



# NEWSLETTER

19<sup>th</sup> INTERNATIONAL OLYMPIAD IN INFORMATICS  
ZAGREB, August 15 - 22



No. 5

Tuesday, August 21, 2007

## All's well that ends well

Today's Schedule	
<b>Contestants</b>	
18:00 – 19:30	AWARDING & CLOSING CEREMONY Zagreb Fair
20:30 – 22:00	Dinner & Farewell Party SD S. Radić
<b>Leaders</b>	
8:00 – 9:00	6 <sup>th</sup> GA MEETING SD S. Radić
18:00 – 19:30	AWARDING & CLOSING CEREMONY Zagreb Fair
20:30 – 22:00	Dinner & Farewell Party SD S. Radić
<b>Guests</b>	
18:00 – 19:30	AWARDING & CLOSING CEREMONY Zagreb Fair
20:30 – 22:00	Dinner & Farewell Party SD S. Radić

The Second Competition Round, thereby the competition part of the 19th International Olympiad in Informatics has finished yesterday at 13:50 p.m., according to the schedule. Our reporters have gathered impressions from several contestants representing various countries.

### Yashar Abbasov, 14 and Tural Neymanov, 14, Azerbaijan

We love Croatia, it is a very nice country, and Zagreb is also very nice and big city. We were on the competition for the first time, so we didn't know what it was like, but we want to know a lot and we will learn a lot. It would be great to come again next year and we will practice for it this year.

### Erand Smakaj, 17, Albania

This is my first time in Croatia and my first time on IOI. The organization is really good and the people are nice. I have met a lot of new people here and made many new friends. I think that the second contest round went better than the first. It was my first time, I had to get used to this so I think I did better today. I think my team leader will be happy.



### Iskren Chernev, 18, Bulgaria

*Have you ever been to an Olympiad?*

Yes, I have been to last year's Olympiad in Mexico. I liked it there but I didn't make a good result. This year I did pretty great on the first day, second day didn't go so well but I think I will make it for the gold. I met a lot of new friends here from many countries.

### Ahmed Fikri, 18, United Arab Emirates

This is my second time at the IOI, I've been to Poland. Today was the best day among all the days I had in those two years. I'll probably get the best results for this year. I'm having a nice time here, the weather is good, the city is quite calm. I've met many new friends, from Croatia, Poland, Bosnia and Herzegovina, New Zealand... Since I have already been to an IOI, I know a lot of people – from Albania, Portugal.



### Jack Murray, Australia

I did better on the first day of the competition because the tasks were harder today, I suspect it's because they don't want a bunch of perfect scores, they don't want multiple first places. Today was definitely harder, especially the task three (Training). 'Miners' was very easy, it involved a technique we were supposed to have learned. I have been to an IOI last year but the result will be definitely better this year. I've been training for it more. And Croatia rocks!

### Indrek Klanberg, Estonia

I am satisfied with the result, I gave my best. I made many friends at the IOI which is great because there are lots of fun and interesting people here. This is my first time in Croatia, and my second IOI. I think that last IOI was a bit better because I haven't been practising this year much. But it doesn't matter, I like this more because of the people around here.



### Matteo Boscariol, Italy

This is my first time at the IOI and I am very excited. I think that I did quite well at the contest, I'm satisfied. I met some guys from Albania (they speak Italian, too), a guy from Switzerland and an American girl...quite a lot of people. I'd like to come to the IOI again next year.

# HOST SCIENTIFIC COMMITTEE FINAL REPORT

Bojan Antolović, HSC President

Now, after both competition days are over, it is a good time to look back at the events.

The practice round showed us that Pascal environment needed to be fixed before the official competition can begin. After some changes (e.g. allowing RHIDE to compile Pascal), the first competition day went on with very few difficulties.

The evaluation system worked well throughout the competition. There were 16 computers dedicated for testing the submitted solutions, which allowed the system to keep up with the thousands of solutions that were sent by contestants. Idle time of the system was used to test the solutions against the official test data. Thanks to that, the complete testing finished and all the scores were calculated within 3 minutes after the end of the competition!

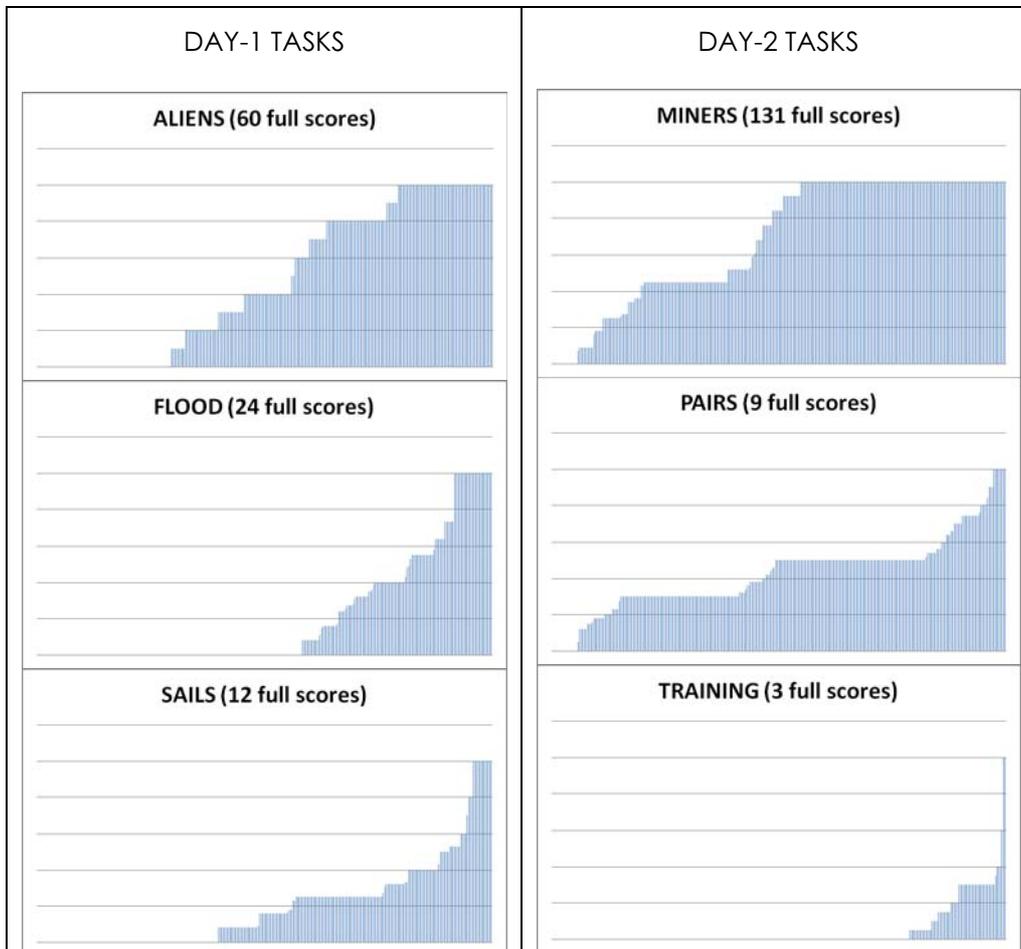
The tasks for the first competition day proved to be quite difficult. Average score on the first day was 25% lower than the second day. 60 contestants achieved the maximum number of points for task Aliens, 24 contestants for Flood and 12 contestants for Sails.

On the second day, the results were much more balanced. Miners was the easiest task on the competition. It has been fully solved by more than one-third of the contestants (131 full scores). Task Pairs had a great distribution of different scores, mostly thanks to multiple subtasks (9 full scores). Training was certainly the most difficult task on the competition. With only 3 full scores and not many partial scores, it was a great challenge to even the best contestants.

Since the tasks are no longer a secret, Host Scientific Committee has prepared for you a booklet with the descriptions of all nine tasks (for practice and official competition). It also contains detailed explanations of all the solutions. You are invited to download the electronic version from the official IOI2007 web site.

<http://ioi2007.hsin.hr/index.php?page=tasks>

These graphs show the scores that were achieved (in increasing order from left to right) for each task.



# IOI 2007 CONFERENCE

## Valentina Dagiene, originator of IOI conference

First IOI conference held during 19<sup>th</sup> Olympiad here in Croatia. The main goal of IOI conferences is to exchange experience from national competitions in order to improve the Olympiad. We would like to share with you a very pleasant conversation we had about that with the originator of IOI conferences, Ms. Valentina Dagiene.

- *What are IOI conference effects, what is its most important benefit?*

The most important thing is to listen to countries how they are doing, how they getting better, they present some very surprising solutions, which can be implemented in my country or I can encourage my students to do that in the same way.

- *From your point of view as an organizer, are you satisfied with IOI 2007 conference?*

If countries are satisfied, I am satisfied.

- *There was a lot of interest for conference; some people even skipped excursions in order to participate on conference.*

Yes, there was. During the second day number of people was less, but it's not intention to push people, they should chose if it is useful for them.

- *What do you think about presentations and which one do you find most interesting?*

Mr. P. Ribeiro's presentation from Portugal is very interesting ("Increasing the appeal of programming contests with tasks involving graphical user interfaces and computer graphics"). He was also a contestant in the Olympiad and has experience from first hand, now he is a PhD student. All presentations will be available on IOI 2007 Web site.

- *Do you support competitions on line?*

Yes, it's good to promote competition on line.

- *But not for Olympiad*

Not for Olympiad, just for practice before Olympiad.



- *What do you think about different situations in different countries in terms of possibility to invest in technology, preparing contestants for competitions?*

I talked with more countries, there are a lot of volunteers. You need some money to survive but you also should be satisfied with the job you do. Solution is to combine resources from ministry (government), sponsors and volunteers.

*Although Valentina and newsletter editorial board required that I don't ask personal questions, in this case,*

*I couldn't skip that.*

*With my only one published book in informatics and an only child, I felt so small and insignificant talking to a woman who has 5 children, published a lot of books, scientific articles, took a doctors degree...*

- *Valentina, how do you manage all of these things, could you send a short message to our young technical oriented students, especially for female students?*

*Valentina had a very short and simple answer: 'You shouldn't work just for money, you should like your job, you should love people.'*

*I agreed with Valentina that most important message from Olympiads is meeting so nice and clever people from over the world, to respect differences, to learn a lot from each other, to make friendships which we can keep in our memories without costs but with great pleasures in our hearts.*

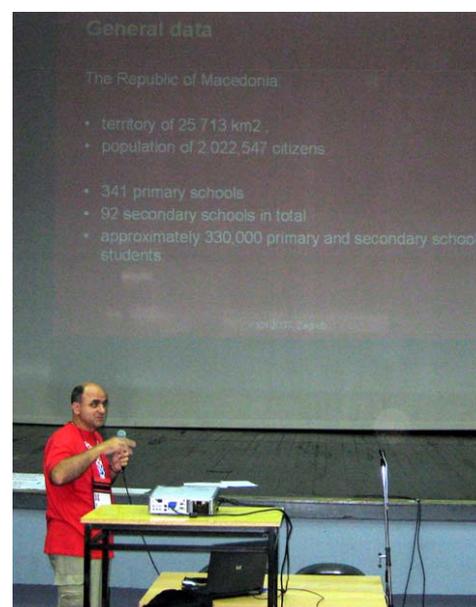
# IOI 2007 CONFERENCE PRESENTATIONS

IOI 2007 Conference was held on August 17 and 19 under the title *Olympiads in Informatics – Country Experiences and Developments*.

Presentations at IOI 2007 Conference were held during two days (at the same time as the competition) in the SD Stjepan Radić movie theatre.

The following works were presented:

- **R. O. Anido, R. M. Mendenico**  
Brazilian olympiad in informatics
- **P. Brođanac**  
Regular competitions in Croatia
- **G. Casadei, B. Fadini, M. G. De Vita**  
Italian olympiads in informatics
- **L. Choijovanchig, S. Uyanga., M. Dashnyam**  
The informatics olympiad in Mongolia
- **V. Dagiene, J. Skupiene**  
Contests in programming: quarter century Lithuanian experience
- **K. Diks, M. Kubica, K. Stencel**  
Polish olympiad in informatics - 14 years of experience
- **M. Forišek**  
Slovak IOI 2007 team selection and preparation
- **M. Jancesk, V. Pacovski**  
Olympiads in informatics: Macedonian experience, needs, challenges
- **G. Kemken, G. Cormack, I. Munro, T. Vasiga**  
New tasks types at the Canadian computing competition
- **V. M. Kiryukhin**  
The modern contents of the Russian national olympiads in informatics
- **R. Kolstad, D. Piele**  
USA Computing Olympiad (USACO)
- **K. Manev, St. Kapralov, E. Kelevedjiev**  
Programming contests for school students in Bulgaria
- **M. Mareš**  
Perspectives on grading systems
- **P. S. Pankov, T. R. Oruskulov**  
Tasks at Kyrgyzstani olympiads in informatics: experience and proposals
- **W. Pohl**  
Computer science contests in Germany
- **P. Ribeiro, P. Guerreiro**  
Increasing the appeal of programming contests with tasks involving graphical user interfaces and computer graphics
- **H. Wang, B. Yin, W. Li**  
Development and exploration of Chinese national olympiad in informatics (CNOI)



Proceedings / Collection of papers was prepared and published by prof. Valentina Dagiene, Ph.D. It will also be published on <http://ioi2007.hsin.hr>

## DELEGATION & DEPUTY LEADERS

*Their views*

*Argentina*

### **Rogelio Garcia Llano**

The tasks were very good. The results are not bad for our team. The people in organisation are doing a very hard and good job. Your country and people are very nice

*Macedonia*

### **Metodija Janceski**

This year, comparing to the last year we had the strongest team and we had extra education camps. Our students went to a lot of contests and preparations. I'm not completely satisfied with the results but only one student had already attempted this kind of competition, for the others it was their first time. I have attended 7 IOIs by now and I think this one is very well organised. Zagreb and Croatia did their best. I never felt better, the atmosphere and the communication between people are great.

*Australia*

### **Benjamin Burton**

I'm very happy how our team did. We never come with any expectations because you never know what will happen during the day. The students are doing fine, they have a lot of free time and an opportunity to interact with other teams, walk around Zagreb, we're having a wonderful time.

*Finland*

### **Heikki Hyyro**

The contest is different every year, so it's hard to have any specific expectations, just hoping that they do as well as they can. There was a little bit of disappointment yesterday because one of the students lost full 100 points because of a very, very small mistake and 100 points is a very big loss.

*Bulgaria*

### **Emil Kelevedjiev**

We are satisfied after the results of the 1st competition round, our expected level is fulfilled for this moment, our students are mostly satisfied, we'll see what will happen in the 2nd competition round. And we the organization, accommodation ... it's all very good.

*South Africa*

### **Donald Herbert Cook**

I think our students did as well as we expected, the questions were very good stated, the students enjoyed, didn't complain they were too difficult but they made some silly mistakes like everybody else does. They were satisfied how they did. The whole olympiad is doing better than fine. The students are satisfied with the amount of free time, they like going out, doing their own thing.

*Korea*

### **Jik Hyun Chang**

Actually my students did a lot of mistakes after the first competition, so the scores were not less than we expected. But we are expecting better results after the 2nd competition round. And the students are having a good time, just sometimes wish to have air-conditioning in the rooms.

*Iran*

### **Hamed Ahmadi Nejad**

The questions were more difficult than we expected but I think they did pretty well. One of the students got 240 and the others did OK, not great but OK. We still have a lot of hopes for the 2nd round. The students are doing fine, just complaining that it's too hot.

*Slovenia*

### **Jelko Urbančič**

I had some expectations, but we are still waiting for the 2nd competition round to see if they will be fulfilled, because we have no idea how the other successful teams will do. The students are a bit disappointed because they didn't expect the tasks to be that hard, further on they are less and less disappointed. We are just full of expectations for the 2nd round.

*Lana Novosel*

## TECHNICAL COMMITTEE FINAL REPORT

Siniša Pleše, TC President



So, we came to the second round. We faced the final exam - for contestants, as well as for technical crew. We were rather tensed, but we tried to be prepared as best as we could for every possible situation we could think of. When all contestants gathered in front of the main entrance to competition room, all systems were up and running, and all members of the team were on their positions.

OK, let's go! Entry procedure and control has been completed rather quickly and without any problems, and part of the credit for that goes to team guides. We asked them to remind their teams to competition rules regarding allowed and non-allowed stuff to bring to competition, so there were only few backpacks and mobile phones to store at the entrance, and it went smoothly and quickly. (Thanks guides, you're great!) As the competition was going on, it was rather interesting to take a look from time to time to evaluation system monitors, showing the state of the system. We could observe as solutions were submitted, compiled and evaluated, different solution statistics and parameters, all in real-time manners. Development of the competition was presented on one single place. Finally, the time was out and competition was over. All equipment worked perfectly, so we hadn't any technical problem. Well, except sore feet – we had more than six hours of constant walking around the competition room behind us. :-)

---

### Girls at IOI

If you remember, Newsletter 3 introduced you to two girls from Chile (**Constanza Contreras** and **Romina Huenchunao**) competing at the IOI 2007. Now we would like to mention other female competitors and introduce you to the 'princess' of the Irish team, **Katie O' Mahony**.

- **Emina Bukva** for Bosnia and Herzegovina
- **Radwa Metwali** for Egypt
- **Sepideh Mahabadi** for Iran
- **Vaiva Imbrasaite** for Lithuania
- **Anna Curell** for Spain
- **Taksapaun Kittiakrastien** for Thailand
- **Phitchaya Phothilimthana** for Thailand
- **Ye Wang** for USA

#### *Katie O' Mahony*

"It's great fun being the only girl on Irish team. All the problems at the contest were of pretty much the same level – contest was ok. I have been programming for two years now and I went to a training camp in June. I thought I was going to make it and here I am. It would be nice to come to the IOI next year. Here I hang around mostly with my team, but also with the English team."

There are also other reasons why Katie is really precious to her team – their deputy leader says that she is their leading cheerleader and main supporter without whom they would have never made it to IOI 2007 soccer finals ☺.



## Excursion to Hrvatsko Zagorje



*Krapina*



*Matija Gubec Monument*



*Vine cellar*

---

## VIP DINNER

The 'grown-up' part of participants at IOI 2007 got their share of partying last night. Everyone dressed up smart, prepared to have fun and off we went!

Dinner was held at a famous restaurant in the surroundings of Zagreb, situated on a hill overlooking greenery.

After taking their places, at tables decorated with candles, the music and the atmosphere made everyone even more cheerful and it was great to hear so many different conversations going on. Some danced and some even sang a song for us.

When the atmosphere got too hot inside, the party continued on the outside – we learned a very unusual dance and were quite thrilled with it.

As much as we were able to conclude from our guests' faces upon returning to the buses, they were very pleased with the evening.



## STUDENTS PARTY

Around 21 o'clock in the evening or maybe a bit earlier, contestants, their guides and others started to gather in Pauk. We could feel great release because the competition was behind us, so we had fun with food, drinks, music, dancing and singing. Karaoke machine was the attraction of the evening. Many of them have tested their „talents“ and tried, except themselves, to amuse everybody else.

*No pictures available!*

## Mini problems to your enjoyment only

All mini challenges published in daily newsletters (and some that were **not published** due to space restrictions) can be found here: <http://www.hsin.hr/~iurbiha/>

Send your comments and solutions to address [iurbiha@hsin.hr](mailto:iurbiha@hsin.hr). Please, make them short and understandable. Also, execution time of your solutions should be within reasonable limits.

### PROBLEM #5

Write a program that will find the smallest natural number  $n$  which multiplied by 19 and a digit  $d$  ( $1 \leq d \leq 9$ ) yields a number whose all digits in decimal numeral system are equal  $d$ . Write a program that will find  $k$  smallest such numbers.

Igor Urbiha

Weather Forecast – Zagreb 45 49N 16 02E				
		min.	max.	wind
Tuesday 21.08.2007		16 °C 61 °F	26 °C 79 °F	
Wednesday 22.08.2007		16 °C 61 °F	27 °C 81 °F	

#### Basic English

Gold – zlato  
Silver – srebro  
Bronze – bronca  
Medal – odličje  
The best of  
the best – prvak

#### Croatian Dictionary

Award – nagrada  
Celebration – slavlje  
Farewell – oproštaj  
Gift – dar  
Hug – zagrljaj  
Teardrops – suze

Croatian favourite animal

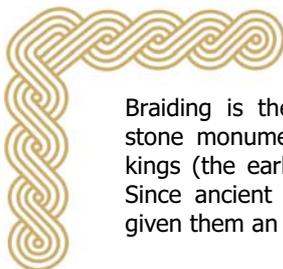


is ...marten (hrv. KUNA)

#### Filip Pavetić, Croatian 2<sup>nd</sup> team contestant



- *Are you excited, you will be in tomorrow's newsletter?*  
Yes, I am (laughs).
- *Do you like being at the IOI in Croatia?*  
Yes, I do, although I didn't have to go far from home ☺, but it's very nice. I myself haven't yet been to some parts of the Croatia.
- *How did the contest go for you?*  
It went well. I had some problems the first day but the second day went better, I think, I still don't know the result, everyone is very mysterious about it. Hopefully, we're going to celebrate after the contest.
- *Some impressions?*  
I got to know parts of Zagreb I didn't know. I like this city more and more.



#### CROATIAN BRAIDING

Braiding is the most frequent ornament of the Early Croatian stone monuments from the period of the Croatian princes and kings (the early Middle ages) and is much loved by the Croats. Since ancient times it has adorned their ceremonial robes and given them an elevated tone.

#### Newsletter No.5

Editors  
Vlasta Šeparović  
Dinka Matić  
Sanja Poljarević  
Aron Boht