



# NEWSLETTER

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



No. 2

Friday, August 17, 2007

## 19<sup>th</sup> IOI HAS OFFICIALLY STARTED!



Today at 11 o'clock, at the congress hall of the Zagreb Fair the opening ceremony of the 19<sup>th</sup> International Olympiad in Informatics was held. Tomislav Vujec, Ph.D., president of the general assembly, and the journalist of our newsletter, Dinka Matić, hosted it.

All of the contestants, delegation leaders, and deputies attended the ceremony, as well as many distinguished guests and representatives of the media.

A famous Croatian singer, Jacques Houdek started the ceremony with an *a capella* performance of the Croatian national anthem.

A welcoming speech from the executive director of the IOI 2007, Mr. Ivo Šeparović followed.

A folklore ensemble "Ivan Goran Kovačić" continued the program. After their performance Mr Zide Du from China, the president of the International Olympiad in Informatics gave his speech.

Mr Davor Mladina from Končar, the general sponsor of the IOI, Mr Vedran Perišić from T-HT, our main sponsor, and prof. dr. Ante Markotić from the Croatian Community of Technological culture also talked to the audience.

Ms Ljiljana Kuhta – Jeličić spoke on behalf of the City of Zagreb and the mayor of Zagreb, Mr Milan Bandić, and welcomed all the guests to our beautiful city.

Mr Slobodan Uzelac came on behalf of the President of the Republic of Croatia, the honorary patron of the IOI, and the Ministry of Science, education and Sports of the Republic of Croatia.

With a warm welcome to all of the guests, and after stressing out the importance of informatics for the young generation, Mr Uzelac officially opened the 19<sup>th</sup> International Olympiad in Informatics.

The most exciting part of the ceremony was the introduction of all the delegations, followed by a round of applause for each team. The most interesting introductions were those of Croatian team, who threw their hats in the air, the Tajikistan team, who wore their folklore hats, and South Africa, who surprised us all with their horns!

A welcoming cocktail party (with fruit champagne ☺) followed.

Good luck to everyone at the competition tomorrow!

## Interview with IOI 2006 hosts – Mexican delegation



During our midnight stroll through the dormitory complex, in search of some interesting story we can present you, our readers, the Newsletter reporter team came across a part of the Mexican delegation. They were in a visibly good mood and enjoying the warm Zagreb summer evening.

We first asked **Mr. Francisco Zaragoza**, who was a part of the IOI 2006 scientific committee last year in Merida, Mexico, on how he felt now that he doesn't have to be a part of the organizing team. Relieved, was the answer we got. Mr. Zaragoza enjoys just being in Croatia this year.

- What was the influence of the last year's olympiad on young people in Mexico and their interest in informatics?

*Last year we had two national television channels coming to see how the olympiad went and it was show on news many times. I remember that a day after I came to work my students asked me: 'Hey, prof, what were you doing on TV last night?' And I said, 'Well, I was a bit busy' (laughs). The effect was that this time, I think, we had double as many students participating at the olympiad, which was very good, and in our national olympiad, I was told, we had three or four television channels coming to see what was happening – on*

*a national olympiad, not international. This is great because then more kids get to know about the informatics olympiad and they might be interested. One day they might choose to work as computer scientists or whatever, but the idea is to participate and do something nice with their youth.*

- What do you think, how will your team do this year?

*I think they will do their job and I think they are happy right now, they must be, they have just spent three days in Venice. They didn't learn any Croatian yet though but they have the time (laughs). I believe they will do their best.*

- Do you maybe have a message for the Croatian Scientific Committee and?

*Well, for the committee, I know it's a hard job, I was there (smiles). I am sure they will do a great job, much better than the one we did. And to the contestants I would say, well, I have never participated in an olympiad but I would like to tell them not to be stressed, in the end they will all get a prize and a prize will be to get to know a very nice country and meet a lot of friends.*

We also talked a little with **Luis Vargas Azcona**, the deputy leader of Mexican team, who was a still a contestant last year and he told us he thinks that the olympiad is a wonderful experience which is why he supports it.

**Mr. Jorge Ibanez** told us that he finds the informatics to be the future, in all fields of work – economy, national security.

Mr. Zaragoza also told us a secret of his speaking some Croatian – his wife Gabrijela comes from Croatia. By every word we hear from our interviewees, the world seems more and more 'networked' ☺

Basic English	Croatian Dictionary
Competition – natjecanje	Cheers! – Uzdravlje!
Love – ljubav	Croatia – Hrvatska
What's the time?	What's your name?
Koliko je sati?	Kako se zoveš?
Keyboard – tipkovnica	Apple – jabuka
Mouse – miš	Cat – mačka
Water – voda	Juice – sok
Food – hrana	Excursion – izlet



## INFO DESK

Wow! The Olympiad has actually begun and everyone is here!

During the long months of preparations we were curious at what the first day at the Info Desk would look like. Our registration team started the day very excited - we didn't have to move from our Info Desk room and the world would still come to us, but, of course, we felt we had to fulfil the expectations.

Once the people from the neighbouring and most distant countries started to arrive, things got easier.

You had a lot of questions for us, from where to find wireless Internet connection or where to get a picture taken to requesting some shopping advice as well as what is the best way to spend a day (yesterday it was a national holiday called Velika Gospa).

We were glad that we managed to make a friendly contact with you and that we were able to hear some bits and pieces of the part of the world you came from. We have seen the faces we felt are very familiar to us or maybe it was because we talked as if we knew each other for years.

The nicest thing to us was to see how people saw friends they made at former olympiads and how happy they were to be together again.



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## PRACTICE SESSION





# EVERYONE



Canadians had a very enjoyable journey, as we heard from Konstantin, although their flight to Frankfurt was much better than the one to Zagreb. He said that Zagreb is not similar to Canada at all, but it's interesting – something new to see. He expects nothing less than gold medals for everyone in the Canadian team!



*The first guests are coming! Welcome to Croatia!*



*Our guides and folklore band the guests at*



*Some of you were confused by the presents. ☺  
Do I eat this or what?*



*Nice to meet you!*



*Everyone wanted to take a photo with our dancers, including our president, Zide Du.*



*After the long journey most of our guests wanted to rest for a while in their rooms.*



**IS HERE!**



*patiently waiting for the airport.*



*Handing out ID cards. Is this me on the photo?!*



We interrupted Taksapaun, nicknamed Now, in a handball game with her team members. Now comes from Thailand. They had a long flight, but managed to get some sleep on the plane. She likes Zagreb so far, and she already managed to see some of it. She will give her best at the competition.



*First attempts to communicate. You will be spending a lot of time with your guides this week.*



The flight from New Zealand was pretty tiring and really long, but the journey from Hong Kong to Frankfurt was amazing, as they went over the Himalayas and Russia.

Anton was surprised by the customs at the airport – they didn't ask them a thing.

This is his first time at the IOI, so he doesn't know what to expect, but thinks it will be really hard.

The good side of it all is meeting new people.



**President of International Olympiad in Informatics**  
**Mr. Zide Du**

**Speech on Opening Ceremony**



Distinguished guests, leaders, contestants, ladies and gentlemen,

I am so happy for I meet you all again. I warmly welcome you: old friends and new friends. The IOI is like a fair at which we can share our experience, achievements, and share our stories.

Now, I'd like to tell you a story. In last March we had International Committee meeting here, we had a talk with Mr. Stjepan Mesić, the President of the Republic of Croatia in the office of the president. But, I will neither tell you how happy the President is for our organizing the IOI in Croatia, nor tell you what he said about importance of IT education to young generation. Instead, what I'd like to tell you is I visited a high school in Zagreb, named 5th Gymnasium, I never saw a high school like this. You cannot image that in this school, there are only 400 seats for 800 students, 20 desks for more than 60 teachers. Obviously, they don't have enough room for study and teaching, the teachers and students have only half day in school, and another half day in home. What I never thought is all the students participate in various

Olympiads including the IOI. This school is the host school of IOI 2007 and the most successful high school in informatics' competitions in the year 2006 in Croatia. The head master of the school told me that one hundred percent students can enrol universities. This is one of the best schools in the world. I ever visited hundreds schools, but no one is like this, I was shocked and I learnt a lot. I told this story several times in China. If you have time, I suggest you pay a visit to it after the IOI. Some students from this school are our guides serving IOI 2007.

We came to this small but beautiful country. Croatia has very fascinating and long seashores and it has a long history and brilliant culture, if you walk on the street of Zagreb, you can find many museums and galleries. You may not know that Croatian soldiers invented the tie in almost 400 years ago. Today, the Croatian people are creating miracles: trying to make IOI 2007 be an ever best one!

Indeed, the IOI is not a fair but a big scientific event organized carefully by many people according to the strict rules. As you see that we have reformed the structure of International Committee, the General Assembly has more power and rights now than before. You will see that we are going to restructure the IOI Scientific Committee which should have higher efficiency and make more achievements.

Since the IOI is a world wide activity and an organization recognized by international societies, it is also quite important for this organization to recognize the people who make extraordinary contributions for this community. We have given special awards to some people, but that is not enough. The participants of the IOI have strong demand to be acknowledged by this organization. So, we have to do more. On the other hand, we have preliminary requirements to every participant team which has to be qualified. In this way, we will not only improve the quality of competition, but also, even more importantly, we have to push forward the national Olympiads of every participating country or region.

The annual IOI competition is not a final terminus. Through the competition, we are able to strengthen the impact to secondary school education all of the world, and also to the universities where the young students will go for.

In 2009, the IOI will have age of 20 years. Let's start to prepare to celebrate this anniversary. We are not only making the history, but also we have to keep the history.

Finally, I'd like to express my great thanks to Mr. Ivo Šeparović and his colleagues, it is them who made this event happen fluently.

I wish you have a nice stay here for a week.

Thanks.

Zide Du



## OPENING CEREMONY



*Tomislav & Dinka*

*Folklore group I. G. Kovačić*



### ***Chairman of IOI 2007 Mr. Ivo Šeparović***

#### **Welcoming Speech**

Dear contestants, team leaders and distinguished guests,  
Dear IOI friends,

I would like to welcome you to the capital of our beautiful homeland Croatia on behalf of the main organizer of the 19th IOI, the Croatian Informatics Clubs Association (CICA).

I have had the honour to be the Croatian team leader every year since 1993, when we participated at the IOI for the first time. I have also been a member of the International Committee since 2003. I am very proud to say that over the last 14 years I have watched our students get better and better. Due to their success, Croatia has become well known in the world of informatics. Encouraged by the success of our teams, we have also had the opportunity to organize national competitions in a more efficient way and to prepare our students with more attention to fundamental knowledge of informatics, especially in the area of Computer Science. In addition, through all these years we have been successfully participating at the regional competition - the Central European Olympiad in Informatics, as one of its founders, and we hosted it twice – in Zadar 1998 and Vrsar 2006.

It is with great respect and gratitude that I remember Mr. Lionel Hartman who gave me the idea to organize the IOI in Croatia already in Cape Town in 1997. Since then, it has been 10 years of constant "battle" for bringing the International Olympiad in Informatics to Croatia. And finally our dream became reality; we all are – at the Olympiad in Zagreb. I am very happy and my heart is filled with pride.

Finally I would like to thank for support our principle honorary patron, the President of the Republic of Croatia, Mr. Stjepan Mesić, the Ministry of Science, Education and Sports, the City of Zagreb, Croatian Community of Technological Culture, and our General sponsor, KONČAR.

I wish you all a pleasant stay in Croatia, and above all, I wish You the best results to all contestants.



## Mini problems

to your enjoyment only

A selection of programming problems will be presented here for anybody wishing to make a try at them. (Some knowledge of mathematics is desirable.) If you wish you can 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 #2

Write a program that solves variations of the following Alcuin's problems (taken from <http://logica.rug.ac.be/albrecht/alcuin.pdf>):

#### Alcuin's Problem #12

A man died and left as an inheritance to his three sons, among other things, 30 glass flasks, of which 10 were full of oil (a); another 10 were half full (b), while another 10 were empty (c). Divide the oil and flasks so that an equal share of the commodities should equally come down to the three sons, both of oil and glass.

Write a program that will find all solutions to a generalized Alcuin's problem #12:

input: a b c (Unknowns a, b, c are denoted in the problem.)

example of output (input is the same as in original problem ):

There are 3 solutions:

#1: 0 10 0

#2: 5 0 5

#3: 5 0 5

(two more solutions omitted)

where the first number in a line of output denotes the number of full flasks a son gets, the second number denotes the number of half full flasks he gets and the third number denotes the number of empty flasks he gets.

Another generalization to consider is to set number of sons as an input variable.

Yesterday's problem was successfully solved by **Yong Woon Cho, Korea** & **Pavels Cupikovs!**

Igor Urbha

Today's Schedule	
Leaders	Contestants
8:30 – 9:30 CLARIFICATION REQUESTS SD S. Radić	8:30 – 13:30 1 <sup>st</sup> COMPETITION ROUND Zagreb Fair
10:00 – 13:30 IOI 2007 CONFERENCE SD S. Radić	16:00 – 19:00 Sports&Recreation Faculty of Kinesiology
20:00 – 21:00 3 <sup>rd</sup> GA MEETING SD S. Radić	<b>Guests</b> 6:30 – 18:00 EXCURSION to Adriatic Coast

Weather Forecast – Zagreb 45 49N 16 02E				
		min.	max.	wind
Friday 17.08.2007		18 °C 64 °F	28 °C 82 °F	
Saturday 18.08.2007		16 °C 61 °F	25 °C 77 °F	

### Cannons in the centre of Zagreb?!



King Bela the IV gave a Golden bull to Zagreb in the year 1242. and thereby made it a royal free town after Zagreb offered him a refuge from the Tartar attack. According to the legend, at the same time he left Zagreb a cannon but under the condition this cannon is fired every day so it wouldn't rust. This cannon, called 'grički top' is fired each day ever since the year 1877 and it marks midday. So don't be scared if you find yourself somewhere Downtown and hear a cannon roar – it is not Tartars striking back, it is a unique (and useful) feature of Zagreb!

### Newsletter No.2

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