not miss any rectangle
- Test if rectangle is valid in O(1) time

Split
- Find a spanning tree T and a vertex v whose removal gives components of size < a
- Return Yes if G \ {a} has a connected component of size >=a
- Very tricky proof

Australia asked if the ISC/HSC knew that codeforces suggests a faster solution using a tree. Jakub responded they did.
Australia asked if it was final about the reference to the region and could they file a minor objection? Jakub said it could be changed.

Martin: gave an update to the wifi problem and said to keep the load low on "IOI2019 2.4".

More time was allocated for reading and submitting objections. At 9.40, these were discussed.

Russia submitted that the Codeforces task for Shoes was too similar and that 34 IOI participants had taken part. The ISC would still like to keep it as its unrealistic to expect that there are easy problems

which are completely novel. There are no extra details published on the Codeforces suggestion. The sub tasks make it different and no IOI participants submitted a solution which would be required for a full score. So the Scientific committees are happy to keep this problem.

A vote was taken: 4 were in favour of the objection, 3 abstained and 58 supported keeping the task.

There was a minor objection from Spain for Rectangles wishing to change the name of the region and this was supported by Chile. Canada wished to discuss who has the ultimate say as the ISC is the representative of the IOI and the problems persist into the future. It is the IOI which is represented after the HSC has gone. The ISC should have a veto. Jakub responded it is up to the GA.

There followed a discussion on the right of the Host to represent their country in the problem statements, the historical accuracy was supported by the HSC, the notion of conflict in the word "fortress" (change to "castle" or "palace") and whether this or the politics of the region could be stressful to the students.

A vote on accepting Spain's objection (asking to change the city and the ruler to different names) was taken: 38 were in favour, 18 were against and 18 abstained. It was accepted that the name of the region and ruler will be changed.

The task set was accepted by a majority. (Count not undertaken)
And final minor objections were solicited and at 10.04, the objections were closed.

Tuesday 6 August GA Meeting 4   17:30–19:00 and 20:30 – 22:00 (Dinner at 19:00)

11.   Report on Competition Day 1

While waiting for the ISC some announcements were made:
Chair: The Opening ceremony was in newspapers and social media .
Mathias Hiron: about half the countries are still to complete the survey, so please take the time now to do it.
Ben Burton: Please hand in nomination forms, if you are planning to stand for election. (IC and ISC to the Secretary, ITC should discuss with ISC)
Valentina Dagiene: handed out certificates to those who presented at the conference.

Ali Sharifi-Zarchi (ISC) apologised for their late arrival as they were awaiting appeals and held a meeting with the HSC.

REPORT
1.   The list of languages for task statements was wrong due to an incorrect transfer from the translation system to CMS (country-language code order) It was found at 1:38 and fixed 1:52. There were no complaints from contestants.

2.   There was a delay in starting the workers at the start of the contest so early submissions were stuck "compiling". This was detected at 0.15, solved at 0:19.

3.   Several machines froze, because they ran out of memory.

4. The test cases provided didn't match those in task statements (resulting in complaints). They were correct, but were updated last night, so they didn't match. Detected at 00.30 and fixed 00.48. Also the memory limit for the public java grader was 256MB. No one complained and the ISC believes no one was affected.

5. Two CMS slowdown events happened due to nginx (for load balancing) hashing function. One at 00:55m fixed at 01:00 and one in the very last seconds of the contest.

6. Two test cases were missing from rectangle. Notified by ISC at 00:57, fixed at 1:12. The rejudging finished at 1.30 (there were no complaints). Two contestants were affected by their scores going from 10 to 0. They were notified in person by ISC members within 3 minutes of finishing the rejudge (and within 15 minutes of their submission)

7. The official number for day 1 was 327 contestants. If students were present today but not on day 2, it will not decrease. There were no complaints about noisy keyboards, no relocations and no extra time requests.

Questions
One of the zip files was updated during the contest and the students were told it had changed but not what the change was. The answer was that as there is no translation available the announcements were kept short so that it was fair for everyone. A comment was made that students may have spent time looking through the archive.

The updated example test cases were mentioned again (as was the Java issue) : the provided ones were correct but didn't match those in the task.

12. Appeals

1 . A student appealed there were incorrect test cases for Split. These were verified by ISC as correct so the appeal was rejected.
2. A complaint was made about weak test cases for Rectangle but no details were provided so it was also rejected. They ISC believed the HSC made the best possible test cases for Rectangle.

3. There were some complaints about time limits for Rectangle. ($O(n^2 \log(nm))$ solution had not scored 100 points) . Our solution was $O(n^2 \log(n))$ which is faster by a factor of 2. We believe the time limit was tight but achievable so the appeals/complaints were rejected.

4. There were appeals because of lost keyboards and mice. ISC/HSC apologised and tried to find them and will try their best not to lose them for the 2nd day.

5. There was one appeal submitted by several students that they couldn't submit during the last second. This was accepted. Please provide the ISC with the precise path of those solutions if they have not been provided earlier. Solutions can be re-evaluated and scores may change. There is a snapshot from the end of the contest. There was a request to the GA to tell contestants that very last second submissions will potentially cause problems. At the end of the second day, there will be folders on the desktop: in case of slow downs, or CMS not available at the very end, we can accept one submission for each task. Move files to that folder and ask to please re-evaluate tasks in this folder. Slovakia requested that it's in a prominent spot.

There was one serious incident. One contestant had no access for 30 minutes. There was an IP conflict between a pair of student machines. One student was logged into another contestants account. That student couldn't download the tasks although they had printed statements. The student told the Technical team after a few minutes, and it was eventually resolved but it took 30 minutes. There was no request for extra time . There was a miscommunication between ISC/HSC/HTC and the ISC didn't know. Ali expressed his personal deepest regrets about the incident but unfortunately has no way of providing some redress. The situation was discussed with all of HSC/HTC/ITC about how this could be prevented in the future. Related to this problem, the ISC presented some suggestions for the rules: If a student needs extra time, they don't leave at the end of the contest. They must make a clarification request in CMS. (eg: machine wasn't available and I need x amount of extra time) and then the ISC will see it and take action before the end of the contest. The student must remain seated and not talk to anyone else. If the CMS is not available, then the student should raise their hand and say "I need an ISC member to talk to". There were extra machines available but that wasn't the problem. The Account was assigned to a machine. We will have temporary accounts logged into spare machines and if there is a delay of more than 5 minutes, the student will be relocated. Then the ISC can decide how to transfer files.

Comments and Responses
- In the rules there is no limit to submissions in the last 15 minutes. But students were limited. The HTC responded it was a small mistake and it was updated to the last 14.5 minutes

- A student didn't get their keyboard or mouse so what is the strategy to ensure it won't happen on day 2? The ISC received 3 similar appeals and are liaising with the organising team as well as the technical team to ensure it won't happen again.

- The appeal about the weak test case for Rectangle was explained as a $O(n^6)$ subtask submission passed. The ISC explained that If the student put lot of breaks into it, (exit as soon as found invalid), then it could get passed as n^4 . But it would affect how the student thought.. Jonathan Gunawan explained that if there were lots of breaks in the code, then it was a good enough solution.

- Rectangle time limits were questioned again. O $(n^2 \log(nm)$ and $O(n^3)$ solutions shouldn't affect the correctness of solution as they are very similar but the time limit was very tight.
  The response was that the ISC had a reasonably well optimised solution O(n^3) that ran in 5.5 seconds so they set the limit to 5 seconds. The ISC/HSC had a correct O(n^2 log n) solutions that passed in about 2s. There were several (O $(n^2 \log(nm))$ solutions which ran in 2.5 to 3 seconds so 5 seconds was an acceptable limit. The student in question did have the right complexity but it couldn't be accepted as it didn't run in time.
  Ali added that the HSC suggested changing the limits but the servers/graders might be overloaded if they allowed a large number of seconds to discriminate between the 2 big O's possibilities.

The Chair thanked the ISC and HSC and opened the meeting to discussions from the floor.

Suggestions to reduce the Translation time were made.
1. Culturally specific tasks are nice but several hours of ISC and HSC time was used to discuss the names of cities and rivers. A suggestion was to not be specific about the names of geographical

places or controversial topics. Respect the host culture but don't let it impact the translation process as happened the previous evening.
2. Envelope yourselves without stapling as this was the cause of some delay.

The ISC confirmed there was nothing sensitive in the problems statements for day 2.

A surprise cake from the host for Wolfgang Pohl's birthday was delivered to the room.

Wednesday 7 August GA Meeting 5   19:00–19:30 and 20:00 – 22:00

While waiting for the presentation of tasks, some announcements were made.

- Araz Yusubov announced that if you don't attend excursions where lunch is provided, then there isn't lunch provided at the accommodation. And to please remind Guests that they will go to the beachside.
- Ben Burton reminded the GA that the Nominations deadline is tonight at the end of this meeting, when the tasks are voted for. And also that is expected that IC members will be assigned a role, with an expectation that the member will work.
- William du Luigi's birthday - the GA sang to him.
- Ben: this is a quarantine room and no photos from within it should be put on social media
- Chair: dinner will be 7.30 . Please bring dessert back to start again at 20.00
- Troy Vasiga made a geopolitical announcement: Ouzo party is tomorrow night, after dinner if there are not a lot of appeals. National beverages to be exchanged. Applause ensued.
- Mathias Hiron read out a list of countries who have not filled in the survey. Please do so as soon as possible. (Bolivia, Chile, China, Cuba, Denmark, Dominican Republic, El Salvador, Iran, Jordan, Kazakhstan, Kyrgyzstan, Latvia, Nigeria, Norway, Republic of Korea, Romania, South Africa, Syria, Thailand, Tunisia, Ukraine, Uzbekistan, Venezuela)

13.   Presentation of Tasks for Competition Day 2 (Jakub Łącki for the ISC)

The GA was told to log in to the Translation system to see the notice for day 2 and the problem Walk. The other were being uploaded.

The Translations team made an announcement about changes. Leaders can finalise a task, but they can de-finalise it and will not need to approach the desk if they want to begin editing again.

The procedure for printing (non English) versions was announced, with some copies in English being made available.

The procedure for translating (or not) was explained. (Leaders could use a check box to request another country's translation) . Countries actually translating must finalise all tasks , and "submit". Leaders could request 4 copies of a different translation also. The priority order was English only, another language. another language and English, followed by 2 translation languages. If leaders wish to leave early, they may fill a form to say "I checked " and the envelopes will be prepared by the team.

[A quick meal break was taken]

High level solutions were presented by Jonathan Gunawan

Line:
Trivial solution: 2 lines for each point.
~50 points: Create a spiral by going (L, top, R, bottom)-most point.
100 points: Create a spiral and 2 chains.

Vision:
Project the black pixel into "aggregated" rows and columns.
Compute the sum between the difference between two black pixels in the "aggregated" cells

Walk
There are only O(M) relevant points.
Build a graph on these points using sweep line.
Run Dijkstra on this graph.

There were no major objections.

The task set was accepted: 63 in favour, 0 against, 0 abstain. Minor objections will still be considered.

Ali Sharifi Zarchi announced a problem with Vision: 1 minor point is changed and some error messages were changed. The suggestion was made not to translate these as that is what the grader will produce and what the contestants will see. Ali also announced how to see the latest version of tasks.

Thursday 8 August GA Meeting 6   17:30–19:00 and 20:30 – 22:00

The chair thanked everyone involved in the whole process of running a successful competition.

14.   Report on Competition Day 2 (ITC/ISC/HTC/HSC)

- HTC needed more time to finish installing some packages required for visualization of task line. This caused the contest to start with a 21 minute delay

- There was an announcement made at the first minute of the contest to ensure the contestants paid attention to an updated Notice.

- The contestants were unable to access problem attachments properly. Some of the files extracted from the ZIPs appeared read-only. But only in some programs. A shell script used to ensure the correct CMS login caused Firefox to be opened under root user. As a result, every attachment was downloaded into root's home folder, rather than the contestant's. The problem was detected at 00:20 after a clarification was requested by one contestant. A CMS announcement was made at 00:28 that laptops will be restarted. The Restart started at 00:39, and finished (for all contestants) at 00:41 . Fifteen minutes extra time was given to all contestants.

- The visualisation tool for the Line task did not work as described in the task statement. The

python-tk package was missing. Solution (suggested by a contestant): use python3 instead of default python.

- The promised error messages for "Vision" were shown by the public grader, but not through the CMS. As a result, the error messages in CMS were less informative but still correct. This was fixed at 02:15, and announced at 02:20.

- During the first hour of the contest, there was a long list of clarifications, that caused a maximum of about 40 clarifications to be waiting .

- Individual extra time requests Granted:
    - One student waited 12 minutes for the proper help to restore access to their files, and finally re-wrote the missing code. They were given 12 minutes of extra time. (Other students were assisted to leave quietly)
    - One contestant sent a clarification that his machine was very slow at 04:42. The reasons was Eclipse was out of memory during debug although he could develop and compile. An HTC member went to him about 6 minutes later and proposed restarting the machine, which the contestant refused to do. He received 6 minutes extra time

- Individual extra time requests Refused:
    - Several requests about the same problem which caused the rebooting of all machines
    - There was one contestant that was told by the HTC that will receive extra time and stayed at their desk
    - CodeBlocks being frozen
    - Restart took ~3 minutes
    - Did not have Notice for a few minutes

15.   Appeals

- The one appellant saved output 8 seconds after the contest ended. (The system wasn't locked as some contestants required extra time) . The student could not make extra submissions. Technical issues about downloading attachments during the first 40 minutes of the contest but that was similar for every contestant. There was some troubleshooting by the HTC that took some time during at the start of the contest, but the student could continue reading problems at the same time. There was no request for extra time during the contest, and files were not in the intended offline submit folder so it was rejected by the ISC .

Proposal: To ensure that all contestants understand the announcements (e.g. your laptop will be restarted in X minutes), a translated list should be provided as an attachment, similar to "notice".

ISC/HSC comments
1. There was an announcement made at the first minute of the contest to ensure everyone saw the notice (2 in text and one vocal) (Ali Sharifi Zarchi)
2. The student got extra time because we were unable to help him in time, not because of the technical problem. (Martin)

3. Appeals from Day 1: If a leader considers an appeal wasn't well treated please come to the ISC and the ISC will manage it.
4. Some Competition Statistics (Martin) : 9 used java for at least 1 problem. So we will propose removing Java in a year or 2

Questions:
1. In analysis time it took 45 minutes to get an answer for "what data did my program fail on". (Not all test cases were available, and the data was not in the expected format etc.) So a suggestion was made that the scientific and technical committees consider how this process might be improved for more efficient handling of questions.

2. In Analysis mode the time in cms system was 30 minutes later than scheduled so there were supposedly 23 minutes left in analysis mode but the machines were closed down - so the time left was inaccurate.

   Jonathan responded that the ISC try their best to provide test cases and help students. For most batch problems, the grader won't be much different. The mapping of subtasks is in a format, that says this subtask has these test cases. It might not be really obvious and the ISC can think about how to make this better in future.

3. A student complained that a lot of errors were generated by grader and they couldn't find the errors from students program amongst the weird grader ones. Please separate these out.

   Martin responded they are aware of it and that sometimes the grader gives lot of false positives. ITC intend to have a look at it.

   4. Please confirm the number. 327 showed both days. 4 were registered and didn't arrive and have been removed and that doesn't contain the unofficial 2nd Azerbaijani team.

16.   Elections

The following candidates filed nominations before the deadline
IC: Mile Jovanov (There were two 3 year positions, so one will remain vacant for this year)
ISC: (One 1 year position and one 3 year position)
        Georgio Aduito, Italy
        Jakub Łącki, Poland
        Michal Forišek, Slovakia
        Mikhail Tikhomirov, Russia
Also a late nomination was accepted from Mohammedreza Maleki (Iran)
ITC: (one 3 year position) The ISC received 2 forms but had not had time to consider them so asked the GA to make the decision.
        Kian Mirjalali, Iran
        Martin Mareš, Czeck republic
Candidates were given 3 minutes each to present themselves to the GA. Jakub and Michal both expressed a desire to be considered only for the one year position.

17.   Announcements

Araz made some announcements for the guests and that the organisation can assist anyone with the formalities of registering if staying more than 15 days. The Chair thanked everyone for their contributions, as he will not be available to chair the last GA. Greg Lee thanked the Deputy Minister for making the time to attend the event.

Saturday 10 August GA Meeting 7   09:30–13:00

Chaired by Araz Yusubov, assisted by Ben Burton.

Some general announcements were made:
- Eljakim Schrijvers offered to use the official IOI stamp on anyone who needed it on their receipt.
- The closing ceremony agenda will be in pigeonholes.

18.   IOI President's report (Greg Lee)

The regulation changes and code of conduct were extensively discussed in the February meeting.

There are three future hosts (Singapore, Egypt, Indonesia) and there are some challenges in finding countries willing to host, but there is one for 2023. Leaders are encouraged to think if they can offer to be a future host, recognising it is a burden, even with Acer sponsorship. At this IOI there were 2 representatives of Acer present - the chair of the Acer Foundation and the person responsible for moving equipment in and out. They were very happy about how the sponsorship was handled and the recognition given to Acer. It is possible the sponsorship may be renewed.

The Journal has been accepted to be indexed by Scopus. This is a good thing and thanks to Valentina Dagiene and to the GA for its contributions.

There should be 3 IOI past chairs as scrutineers but only 2 of them here, Mohammad Ali Abam and Troy Vasiga. Greg asked that the GA vote to additionally approve Ricardo Anido and Wolfgang Pohl.
Vote: unanimously approved.

19.   Secretary's report (Margot Phillipps)

There was the normal correspondence regarding new countries and future hosts. The minutes for 2017 and 2018 are to be discussed/ratified later in the meeting.

20.   Projects Selected (Mile Jovanov)

A decision was not made at the February meeting on the two proposals put forward. One has since withdrawn and the other one, with modifications, is being considered. Eljakim Schrijvers noted that the money budgeted will simply go into the next year's budget. And that workshop proposals are now subsumed under project proposals.

21.   ITC Report (Martin Mareš)

1. The cooperation with the HTC was very good and the ITC helped investigate some of the deeper problems such as the Firefox issue.

2. Java was introduced in 2015 but the number of contestants using it the last 2 years have been 7 and 9. It requires significant work to support Java, even more than Pascal. It has introduced a lot of extra testing. So the ITC proposes removing Java for 2021. The contest rules for 2021 need to be set next year so the GAs opinions should be heard this year.

   Latvia: There is pressure from industry to have it at our national olympiad, and in general it isn't a good thing to have just one language at the IOI. So please give the ITC's opinion about eg: python. Martin responded that ITC would like to add another language and are looking into it. Python is significantly slower so it can't be added with the same time limits. We are looking to see if we can get a reasonable execution speed from Python through using the compiler. The ITC doesn't want just C++ so removing Java does create space for a more useful language in the future. The ITC would welcome emails or to talk to people after this meeting.

3. Long term projects: security of grading/ efficient grading of interactive tasks/ job queuing in CMS (bottleneck is sending jobs to workers) / new languages

4. Software is available at https://github.com/ioi/
   sandbox (isolate)
   contest utilities

5. Contributed by the Iranian HSTC:
   - task preparation system (used this year)
   - translation system (used this year)
   - network management system (may be used again in the future)
   These are available for people hosting regional contests.

6. The checklist for future technical hosts is: http://wiki.ioinformatics.org/wiki/HostingAnIOI

7. ITC webpage: http://itc.ioinformatics.org/

8. Contributions are welcome!

9. Mailing lists:
   - ioi-announce (please subscribe)
   - ioi-discuss
   - ioi-ic, ioi-sc, ioi-tc – members of the committees
   - ioi-ga – members of the GA, temporary list during the IOI
   - ioi-training – connecting organizers of regional training camps with people interested in teaching
     Others: http://lists.ioinformatics.org/ and Internal ISC/ITC systems (e.g., IOI archive)

Questions/Comments

Germany asked about the "IOI in a box" project. Eljakim Schrijvers undertook to send the github link to the GA mail list. The developer would welcome feedback. Belgium suggested that projects are presented during the second contest day. Unfortunately authors of projects will not always be present.

22.   ISC Report (Ali Sharifi Zarchi)

1. Scores and appeals: an email was sent to the GA finalising the day 1 appeals. The changes were THA1 +20, CAN2 +40, THA2 +27, GRC2 +15. Medal allocations were not affected. The reason for the delayed response was that the initial timestamp was 2 minutes after day 1 finished, but later we noticed that the start of the backup might have been sooner. As a result, the final changes in a few contestants' code were missing in the snapshot. This was fixed by looking into a 2nd

snapshot which was done slightly after analysis mode. The ISC initially didn't have a snapshot they were 100% confident of as being at the very end. The ISC undertook a case by case analysis by the timestamps of files in the 2nd snapshot, and by the submissions made during appeals. Only one contestant's code could be a matter of question. The next code in the 2nd snapshot had been edited and submitted, and the ISC decided to trust the team leader. A serious discussion was held by the ISC and it decided not to punish the contestant based on our mistake and trust the leader who confirmed that there was no score change for that contestant. ISC are reasonably confident nothing has been missed for any contestant. Although it is noted that a single linux comment can edit the time-stamp ISC is confident that the 4 didn't do that. The ISC is disclosing this detail for transparency, but if there are questions, please talk to Ali.

2. IOI 2018 survey results presented by **Jonathan Gunawan**
   Completed by 95 students and 71 leaders. (A lower response rate than in 2017)

   1. Feedback on tasks: Nothing outstanding. The easiest one on each day (tasks 1 and 4) received a little more negative feedback. Note that in 2017 the preferred way to obtain the input data for non interactive tasks for 47.7% was reading from standard input and 52.3% preferred using a grader function (or writing a function that receives the data in function arguments)
   2. Contest Environment: 11 complaints about the lack of a mouse, 5 complained about Codeblocks (buggy?), 3 didn't want laptops/wanted a larger screen and 2 wanted more food.
   3. Online judge: generally positive about CMS' availability and being intuitive.
   4. Rule changes: For the live statistics, students and leaders had mixed feelings about keeping them for the next year (2019), but more people did not want to keep it for future IOIs, so we removed it. Answers varied wildly depending on the roles.
   5. Score rounding (0 or 2 decimal places) and the Testing Interface also received mixed feedback (50 to 60% positive for both).
   6. Programming Languages – numbers didn't change much from 2017. C++ vast majority (>90%) although some did ask if Python would be available.
   7. Printing: students want printed task statements but to print during the contest is less important (23% said it was not at all important compared with 31% in 2017) so maybe being able to print is of decreasing importance.
   8. Code of conduct: 94% leaders said they spoke to students , 71% of contestants read it.
   9. Acer Sponsorship: Brand awareness was high (96%) and only 10% reported a negative experience at the competition. Complaints were about screen size, the touchpad and the lack of a mouse.

   Please remind students to complete the 2019 surveys.

3. Task authors 2019.
   Day 1 : Shoes: Danylo Mysak, Split: Alireza Farhadi, Saeed Seddighin. Rect: Peyman Jabbarzade
   Day 2: Line: Tomasz Idziaszek, Jakub Łacki, Vision: Danylo Mysak, Walk : Riku Kawasaki

   The GA applauded and were asked to please keep submitting good tasks.

4. Rules for next year (presented by Wei Liang Gan)
   A draft of the rules with the changes in red has been emailed to you.

The draft will also be available on the IOI 2020 website from next week onwards, and any changes should be kept to minor changes.

a)   Competition supplies: allow the addition of medicine, medical supplies, earplugs and earmuffs (not headphones, earphones, microphones, speakers) and allow the technical committee to remove any items disruptive to other contestants.

Questions:

Australia asked if they can give some indication prior about what is too noisy for a keyboard, as forcibly removing it during the competition may be distressing. The response is it is hard to give a definitive list and it depends partly on how you use it. We thought some were borderline "too clicky", but we checked on the contest floor and they were fine.

Germany made a similar point that they would trust that the technical committee would be sensible if a contestant was complaining only because they were stressed and couldn't solve a problem. If a contestant is unsure about their keyboard, they could ask it is checked during the Practice session and it can be pre-certified as acceptable.

Russia made the point that with earplugs students may not hear announcements, and that it may take extra time to discriminate between earplugs and earphones. The response was that if a student wants to hear announcements rather than use CMS, they shouldn't wear ear plugs. But if they think they may be affected by noisy keyboards, then the rules will permit earplugs/ear muffs.

Bulgaria suggested that earplugs be supplied, then there is no need to check.

United Kingdom suggested that the draft rules be amended to require earplugs to be submitted. Singapore agreed to amend the rules.

b)   Change from leaving items on the table between contest days to re-registering items before Day 2. For both days students will be notified immediately whether their item will be accepted or rejected to bring into the contest hall when registering their items. (This reduces the possibility of items being lost)

There was further discussion about how noisy keyboards and other items may be removed (practice session or contest days).

c)   Assistance and Clarifications Requests: Minor updates for 2020 with a clear distinction between the two types of request.

d)   The Grading Workstations will have similar hardware to the contestant workstations. They will judge each submission using a similar execution environment, although the software will be different.

e)   Ending the competition : A protocol for requesting extra time is added: The Contestant should submit a clarification request (via the Grading system or a form) and sit at their desk, not talking to other contestants or leaders. (Similar to Day 2 this year)

f)   Add a warning regarding the use of Code::Blocks and Eclipse.

g)   Implementation of tasks: As there is some interest in using stdin/stdout for non interactive tasks, we will look into it in February after the tasks are confirmed. The decision will be announced by February so that contestants can prepare for it.

Comments:
Slovakia: During the Practice session it is better for leaders if their students are seated together. Singapore agreed to look into it. The counter argument was made by Russia that each contestant should test their own machine so they should keep to that machine. (An aside comment on the value of people mixing was made.)

Germany: Subtasks used to be 0 or 100%. That rule has softened. So it should be explicit in the rules that it is not 100% or nothing.

Australia :Is the amendment about system calls going to be added to the rules? (if you allocate an array that effectively generates a system call). Jakub responded that
there was an early version of the notice that forbade system calls such as exit. The rule was not changed but the wording was changed so that it represented the reality.

The move to announce the rules in advance was applauded.

Belgium: During the Practice session, they had a question about p-solver and it was difficult to get help (and agreed that students should stay on the same computer). It was also stated that the first tasks were quite easy so this was helpful for not getting low (0) scores and the median was quite high. Maybe a question about this could be added to this year's survey and see if people like this. Singapore responded they will try to make staff identifiable during the Practice. For the issue of seating during the Practice session, a straw poll was held with the result largely in favour of students staying in their own seats and thus not being seated together at the Practice.

23. ISC and ITC elections

Approval voting was explained and for the IC, Mile Jovanov was elected unopposed.

While the votes were counted for the 3 year ISC position, Item 24 was dealt with. Seventy nine ballots were cast and the results were: Georgio 44, Mohammedreza 10, Mikhail 57. Mikhail was elected.

While the votes were counted for the 1 year ISC position (4 candidates as Mikhail is removed as he was elected to the 3 year position), Items 25-27 were dealt with. Results were Georgio 30, Michal 44, Jakub 50, Mohammedreza 8. Jakub was elected.

ITC votes: Kian 13 and Martin 75 so Martin was elected.

The scrutineers were thanked.

24. Financial Report and Budget (Eljakim Schrijvers)

A signed version has been given to the Secretary, and can be seen if any member would like to see it. All payments are approved by the President and Secretary. A copy was placed in all pigeonholes.

Income: The participation fees are what is collected. This year one country paid in last year's accounting period and there is a little bit of interest. (Actual €25006)

Expenses: In line with Development (Actual €16579)

The Cash position is healthy. (€129083) IOI in a box is already paid for, so the community is asked to come up with projects that further the IOI.
The accounts have been audited. There were no questions about the finances.

The Budget for 2019-2020 was presented. The expense for the website was explained. The new website is facing the world but the IC wishes to maintain the old internal one. The Live stream receives positive feedback from parents and leaders. The workshop was removed as it is now subsumed under Projects (€7500). ITC and ISC have a budget and may spend it if they need something.

A vote to approve the budget was passed unanimously.

25.   Regulation changes (Ben Burton)

N2.6.2, N5.6.1 - which describe the procedure for applying as a new country or returning after a 3 year lapse;
E3.4 - a future host should aim to keep the same IC representative for 5 years;
E6.11 and E6.12 clarify how medals are computed when contestants are disqualified and/or ineligible;
N6.12 To reference the Code of Conduct. As it is in a Note, it does not form part of the formal regulations.

Votes: 78 in favour, against 0, abstain 0

Ben also explained that the IC plans to fix section 6 (Translation, evaluation and appeals) so that the regulations match what we actually do. For example, Leaders should be available to translate questions during the whole contest not just the first half as is currently stated. The plan is that they will be discussed in February, the GA is notified by email and then they can be implemented experimentally in Singapore then voted on formally at the final GA of IOI 2020. The GA will have 4 months to come back after Feb before IOI2020 to object.

26.   Closing Ceremony Reminders (Araz Yusubov)

A reminder was given to talk to students about not taking large objects on stage . The wifi hot spot names from the Opening ceremony were displayed and although they are slightly better than last year, leaders are asked to remind students again to be respectful.

27.   Proposals from GA members

Australia asked that an announcement be made about flags as they appear year after year. The Chair agreed it can be done. (Small flags which don't obscure others are OK)

Spain asked that the IC consider honorable mentions and medal allocations as this was raised in the Leaders Group discussions on Competition Day 2. Saudi Arabia suggested to the top 40 or 50 just below the Bronze cut off. (IMO does it for anyone with a fully solved problem)

Singapore suggested that we randomise the order we sit in the GA , buses etc. each year to encourage more socialising. (Met with applause). Jakub said this would be OK if a map was supplied.

28.   2017 GA Minutes

These were approved in 2018 with the exception of two points missing from the minutes. One related to the announcement according to the regulations of the 2021 host and that exceptions for eligibility should be raised before the February meeting (raised by Latvia). The amendments were read by Ben Burton (Item 34) and a vote to ratify these additions was taken.
Vote: 65 in favour, against 0, abstain 9

29.   2018 GA Minutes

The Secretary has written them from notes supplied this week and they were emailed to the GA this week.
Comments:
Spain : The minutes say the vote for host countries was unanimous. Did we vote? If so, Spain would have abstained. The Secretary agreed to change it to " a majority".
A vote to approve the minutes was taken: 71 in favour, against 0, abstain 5.

30.   New Trophy Design (Eslam Wageed)

The current one was designed in 2008 and we would like to use the new one from 2020. Ben Burton added the IC approved it as most importantly it will not break in shipping, as this happened to at least one every year.
Vote: against: 0, 1 abstention, so the majority were in favour.

31.   Future Hosts (Greg Lee)

IOI 2020: The dates are on the website for Singapore, July 19 to 26.

IOI 2023 (Greg Lee)
There was one bid for IOI 2023, Hungary, who have hosted 1996. However 2023 is the 120th anniversary of the birth of the Hungarian John von Neumann . The IC invited a delegation to present and the IC voted unanimously on their application. The GA applauded and a unanimous vote in favour was taken.

IOI 2024 . The President asked the GA to consider hosting and to submit an enquiry to him or the Secretary. Please supply a letter of intent and how visa support and security will be handled.
If financial assistance is required, Greg offered to get in touch with potential sponsors.

32.   ISC confirmation of medals (Ali Sharifi Zarchi)

An anonymous email, accusatory of one team, was sent to several of the organisers and publicly. The ISC investigated and reviewed all the submissions of the accused team. There was no evidence that results were similar because of similar code. There was no response by the accuser to an offer to meet with the Organising team. There were many more contestants all on the same result, and the probability of two people with the same score not being in the same team is reasonably low. However the ISC took the allegation seriously and inspected the code. The ISC is confident there was no evidence of cheating and ask the GA to assure students it was investigated thoroughly.

RESULTS
327 official contestants: 28 gold, (414.75), 54 silver (329.18) and 81 bronze (250.19).

A vote to approve both the scores and the medals was taken: 82 in favour, against 0, abstain 0.

33. Acknowledgement of Long Contributions (Greg Lee)

Twenty-five years service was acknowledged for 3 leaders:
From Denmark, Knud Fjeldsted: Deputy Leader for 14 years and Leader for 11 years.
From Hungary, Gyula Horváth: Leader for 21 years, ISC 2 years and Chairman when the IOI was in Hungary and one year as observer.
From Columbia, Mario Cruz: Leader for 25 years and IC member for 3 years.

Ben Burton added that Greg himself has served for 26 years and there were additional long service people named by the GA. From the Netherlands, Eljakim Schrijvers has also served for 26 years.
From Russia and the USSR, Vladimir Kiryukhin has served for 30 years.
This shows the Importance of the Statistics website.

34. Thanks for IOI 2019

Greg thanked everyone involved from Azerbaijan, especially the chair of the host organising committee (Araz Yusubov), the chair of HSC (Farid Ahmadov) and the chair of the HTC (Jamaladdin Hasanov). Ali had a gift prepared. Araz responded that he wasn't technically the Chair, the Minister of Education is. But is a great community and it has been a privilege to be part of it. He thanked everyone for supporting the Organising team and there is a saying: " There is no way to IOI, IOI is the way".

Farid added he would like to thank all those who contributed and special thanks to Ali, Jakub and the Russian delegation who helped the HSC enormously. Ali called the names of the HSC to stand for applause. (Kian Mirjalali, Bartosz Kostka, Danylo Mysak, Mohammadreza Maleki, Gleb Evstropov, Mahdi Safarnejad, Amir Keivan Mohtashami, Ali Ahmadi, Mahdi Shokri, Ali Shafiee, Mohammad Roghani, Ali Haghani)

Araz: Closed the meeting, thanking everyone and expressed the hope to see everyone in Baku again.