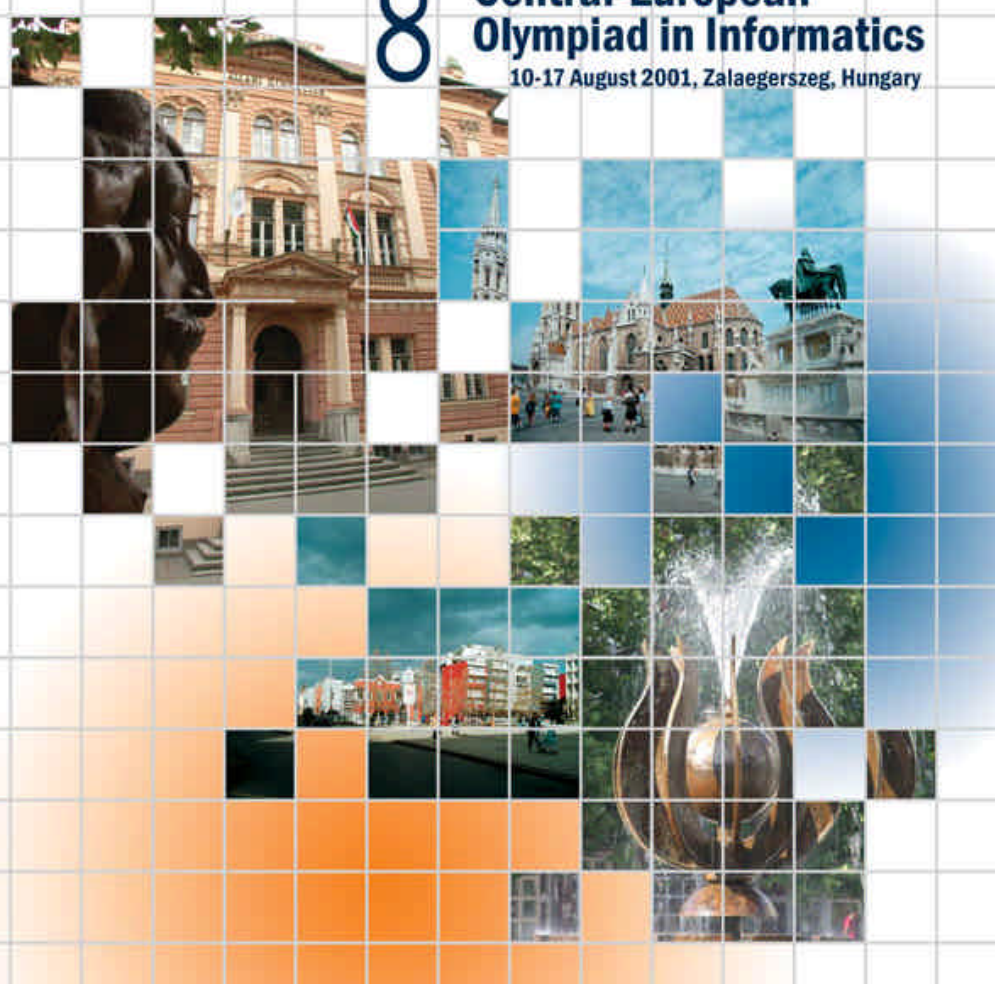CEOI 2001

8th Central-European
Olympiad in Informatics

10-17 August 2001, Zalaegerszeg, Hungary

Zrínyi Miklós Secondary School

Welcome to Hungary in

Contents

HUNGARY

Welcoming Address of the Central European Olympiad in Informatics,

by Dr József Pálinkás, Minister of Education of the Republic of Hungary

Dear Students, Teachers, Ladies and Gentlemen,

Let me welcome all the participants of the Central European Student Olympiad in Informatics in Zalaegerszeg. I am very pleased that Hungary can be the host of this important event in 2001 when competing students from twelve Central European countries will measure their skills in informatics. I am sure that the choice of the venue was a good one and you will keep this Olympiad in your memory for a long time.

The idea of this event come from the realisation that future societies will be based on knowledge and that information will play a crucial role in it. On the one hand, I think this motivates people to become familiar with information technology since it will be of great importance in one's success in life. On the other hand, it is also a great challenge for all of us since we have to keep up with the increasing speed of development in this field of science, which you, the participants of this competition must be completely aware of. Your task is made even more difficult by the fact that you have to compete not only with each other but with the steady growth of information as well. Since the participation itself has required hard work and careful preparation, I consider your presence here a success itself, regardless of the scores you will achieve here.

Informatics however, is not only factual knowledge but a common language that connects people, countries as well as continents. Thus the Student Olympiad will only serve its purpose well if – beside serious and fair competition – it creates opportunities for the participants to get acquainted and make friends with each other, too.

I hope –and I wish– you will have an exciting Olympiad. I wish you success and I hope that you will gain new personal and professional experiences while enjoying the hospitality of our country.

Dr József Pálinkás

Minister of Education of the Republic of Hungary

Letter of Welcome
by László Varga

Dear Contestants, Ladies and Gentlemen,

On behalf of the public of Zala county I would like to welcome with respect and honour all the participants of the Central European Olympiad in Informatics.

Events like this turn public attention –even though for a shorter period of time– to the importance of certain special fields of interest. Information Science is a matter of primary importance especially in our country, which is preparing for its accession to the European Union. I think that increasing the efficiency of Information Science education and providing for its personal and technical conditions play a prominent part in the development of our educational system nowadays. The experiences of the international competition to be held here may help us to cope with the difficult task of this development even more successfully in the years to come. I hope that Zala county and Zrínyi Miklós Grammar School will prove good hosts of this significant competition by ensuring excellent circumstances.

I would like to wish all the contestants as great success as possible in noble competition. I hope you will have a good time in our county and when returning home, you will give favourable news of the hospitality of Zala county, the venue for the Olympiad.

László Varga, Chairman of the General Assembly of Zala County

Letter of Welcome
by Dr Endre Gyimesi

Dear Contestants, Ladies and Gentlemen,

I would like to welcome to our town the participants of the Central European Olympiad in Informatics, their teachers and those interested.

The local government of the city of Zalaegerszeg is proud to have the opportunity to host this event of great importance for the second time in Hungary. We consider this an honour to our town, the management of local education and the local schools as well. It is a great honour to Zrínyi Miklós Grammar School in particular, which is esteemed as one of the oldest and admittedly the best-established school in our town. This institution belongs to the vanguard of secondary schools in Hungary and a great number of outstanding students and illustrious personalities have been educated within its walls.

I wish all contestants a successful competition and I hope you will reach your envisaged targets. However, as August is the time for summer holidays, I also hope you will manage to spend your free time looking around our town, hiking and walking in the surrounding hills, and meeting friendly and hospitable people living in Zala county.

I would like to wish efficient work to Neumann János Computer Science Society and Zrínyi Miklós Grammar School, the organizers of the Olympiad.

Dr Endre Gyimesi, Mayor of Zalaegerszeg

Olympiads in Hungary

Hungary has a long tradition of organising scientific contests for secondary school students, in most school subjects including mathematics, physics, chemistry, biology, history, foreign languages, or most recently, in informatics. Our students are active and successful participants of international student competitions from their very beginnings.

Most recently we mentioned above, hence if we compare the world history of computer technology to the history of our national olympiad in informatics, the so called "Tihamér Nemes" National Contest, you will find it has a rather long history. Our first national informatics contest was in 1985. Today, the contest is organised in three categories for primary and secondary school students in the age groups 10—14, 15—16 and 17—19, and in three rounds (firstly, at school, then on the regional, and finally on the national level). Annually, the total number of participants is ca 5000 in the first round, and ca 180 in the final.

Hungary hosted the 2nd Central-European Olympiad in Informatics (1995, Szeged, 11 countries) and the 8th International Olympiad in Informatics (1996, Veszprém, 60 countries).

The Host City of CEOI 2001
Zalaegerszeg

Zalaegerszeg developed in the south-western part of Hungary, on the edge of the hilly Zala County, on ridges rising above the former marshy valley of the River Zala at an average height of 156 m above sea level. Owing to the terrain configurations, it had been a small L-shaped town until the middle of the 20th century. Its highest point was in the vicinity of the parish-church. One main street was running towards south, the other towards west, and one side of the triangular main square was separated from the marshy fields by the church-yard. During the 2nd half of the 19th century new streets were constructed with bundle-wood placed in the mud every year so that pedestrians and carriages were able to move.

The low-lying parts were embanked and the brook running through the town was controlled with its bed covered up. The southern and western districts of the expanding city reach the gentle slopes of North-Göcsej's hilly landscape. Even the residential areas show more variety and are more suitable for people living here reaching the hillside full of vineyards surrounding the city.

The name of the city comes partly from the River Zala, which is quite a small river with a length of 138 km and with an average flow rate of 6 m^3/min. Although the river formed the boundary of the city for centuries, now it is running through the inner ity as a result of annexations and constructions.

The second part in the name of city originates from the alder which could be found everywhere on the marshy fields surrounding the place. 'Szeg' means corner or recess obviously referring to the former geographical situation of the city.

The county capital had 63130 inhabitants in 1995. The majority of the older generation was not born here, since there were some 13500 people living here half a century ago. On today's territory of the city there were only 20000 people living. The number of inhabitants increased between the 50-s and 70-s, due to immigration.

Most people speak Hungarian as their native language. Only the gipsys, most of them living in the suburbs of Csácsbozsok and Pózva mainly in financially sound circumstances, have an own minority administration.

The majority of people work in services or industrial plants. The number of people making a living in farming is negligible, whereas the number of civil service workers is high, due to the county capital status.

The place of the competition will be the Zrínyi Miklós secondary school, in the center of the town.

The competition itself will be in the secondary school, the accomodation will be in the college buildings situated 400 m from the school.

The Program of CEOI 2001

	Contestants	**Team leaders**
10 August	Arrival. Sightseeing. Free time. Welcome Party.	Arrival. Sightseeing. Free time. Meeting of the Council of Team leaders.
11 August	Opening ceremony. Sightseeing. Games	Opening ceremony. Sightseeing. Selection of tasks for the 1st Competition Day
12 August	Competition: 1st Session Cultural activities	Evaluation of the solutions. Decision to be made by team leaders
13 August	A day-trip to Lake Balaton	A day-trip to Lake Balaton. Recreation. Selection of tasks for the 2nd Competition Day
14 August	Competition: 2nd Session Cultural activities	Evaluation of the solutions. Decision to be made by team leaders
15 August	A half-day trip. Free time	A half-day trip. Decision on medallists. Meeting for the OC
16 August	A half-day trip. Closing ceremony. Farewell Party	A half-day trip. Closing ceremony. Farewell Party
17 August	Departure	Departure

The Host Team of CEOI 2001

Who's who?

Who / as …	At … (*employment*)	e-mail
Aranyos, Gabriella *secretariat*	**J**ohn von Neumann Computer Society	Aranyos@njszt.hu
Hanák, Péter *presidency*	**M**inistry of Education	Hanak@inf.bme.hu
Horváth, Attila *presidency*	**Z**rínyi Miklós Secondary School	Horvatha@gamow.zmgzeg.sulinet.hu
Horváth, Gyula *scientific committee*	**U**niversity of Szeged	Horvath@inf.u-szeged.hu
Szlávi, Péter *editorial board*	**E**ötvös Loránd University	Szlavi@ludens.elte.hu
Zsakó, László *presidency*	**E**ötvös Loránd University	Zsako@ludens.elte.hu

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On-line information

is available on the World Wide Web:

http:	http://ceoi.inf.elte.hu/, or
http:	http://www.win.tue.nl/win/ioi/ (the IOI Secretariat)
Mailing list:	There is also a CEOI Mailing List. You may subscribe to it by sending an electronic mail to: ceoi-request@inf.u-szeged.hu The body of the message should consist of one line containing either the word HELP, or the word SUBSCRIBE. In response you will receive an automatic help message, or a confirmation of your subscription.

The Main Supporters of CEOI 2001

Ministry of Education

http://www.sulinet.hu

Dr Pálinkás József, Minister

Zalaegerszeg County Council

http://www.sienet.hu/aznyito.html

Varga László, President

Zalaegerszeg City Council

http://www.zalaegerszeg.hu

Dr Gyimesi Endre, Mayor

The Other Supporters

University of Szeged

http://inf.u-szeged.hu

Dr Mezosi Gábor, Dean

Eötvös Loránd University

http://www.elte.hu

Dr Benczúr András, Dean

Zalaegerszeg Institute of BGF

http://orso.dfmk.hu/~PSZF

Dr Tóth József, Director

The Organiser

John von Neumann Computer Society

http://njszt.hu

As a significant professional body and learned society in the Hungarian IT community, the John von Neumann Computer Society (NJSZT) is dedicated to preserving values that can be included in today's knowledge-based society as well as to setting new directions that meet the requirements of the age and to actively forming the IS world of the future.

Mission statement
(Core purpose of the society)

The Society is an independent forum committed to promote the following both in Hungary and Hungarian-speaking communities abroad:

- the study and practice of Computing and the dissemination of the results;
- maintaining the prestige of the profession as well as the highest standards and defining the standards of professional conduct;
- representing the profession and others engaged in IT on issues of importance;
- providing opportunities for its members for participating in the international community of IT specialists, disseminating information important to the advancement of knowledge in IS, promoting computer literacy and IT education.

Scope of activities

The Society is a non for profit organisation, which provides services and promotes activities including:

- providing opportunities for its members to participate in the work of the IT community; trying to integrate students and young professionals in the work of the IT community; providing opportunities for networking within national and international organisations,
- assessing and preparing research, development, educational and training projects;
- giving professional advice, advising the Hungarian government, its agencies as well as business and social organisations on IT-related matters;
- preparing conceptions, studies and expert opinion;
- organising lectures, conferences, seminars, exhibitions and courses;
- organising study-tours both in Hungary and abroad;
- by announcing competitions and founding awards it acknowledges excellence;
- representing Hungary in national and international scientific organisations,
- spreading computer literacy, coordinating ECDL examinations.

*For more information see the homepage of the Society **www.njszt.hu**.*

The Host

Zrínyi Miklós Secondary School

Zrínyi Miklós Secondary Grammar school looks back on 106 years of history. The beginnings date back to 1895, when teaching started with two classes. The building which houses the school was finished in 1897. Since its opening, the school has become an important intellectual workshop of Zalaegerszeg.

A special feature about the school is the juxtaposition of what is old and new. Traditions are honoured and held in esteem, but at the same time Zrínyi is a very innovative institution. For the past decades the framework of education has greatly changed. The traditional 8-form-school, which was replaced by 4 forms in 1950, was restarted in 1997. The school offers specialization in languages, Maths, Science and Art subjects, and provides all students courses in computing. The school is competitive. One of the main goals is to prepare students for higher education. More than 90% of students pass the entrance examinations and get admission to different universities and colleges.

Although academic excellence is at the centre, life at Zrínyi is not all work and no play. All-around excellence is also cared about. There is a range of activities outside the classroom from rock bands to school choir and different sports training. It is also important that students enjoy their years at school.

Thanks to its outstanding results, the school has made a reputation in the region and its name has become known all over Hungary as well. Its high standard of education has been acknowledged with several awards given by both the General Assembly of Zalaegerszeg and the General Assembly of Zala County.

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The Main Sponsors of CEOI 2001

MicroSoft Hungary

http://www.microsoft.com

Microsoft's vision is to empower people through great software - any time, any place and on any device. As the worldwide leader in software for personal and business computing, Microsoft strives to produce innovative products and services that meet our customers' evolving needs. At the same time, we understand that long-term success is about more than just making great products.

In an industry that moves at lightning speed, innovation is critical to our competitiveness. Microsoft's long-term approach to research & development, combined with our constant efforts to anticipate customer needs, improve quality and reduce costs will enable us to deliver the best products and technologies.

As a leading provider of development tools and methods, we find it important to help young and talented students learning new and interesting programming techniques. We also make it possible for them to see the „.NET future" as we see it.

OTP Bank Hungary

http://www.otpbank.hu

The Bank celebrated it's 50th anniversary in 1999. The National Savings Bank (OTP Bank) was established in 1949 as a nation-wide, state-owned, banking entity providing retail deposits and loans. In the following years, its activities and the scope of its authority gradually widened. Initially, it was authorised to enter into real estate transactions. Later, its role was extended to provide domestic foreign currency accounts and foreign exchange services, with subsequent diversification into providing banking services for Hungarian municipalities. Since 1989, the bank has operated as a multi-functional commercial bank. In addition to continuing with its previous retail and municipal activities, the bank has been authorised to solicit corporate loan accounts and deposits, and to provide commercial loans and banking services for correspondent banking and export-import transactions.

In 1990, the National Savings Bank was transformed into a public company limited by shares with a share capital of HUF 23bn and its name was changed to the National Savings and Commercial Bank. Subsequently, non-banking activities were separated from the bank, along with their supporting organisational units. The State lottery was reorganised into a separate wholly state-owned company and OTP Real Estate was established as a wholly owned subsidiary of the bank. The bank has subsequently developed as a universal financial and related services group. Main members of the OTP Group include OTP-Garancia Insurance Ltd., OTP Real Estate Ltd., OTP Faktoring Ltd., OTP Building Society Ltd., OTP Securities Ltd., HIF Ltd., Merkantil Bank Ltd., Merkantil Car Ltd., as well as OTP Fund Management Ltd., and OTP Fund Ltd.

Important Information

@ ... on travelling *from Budapest (Bp) to Zalaegerszeg (Ze)*

	Trains (www.elvira.hu)		Coaches (www.zalavolan.hu)	
Departure from Bp	Railway Station (pu)	Arrival in Ze	Departure from Bp (Erzsébet tér)	Arrival in Ze
7.20	Déli pu	10.45	8.00	11.50
9.05	Déli pu	13.02	14.00	17.25
14.05	Keleti pu	18.32	15.40	19.45
14.20	Déli pu	17.45	17.00	20.25
17.20	Déli pu	20.44	18.30	22.15
Departure from Ze	Arrival in Bp	Railway Station (pu)	Departure from Ze	Arrival in Bp
8.55	12.58	Déli pu	8.30	12.10
12.27	16.03	Déli pu	15.30	19.50
14.16	18.13	Déli pu		
18.46	22.23	Déli pu		

Remember:

↝ If you want to travel fastest from one railway station to another, take the metro. Déli pályaudvar (pu) i.e. Déli railway station and Keleti pu are connected by the red metro line, with Déli pu at one terminus. Nyugati pu is situated on the blue line. You can change from the blue line to the red one at Deák tér. At Déli pu there is an on-line, English-speaking touchscreen computer with maps that will help you orientate. Of course, you can ask for help at the „Információ" at the railway stations. (http://map.index.hu) (⇨ See map on page 15.)
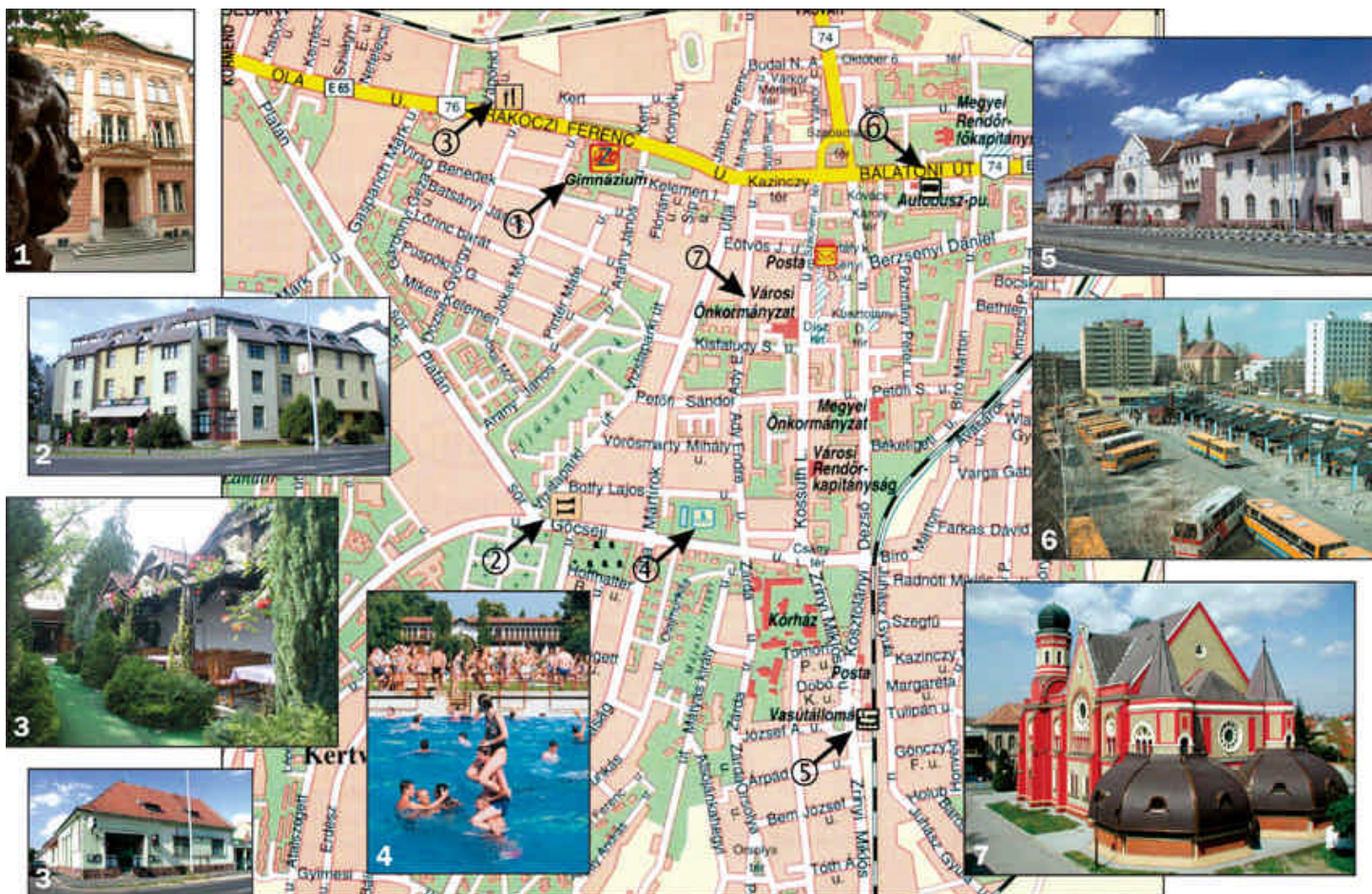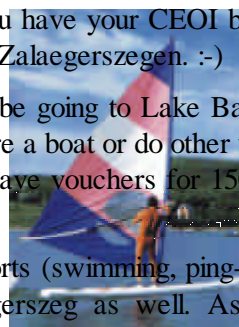
↝ You have to buy tickets in advance if you want to use public transport in Budapest. They cost 100 Ft each and can be bought at the railway stations. Don't forget to punch them at the metro stations or on the bus.

↝ If I were you, I wouldn't take a taxi from the airport to the city centre. Taxi drivers with a car without a company label may overcharge foreigners. :-(You'd better take the Minibus, which costs 1200 Ft per person.
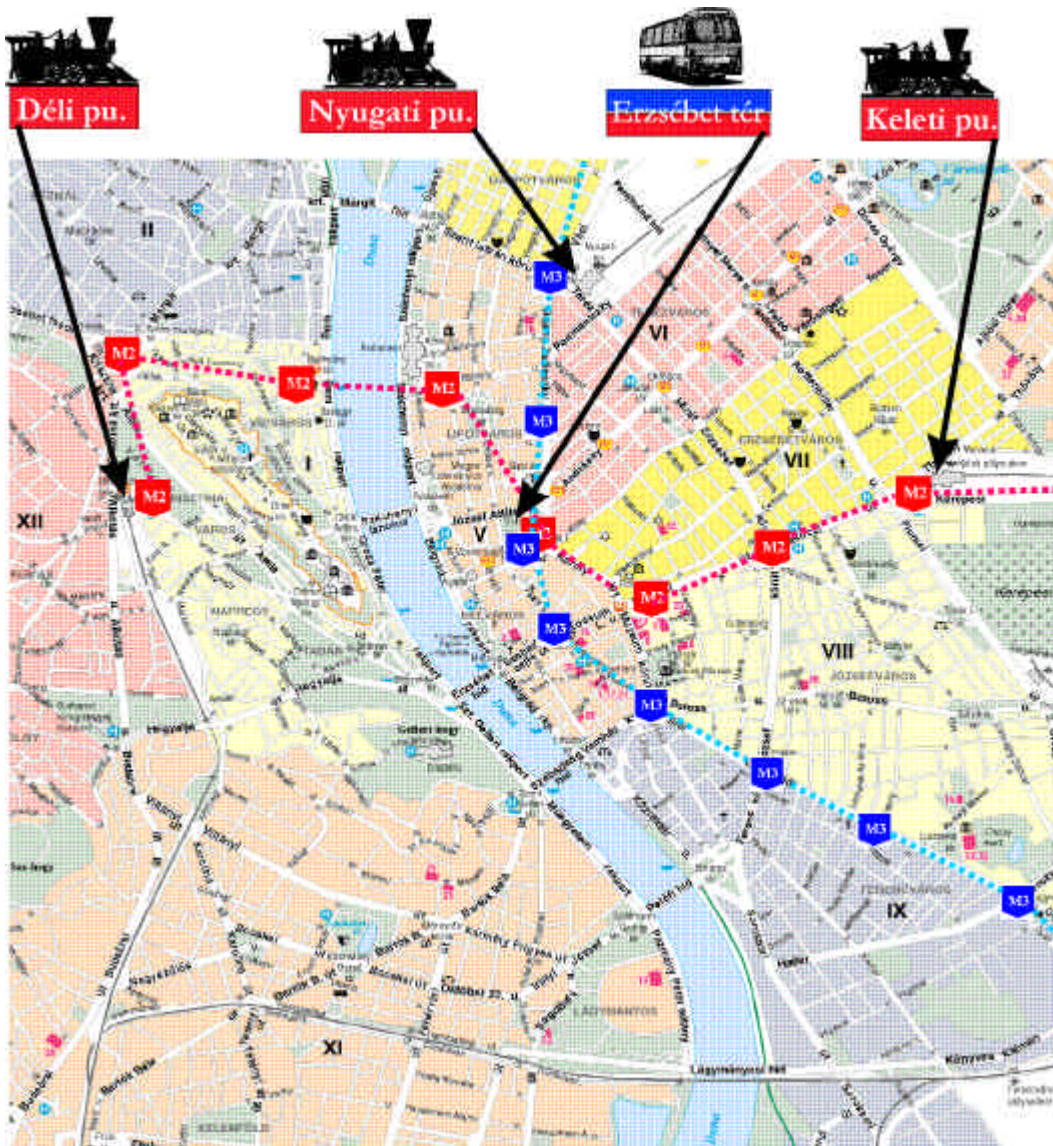
@ ... other information:

↳ You' ll be able to travel around the city free of charge if you have your CEOI badge. On the other hand, everything is within a walking distance in Zalaegerszegen. :-)

↳ You' d better bring your swimming costume because we' ll be going to Lake Balaton, the biggest lake in Central Europe. There you' ll be able to hire a boat or do other water sports. If you feel like eating or drinking something, you' ll have vouchers for 1500 Ft, which you' ll get at the registration.

↳ Of course, when you have free time, you' ll be able to do sports (swimming, ping-pong, tennis, football, body building, horse riding etc) in Zalaegerszeg as well. Ask for information and equipment at the school.

↳ Please find below the most important venues of CEOI:

① Gimnázium i.e. Zrínyi Secondary School (Rákóczi u. 30.), competition venue,   Hall of residence (Vizslaparki út 48.),   Halász-csárda, main meals,   Swimming pool,   Vasutállomás i.e. Railway station,   Autóbusz pu i.e. Coach station,   Synagogue, a cultural centre of the city

Parallel to the CEOI, a Programming Competition will be announced on the Internet, as well. You'll find the tasks on the CEOI website (http://ceoi.inf.elte.hu) from 8.00 August 12, 2001 and 8.00 August 14, 2001. The deadline for sending in your solutions is 13.00 August 12, 2001 (CET) and 13.00 August 14, 2001. You'll find the address to send the solutions to on the website.

Map of Budapest (Central area)

Red metro line (Metró2)

Blue metro line (Metró3)

History of CEOI, by Venues

1994

Cluj, Romania

Participants:
Croatia, Czech Republic, Hungary, Moldova, Poland,
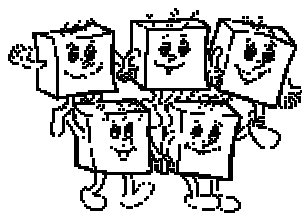*Romania, Turkey, Yugoslavia*

1995

Szeged, Hungary
http://ceoi.inf.elte.hu/ceoi95/
Participants:
Belarus, Croatia, Czech Republic, Estonia, Hungary,
Lithuania, Poland, Romania, Slovakia, Ukraine,
Yugoslavia

1996

Bratislava, Slovakia
http://turing.fmph.uniba.sk/www/ceoi/
Participants:
Croatia, Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia

1997

Strona główna

Nowy Sącz, Poland
http://www.mimuw.edu.pl/oi/ceoi97/
Participants:
Belarus, Croatia, Estonia, Germany, Hungary, Latvia, Lithuania, Netherlands, Poland, Romania, Slovakia, Ukraine, USA, Yugoslavia

1998

Zadar, Croatia
http://public.srce.hr/hsin/ceoi98/
Participants :
Bosnia-Herzegovina, Croatia, Czech Republic, Germany, Hungary, Poland, Romania, Slovakia, Slovenia

1999

Brno, Czech Republic
http://www.fi.muni.cz/ceoi/
Participants:
Bosnia-Herzegovina, Croatia, Czech Republic, Germany, Hungary, Poland, Romania, Slovakia, Slovenia, USA

2000

Cluj, Romania

http://ceoi.ubbcluj.ro/
Participants:
Croatia, Czech Republic, Germany, Hungary, Moldova, Netherlands, Poland, Romania, Slovakia, Slovenia, USA

2001

Zalaegerszeg, Hungary
http://ceoi.inf.elte.hu/
Participants:
Austria, Croatia, Czech Republic, Estonia, Germany, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Slovenia, Switzerland

Hungary is looking forward to meeting you!

Zalaegerszeg, Hungary

Free time programmes

ZALAEGERSZEG

made by
mészi
M·Ö·H·E·L·Y
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info@meszi.hu