

IOI 2017 Halfway Through



**29th International
Olympiad in
Informatics**

July 28 – August 4, 2017 Tehran, Iran

No. 5 - Tuesday, August 1, 2017



Islamic Republic of Iran
Ministry of Education



Shahid Rajavi
Teacher Training University



Young Scholars Club



Sharif University of
Technology



Interview with the Chair of the Host Scientific Committee

Choosing tasks and preparing solutions for them may be the most important aspect of the International Olympiad in Informatics. This is the important responsibility of the Host Scientific Committee alongside the International Scientific Committee. The tasks chosen for the Olympiad are the product of a one-year effort. We spoke with Dr. Ali Sharifi-Zarchi, Chair of the Host Scientific Committee about this process.

What is the process for designing and selecting tasks for the IOI?

The process of selecting tasks takes place in the following manner: -1 The International Scientific Committee makes a call for tasks to be suggested. -2 Select IOI enthusiasts, who are often medalists from past years, send their encrypted and confidential suggestions to the Scientific Committee.

Alongside the International Scientific Committee, the Host Scientific Committee is formed. Usually between 50 and 100 tasks are received per round. These tasks are given to the Host Scientific Committee. After reviewing and evaluating the proposed tasks, the committee produces a long list of 15 to 25 tasks. The International Scientific Committee usually holds a meeting in the winter in the host country in order to select the tasks from the long list.

For IOI 2017, members of the International Scientific Committee convened a meeting in Iran in February. At this meeting, nine tasks were selected for this year's Olympiad, which included six tasks for the two main contests (each contest has three tasks) and three tasks

are set aside for reserve.

Who are the members of these two committees?

The International Scientific Committee, is composed of representatives of last year's host country (Russia), this year's host country (the Islamic Republic of Iran), next year's host country (Japan), three individuals selected from countries participating in the Olympiad and one representative of the International Technical Committee.

The members of the Scientific Committee also include the elite Iranian youth who participated in this event in previous years. They now supervise Olympiad courses in Iran.

How are the 9 selected tasks prepared for IOI 2017?

The Host Scientific Committee, from the time of selecting the 9 tasks and up to the start of the Olympiad, has the opportunity to prepare the tasks. The tasks are written and repeatedly read and modified. In addition, tasks and their solutions are trial tested many times.

Finally, one night before the contest, the leaders of the countries are brought together and the contest tasks are presented to them. If representatives of the countries support the tasks, they will be used for the contest. However, if a task is not approved, it is replaced by a task from the reserve.

How do you make sure the tasks remain confidential?

From the first day that suggested tasks are submitted for IOI from around the world, the highest level of security is considered. Tasks are



sent to a website and not by e-mail, and only members of the Scientific Committee can access the system using confidential protocols. After the tasks are selected, the members of the Scientific Committee will send the content of their emails in encrypted form; even if someone gets access to these emails, they still will not be able to obtain the tasks.

How will the tasks be judged?

The Scientific Committee provides the judges with the Input and Output for the tasks. In fact, for each task, we have created a hundred inputs and the correct answers to these inputs are obtained by a program produced by the Scientific Committee. Of course, for each task, 10 different solutions are written, so that by comparing the solutions, we become certain that the correct answer has been chosen for each input.

If a student is able to produce the correct output for all of the 100 inputs, they will receive a full score for the task. However, it is possible for the student to obtain partial points from the judges for an incomplete task. Each task has 100 points and all Olympiad tasks total 600 points.

IOI 2017 Halfway Through

Mohammad Ali Abam is a member of the IOI International Committee and Chair of the IOI 2017. In this discussion he briefly explains the efforts made to turn this event as good as possible.

The IOI 2017 has passed the half-way point. What is your message to participants?

Historically, Iranian scholars have contributed to global science. In more recent times, Iran has cultivated more than its fair share of the world's computer scientists and engineers. Many of these scientists are linked to national and international Olympiads in informatics as a crucial step in their education.

The hosting of this contest has been very important to my colleagues and I in Iran, and much effort has been made to make it a memorable experience.

The GA meeting for task selection and translation was held without any problems. Furthermore, the first day of the contest took place smoothly, and our guest countries were pleased with it.

We also provided various city tours for our guests. We have about 600 foreign guests and



300 domestic guests. Transferring 900 guests in within Tehran's traffic is sometimes tricky. However, we are working hard to improve the timing of the remaining recreational programs.

Tell us about the process of preparing for this event.

In 2013, when Iran's request to host the

contest was accepted, plans for the event began. Serious operational work for holding the event was launched last summer. The Iranian Ministry of Education took responsibility for organizing this event. Shahid Rajaei Teacher Training University, Young Scholars Club, and Sharif University of Technology and University of Tehran also took part in organizing the IOI 2017.

Since last year, the Host Technical Committee has worked hard to prepare the software and hardware for the event. The Host Scientific Committee also worked hard preparing the contest tasks. In addition, we carried out a long process in selecting our guides. As a whole this was a great undertaking and tens of people were involved in it.

Tell us about the closing ceremony. How many medals will be given to contestants?

The closing ceremony will be held Thursday afternoon at the International Convention Center. One-twelfth of the participants will receive the Gold Medal; One-sixth will receive the Silver Medal; and a quarter will receive the Bronze Medal.

Iran at a Glance: Yazd

Located in central Iran, Yazd is one of the most beautiful desert cities in the world. It is an ancient city dating back to the Sassanian period (224-651 AD). Yazd is nicknamed «the City of Windcatchers» in Persian. Historic city of Yazd was listed by UNESCO as a World Heritage Site in 2017.

Yazd is an important center of Persian architecture. Because of its climate, it has one of the largest networks of qanats in the world. Qanat is a web of horizontal holes dug under hills to gather and divert ground water.



Iran at a Glance: Ramsar



Ramsar, bordered by the Caspian Sea on north and Alborz mountain range on south, is a coastal city north of Iran. The imagery of the mountains and sea has astonished many visitors. It has a verdant, picturesque landscape, lush with orange groves, and trails through nearby hills.

Close-Up



Ștefan



Beker & Lendvaj



Wögerbauer & Gugel

Participants after the Contest

After the first round of contest, we spoke to a number of contestants.

Robin Gugel from Austria believed that the first day was challenging. He also said, "Iran is Surprisingly Cool, and our place of stay is great. I would like to see more places in Iran. In Austria, there is a different view about Iran. However, now that I've traveled to Iran and seen the country, my view has become much better."

Jakob Wögerbauer also from Austria said, "When I first read the tasks, I thought how simple they are, but when I started working on

them, I realized they weren't simple at all and I couldn't begin to solve them as I anticipated." Jakob added, «Before my trip, I searched and read about Iran on the Internet. But what I see is better than what's written on the media. The Iranian people are very friendly and I really like this country."

We also spoke with Adrian Beker and Vilim Lendvaj from Croatia. Lendvaj believed this year the tasks were more complicated than usual. Beker said he solved the wiring task completely, but it took over four hours.

Ștefan Constantin-Buliga, from Romania, was

full of energy after the 5 hour contest. Having solved two of the questions completely, he said, «The tasks were really good and beautiful. I thought I hadn't solved the tasks as well as I could have, but once the contest was over and I saw the results, I was very happy."

Ștefan also said, «Iran is a very beautiful country. We visited Milad Tower and I really liked it. I'm glad to be here and to see a country with all this natural beauty, culture and ancient history."



TODAY'S SCHEDULE TUESDAY AUGUST 1

| Time | Contestants | Leaders | Visitors |
|---------------|---------------------------|---------------------------------|------------------------|
| 06:00 – 08:00 | Breakfast | Breakfast | |
| 08:00 – 09:00 | Entering Contest Hall | | |
| 09:00 – 10:00 | Contest | Group Discussion | Transfer |
| 10:00 – 11:30 | | | Handicrafts Exhibition |
| 11:30 – 13:00 | | | Azadi Tower |
| 13:00 – 14:00 | | | Transfer & Lunch |
| 14:00 – 15:30 | Lunch (Evin Hotel) | | Jewellery Museum |
| 15:30 – 17:00 | Day 2 Results and Appeals | | Transfer |
| 17:00 – 18:00 | Transfer | | |
| 18:00 – 19:30 | Botanical Garden | | |
| 19:30 – 20:30 | Juice & Music | GA Meeting 6: Review Appeals | Juice & Music |
| 20:30 – 21:30 | Dinner (Botanical Garden) | | |
| 21:30 – 22:30 | Transfer | | |

Places to Visit: Tuesday

National Jewelry Treasury

The National Jewelry Treasury is housed within the Central Bank of the Islamic Republic of Iran, in the heart of the city of Tehran. Here, is among the most dazzling collections of gemstones and jewelry in the world.

This treasury was established in Tehran in 1955 in order to preserve the country's historic treasures. Most of the royal jewelry of Iran from the Safavid, Afsharid, Ghajarid and Pahlavid dynasties are on display in this museum. Among them are the Darya-ye-Noor diamond (the sea of light), Naderi Paisley, Kiyani crown, the gemmed globe, the Peacock bed (Ghajarid), and the Naderi bed.



National Botanical Garden of Iran

The National Botanical Garden, located in Tehran, at 150 hectares, is planned to be the main center for horticulture and plant taxonomy in Iran. A herbarium of Iranian plants is gradually being built up. It currently consists of some 160,000 plants. Also there are gardens of non-Iranian plants such as Himalayan, American, Japanese, African, and Australian.

The garden also contains an arboretum, six lakes, hills (to represent the Alborz and Zagros mountains and Himalayas), a rock garden, a waterfall, a wetland, areas for desert plants, a Salt Lake, a river about 1 km long, a fruit garden, and a picnic area. The botanical and horticultural library has a collection of over 11,000 volumes.



Azadi Tower

The Inverted-Y-shaped Azadi Tower (Liberty Tower) built in 1971, is one of Tehran's landmarks. The tower stands at 45 meters high and is entirely covered in white marble.

Built with white marble from Isfahan, the monument includes 8,000 blocks of stone. Computer models were

used to «define its complex woven surfaces,» which, at the time, was a state-of-the-art technology.

Azadi Museum is located underneath the tower, on the basement floor. The museum serves as an exposition of arts, national heritage, and cultural handicraft.

