



Dear participants of IOI-2016,

I sincerely invite and welcome all members of the IOI community to participate in the XXVIII International Olympiad in Informatics to in Russian Federation, Kazan, on August 12th to 19th.

Russia, as a part of the USSR, has already been an organiser of the IOI in 1990 in Minsk, but in 2016 our country will be hosting the IOI for the first time. For this reason the Russian Federation has a great experience of the IOI. As a Russian team leader or as a member of the International Committee, I have participated in all IOI competitions, starting with the first IOI held in Bulgaria in 1989, and therefore I can say with certainty that the best experiences will be put to use while holding the IOI in 2016.

Besides participating in competitions, all participants and guests of IOI 2016 will have the opportunity to get acquainted with our country: to see one of the best cities in Russia – Kazan and its environs, to feel Russian hospitality and friendliness, to see our achievements in the field of in-

formatics and information technologies, to get acquainted with one of the best universities in Russian Federation – Kazan Federal University, and to see the best examples of national traditions and Russian architecture.

The fact that the main organisers of IOI 2016 are the Russian Government, through the Ministry of Education and Science and the Ministry of Telecom and Mass Communications, as well as the Administration of the President and the Government of the Republic of Tatarstan, ensures a high level of organisation and holding of the 28th IOI and security for all participants and guests. I hope that IOI 2016 will be a successful and unforgettable experience for all.

Dr. Vladimir Kiryukhin,
Chairman of IOI 2016,

Participant Countries IOI 2016

Argentina	Cuba	Iran	Montenegro	Spain
Armenia	Cyprus	Ireland	Netherlands	Sri Lanka
Australia	Czech Republic	Israel	New Zealand	Sweden
Austria	Denmark	Italy	Nigeria	Switzerland
Azerbaijan	Dominican Republic	Japan	Norway	Syria
Bangladesh	Egypt	Jordan	Philippines	Taiwan
Belarus	Estonia	Kazakhstan	Poland	Tajikistan
Belgium	Finland	Kyrgyzstan	Portugal	Thailand
Bolivia	France	Latvia	Republic of Korea	Tunisia
Bosnia and Herzegovina	Georgia	Lithuania	Romania	Turkmenistan
Brazil	Germany	Luxembourg	Russia	United Kingdom
Bulgaria	Greece	Macau	Serbia	United States of America
Canada	Hong Kong	Macedonia	Singapore	Uzbekistan
Chile	Hungary	Malaysia	Slovakia	Venezuela
China	India	Mexico	Slovenia	Vietnam
Colombia	Indonesia	Mongolia	South Africa	

Observer Countries



How do you get students into IT?

- Mr Mavrin, kids these days are totally enthralled by their various gadgets – sometimes it seems games and social media are what get them out of bed in the morning. But how closely does it relate to computer science, and are we seeing an increased interest in it?

- Absolutely – everything is connected. Companies need more programmers, so they raise salaries and offer other perks; children see that it's good to be a programmer and so specialise in computers. These days all the best institutions have faculties entirely devoted to the computer sciences.

- Do you think that tournaments like IOI 2016 help acquaint schoolchildren with the newest computer technologies and with the latest knowledge in that field?

- The International Olympiad, certainly, sets a trend for the whole world. It is the culmination of all the national olympiads, which in turn are the culminations of regional competitions and so on. For this reason the topics covered in IOI tasks sooner or later become known to all.

- On that note – how much do the education programmes at schools and universities differ from the state of the IT field as a whole? What could we do, in your opinion, to better tailor these programmes to contemporary demands?

- It all depends on the place. At ITMO, for example, we try very hard to keep up with the times. It's difficult – technology moves on very quickly. There are some courses we have to rewrite practically every year.



Pavel Mavrin was a silver medallist at IOI 2002, world champion at the 2004 student championship (ACM ICPC), graduated from ITMO in 2008.

The International Scientific Committee (ISC) and Russian Scientific Committee develop the tasks for the Olympiad: each task requires several solutions and must undergo checking. Over 10 programmers are involved with it.

- What is the purpose of olympiads like this? Apart from just finding out who best knows their subject.

- Olympiads like this have two main goals. One is to seek out talent. This is needed to identify talented children in time and begin training them up. This is what happens at the summer schools and camps. The other is to make science work more popular. We show children that programming is fun and interesting, and that programmers aren't all bespectacled and besweated and sat behind a computer for days on end (although some of us invariably are).



Kazan's preparations for IOI 2016

The software is one of the most important elements of an informatics olympiad. The Russian software began development in 2015, and was therefore ready for demonstration at the International Committee meeting in February 2016, where it received the green light for use at IOI 2016.

The National Technical Committee is made up of a team of highly qualified specialists with a wealth of experience of Russian and International Olympiads: Nikolai Vedernikov, Georgi Korneev, Pavel Mavrin, Sergei Melnikov, Alexander Klenin and Ilshat Safiullin.

The automatic solution checking system was trialled at both the All-Russia Olympiad in Informatics and the Innopolis University Open Olympiad.

This year, instead of the Italian-designed CMS system, the Olympiad will use PCMS2, which was developed by a Russian team of specialists.

The hardest part of working with multiple program modules is ensuring their stability and providing for all possible



Sergei Masyagin, member of the International Technical Committee, member of the Russian Technical Group, Prorector of Innopolis University.

outcomes, ensuring trouble-free checking of the solutions submitted by participants.

An additional complication at the IOI is that the contestants speak different languages. The tasks are developed and checked in English, and translated into their team's native languages by the team leaders during the Olympiad itself.

Much work has gone into preparing for the International Olympiad in Informatics, and I am confident everything will proceed to the highest standard. I hope the contestants are able to gather their strengths and show everything they are capable of. They have come a long way to be here at the Olympiad, becoming the best at their schools, in their cities, and eventually in their countries. This is the final hurdle, and I wish everyone success in tackling it.





28 July saw the raising of the participating countries' flags in Universiade Village's competition hall.

81 teams (+1 additional team from Russia) from 86 countries are set to take part in the XXVIII International Olympiad in Informatics.

There will be 315 contestants, as well as 4 additional contestants from Russia.

In addition, representatives of 5 countries (Honduras, Iceland, Morocco, Palestine and El Salvador) will attend in the role of observers and 27 International Committee members.

Tradition

Welcome to the Republic of Tatarstan

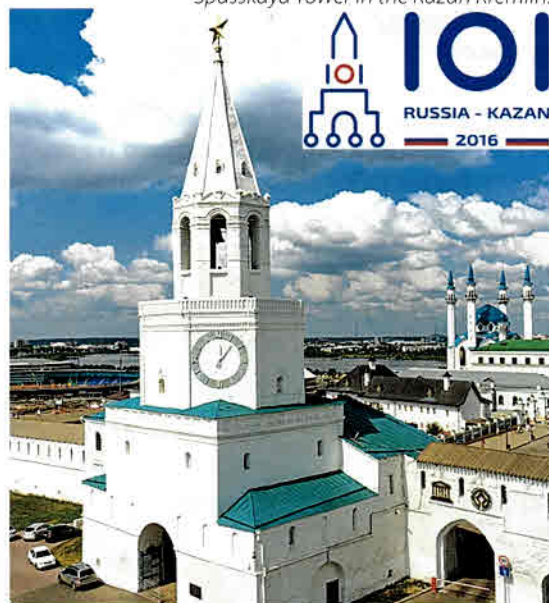
The Republic of Tatarstan, together with its capital Kazan, is a subject of the Russian Federation and part of the Volga Federal District. It is one of the most developed regions of Russia and home to all manner of industry, from farming to aerospace engineering. The Alabuga Special Economic Zone is a prime example of this, and has enjoyed considerable success in recent years. The primary resource here is oil – the Republic of Tatarstan contains around 800 million tons of recoverable oil (127 fields, incorporating more than 3000 deposits), as well as estimated reserves of over 1 billion tons. Other resources include natural gas, coal and other useful minerals.

A broad, interesting, educational programme of cultural and entertainment events has been drawn up for participants, team leaders and guests at the Olympiad, and starts from day one.

The following day will see PE replaced with history, as Olympiad participants will be taken on a sightseeing tour of Kazan (team leaders will have the chance to do this tour on the next day), while guests will take a tour of the Conservation-Museum Complex of the Kazan Kremlin (as will team leaders in three days' time). There's plenty to see here: situated where the Volga river meets the white walls of the Kremlin, the complex is the oldest part of our city. Archaeologists have discovered artefacts here which allow us to trace the city of Kazan back to the 11th century, and many more believe a settlement existed here 100 years earlier still. Much about its early history is evident in the layout of the Kazan Kremlin Complex.

The Kazan Kremlin has been a UNESCO World Heritage Site since 2000. It is home to museum exhibitions such as the history of the statehood of Tatarstan and its natural history, Islamic culture, the Cannon Courtyard, the history of the Cathedral of Annunciation and the Second World War (from the National Museum RT fund), and also an art gallery (from the Museum of Fine Art RT fund), the Manezh exhibition hall Hermitage-Kazan Centre.

The logo of the IOI 2016 reflects the city where it is taking place - in this case the outline of the Spasskaya Tower in the Kazan Kremlin.



Words which are the same in both languages

ENGLISH	RUSSIAN	TATAR	ENGLISH	RUSSIAN	TATAR
CYBERNETICS	Кибернетика [kibernetika]	Кибернетика [kibernetika]	OPERATOR	Оператор [operator]	Оператор [operator]
INFORMATICS	Информатика [informatika]	Информатика [informatika]	INTERNET	Интернет [internet]	Интернет [internet]
COMPUTER	Компьютер [komp'uter]	Санак [sanak]	PROCEDURE	Процедура [procedura]	Процедура [procedura]
PROCESSOR	Процессор [processor]	Процессор [processor]	WEBSITE	Сайт [sajt]	Сайт [sajt]
TRANSLATOR	Транслятор [trasljator]	Транслятор [trasljator]	COMMUNICATIONS	Коммуникации [kommunikacii]	Коммуникации [kommunikacii]
PROGRAM	Программа [programma]	Программа [programma]	CHAT	Чат [tjat]	Чат [tjat]

What's in a name?

The most popular Russian names:

Aleksandr, Ivan, Mikhail, Vladimir, Pavel, Sergei, Sasha, Maria, Katya, Anastasiya, Anna.

The most popular Tatar names:

Timur, Chulpan, Rustam, Bulat, Leila, Alfiya, Landysh, Rezeda, Azaliya, Marat, Marcel.

WEATHER FORECAST

12 August, Friday

Day  +27 C / 80.6 F

Night  +18 C / 64.4 F