

# NEWSLETTER

## Central European Olympiad in Informatics

The Central European Olympiad in Informatics is a younger partner of IOI and takes place since 1994 every year. It is a competition for secondary school students who are interested in informatics. The first CEOI was held in 1994, five years after the first IOI. The first International Olympiad in Informatics (IOI) for secondary school students, supported by UNESCO, was organised in 1989. Thirteen countries took part in the first competition, held in Pravetz (near to Sofia), Bulgaria. A year later already 25 countries sent their teams, composed of four students and two team leaders, to Minsk, Belorussian Republic, Soviet Union. In the subsequent years the

number of participating countries rose to almost 50.

Inspired by the fast-growing popularity of the IOI, the Romanian team proposed in 1993 to organise a similar event for the Central European countries (as a matter of fact, they have been organising the Olympiad in Informatics of the Balkan countries since many years). Shortly thereafter, Romania officially invited the teams of Austria, Croatia, the Czech Republic, Hungary, Poland, Slovakia and Slovenia to participate in the first Central-European Olympiad in Informatics (CEOI). Five of these eight countries Croatia, the Czech Republic, Hungary,

Poland and Romania sent their teams to Cluj in May 1994 where, upon special invitation, four more teams from Moldavia, Romania, Yugoslavia, and Turkey took also part in the contest. CEOI '94 was hosted by the "Tiberiu Popovic" secondary school in informatics, Cluj; the organising committees were headed by Ms. Clara Ionescu and Dr. Horia Georgescu.

The Czech Republic already hosted the 6<sup>th</sup> Central European Olympiad in Informatics in 1999, that took place in Brno, Faculty of Informatics.

## The CEOI Rules

### Introduction

The Olympiad is organized by the Ministry of Education or another appropriate institution of one of the eight Central European countries. According to the rules accepted by the initiators of the CEOI, teams of eight Central European countries, i.e. Croatia, Czech Republic, Germany, Hungary, Poland, Romania, Slovak Republic and Slovenia (suspended), are invited as regular participants. Moreover, the host country may invite guest participants as well.

The International Committee (IC) of the CEOI consists of the eight team leaders, and a representative of the host country, who chairs the meetings of the IC. A host which is willing to organize a CEOI in a given year in its country, has to announce its intent at least one year before that CEOI (during the previous CEOI competition days). Selection of the next host is made by the IC by a majority vote. Revision of the Regulations of the CEOI is adopted by the IC by a 2/3 majority vote. Enlarging or decreasing the set of CEOI countries can only be adopted by consensus.

### Goals

The CEOI aims at motivating secondary school students of Central Europe to:

- ▶ get more interested in informatics and information technology in general,
- ▶ test and prove their competence in solving problems with the help of computers,
- ▶ exchange knowledge and experience with other students of similar interest and qualification,
- ▶ establish personal contacts with young people of the Central European region

Additionally, the CEOI may:

- ▶ provide training for the students participating in the International Olympiad in Informatics (IOI),
- ▶ initiate discussion and co-operation in informatics education in the secondary schools of the Central European countries.

## Team Composition

A **contestant** - secondary school student - is not older than twenty years. The team leader will be a member of the General Assembly.

Observers and persons accompanying a delegation have to pay a fee.

## Scientific Committee

The **Scientific Committee** (SC) consists of a chairperson and a number of experts (SC members) from the host country.

It becomes active well before the beginning of the Olympiad and has the task of selecting and preparing problem proposals. A further task of the Scientific Committee is to test and evaluate the solutions of the contestants.

## Problems, Competition

The **competition** consists of two rounds in two days. In both rounds the working time is five hours and the contestants will be given one to four problems to solve. The selected problems will be translated by the team leaders into the national languages of the teams. Contestants may submit written questions to the Scientific Committee concerning the formulation and interpretation of the problems for the entire duration of the contest. Contestants may use their national language in asking questions during the first hour of competition. Questions submitted afterwards may only be in English. Only questions that can be answered with 'Yes', 'No' or 'No comment' may be accepted.

The answers will be produced by the members of the Scientific Committee and approved by the chairperson of the SC as soon as possible. When the competition ends, each contestant should prepare his/her solution for the evaluation, according to regulations issued by the organizers. No special hardware requirement or software packages (e.g. graphic packages) will be needed to solve the problems. The whole communication between the CEOI authorities and contestants will be in a written form.

## General Regulations

Each **team** is composed of up to four secondary school students, a team leader and a deputy team leader. Only the cost of travel to and from the place of the competition should be paid by teams; all local expenses are covered by the organizers. Accompanying persons and observers are welcome, but they should pay for their stay. Interested people are advised to contact the local organizers. The official language is English. Students may use their mother tongue.

Programming problems will be formulated in English and then translated by the team leaders to the mother tongue of their team. Both versions will be given to the students. Team leaders must be able to speak and write in English, as well as the language of their team. The computers will be IBM PC compatibles with selected software packages. Only the computers and software with built-in help facilities provided by the organizers may be used in the competition.

In particular, the use of printed materials will be forbidden. The programming languages of the contest are Pascal, C and C++; the precise versions of these languages will be updated each year. The compilers and programming environments for the above mentioned programming languages will be installed on the hard disk.

## Evaluation

When the **working time** is over, the solutions of each of the contestant will be checked by an evaluator, using previously unpublished test data. The evaluation is based on the test data and the responses of the programs only. The evaluation procedure concludes with the meeting of the Scientific Committee, where the evaluation reports are discussed.

Potential disagreements are dissolved by voting. Achieving a proper and balanced evaluation is the responsibility of the Scientific Committee. If a team leader does not accept the results of the evaluation, he/she may appeal to the General Assembly. Finally, the president of SC or IC presents the anonymous results to the General Assembly to take final decisions.

## Gen. Assembly

**General Assembly** (GA) is composed of the team leaders of the participating countries and the president nominated by the host country. General Assembly selects problems to be solved in the competition from a set of problems prepared and proposed by the Scientific Committee. The selection procedure is the following:

- The chairperson of the Scientific Committee distributes the proposals. Their number equals the number of problems to be solved by the contestants.
- The GA members may either accept or, in case of a major ambiguity of formulation or other serious

reasons, deny the proposals by voting. When and if a proposal is denied, another prepared proposal will be offered to the GA. For such cases, the Scientific Committee should prepare at least two extra proposals for each round. The text of the accepted proposals must not be changed by the GA, except for minor rephrasing that is needed to avoid smaller ambiguities.

- The selected problems will be translated by the team leaders into the national languages of the teams.

The GA will determine the minimum scores for the gold, silver and bronze medals. The proportion of these gold, silver and bronze medals should be approximately 1:2:3. Each contestant will receive a certificate of participation.

# Some Helpful Information and Suggestions

## Important places

### Official Opening and Closure Ceremony Competition

### Meeting of the International Jury

### Accommodation

### Breakfast

### Lunch and dinner

Faculty of Informatics, Botanická 68a, classroom D3

Faculty of Informatics, Botanická 68a

Faculty of Informatics

On Monday July 1 Meeting of the International Jury takes place at the Student's Dormitory at Kounicova street

Student's Hostel, Kounicova street 50

Kounicova Cafeteria in the building of Kounicova Hall of Residence

Canteen in the building of the Faculty of Law at Veverí street 70

## Accommodation

The CEOI '07 organizers have arranged your accommodation in Student's hostel of Masaryk University at Kounicova Street No. 50 in double bed rooms.

The hostel is reachable from the city center by the tram No. 12 direction "Červínková" or No. 13 direction "Technické muzeum". The tram stop "Klusáčková" is nearest to the student's hostel

## Faculty of Informatics

The building of the Faculty of Informatics is located at the Botanická Street No. 68a. The building is best reachable from the city center by the tram No. 1 direction "Řečkovice". The tram stop "Hrnčířská" is the nearest to the Faculty building. The Faculty of Informatics is about 600 meters from the student's hostel at Kounicova Street, where you are accommodated (see Fig. 1).

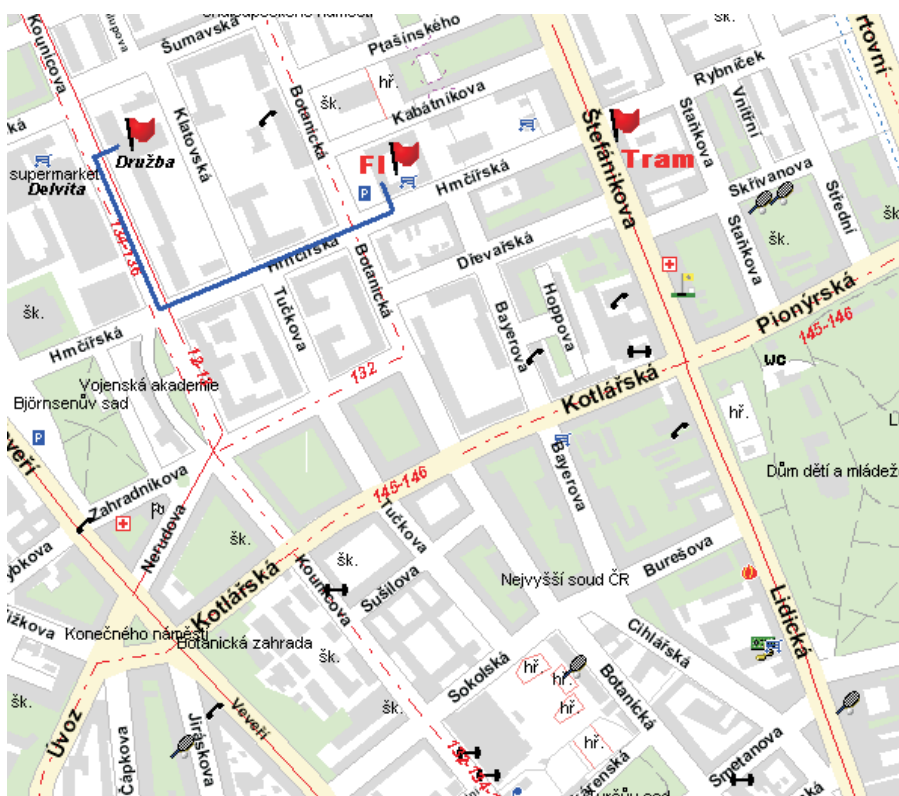


Fig. 1: How to get from the hostel to the faculty

## Brno Introductory Word

Brno, the Czech Republic's second largest city, has a population of nearly 370,000 people. It lies in the central part of Europe and within its two hundred-kilometre radius there are other important European capitals: Prague, Vienna and Bratislava. The international airport in Brno serves regular flights. Brno is the metropolis of Moravia and an important tourist centre for all who want to explore the natural and cultural beauties of the South-Moravian region.

To the north of Brno there is the protected area of the Moravian Karst (Moravský kras) and to the south stretch the Moravian vineyards with their typical wine cellars. The city is surrounded by beautiful mixed forests, which offer many opportunities for tourism and cycling. Brno prides itself on many notable historic sites that show evidence of its rich cultural history.



Fig. 2: The castle Špilberk



Once established as a settlement of merchants eight centuries ago on the junctions of the rivers Svratka and Svitava, it withstood the pressure of both the Hussite and Swedish besiegement, witnessed Napoleon's military expedition to Slavkov, bore the cruel consequences of the Austrian defeat at the Battle of the Three Emperors, became an industrial centre of the Habsburg monarchy called "the Austrian Manchester"

Today Brno is a seat of universities and important judiciary institutions. It offers many possibilities of cultural enjoyment in its numerous theatres, museums, cinemas and clubs. The Brno Exhibition Centre with its eighty-year tradition is a venue of many international trade fairs, exhibitions and congresses, and as such plays a significant role in the social and economic life of the whole city.

and, in the twentieth century, gained a character of a modern city thanks to the construction of new buildings in the functionalist style.

The most important example of modern architecture in Brno is The Tugendhat Villa - a historic site inscribed on the UNESCO's World Cultural Heritage List.



Fig. 3: The Tugendhat Villa

The City of Brno regularly holds various cultural events, festivals (e.g. "Brno - City in the Centre of Europe" associated with a fireworks competition "Ignis Brunensis") as well as some notable sporting events (Brno Grand Prix of road motorcycles). Brno is also a city of modern shopping and entertainment centres.



Fig. 4: The cathedral of St. Peter and Paul

## Faculty of Informatics, Masaryk University



The Faculty of Informatics at Masaryk University was established in 1994 and is the very first specialized faculty of its kind in the Czech Republic. Its establishment followed decades of experience built in the area of Mathematical Informatics at the Faculty of Science, and with significant involvement from prominent specialists in the field of Informatics at both national and international levels. Masaryk University recognized the importance of Informatics and interdisciplinary Informatics applications, the need to offer quality education aimed at understanding this field, and the practical application of Informatics knowledge. The achievements of the

Faculty and its graduates are testament not only to the success of the Faculty but to the University as a whole.

From a modest beginning of twenty academic staff and less than four hundred students, the Faculty has grown rapidly. Today, with more than 1,700 students, the Faculty offers a wide range of study programs at Bachelor, Master and Doctoral level. Bachelor study programs offer the foundation level of university study in Informatics. Master study programs offer the second level of university study in three main subjects and many specializations - from Theoretical Informatics to Information Systems,

Natural Language Processing and Graphic Design.

A high standard of teaching is combined with in depth scientific research. Academic and research staff have achieved significant successes internationally in many areas of Informatics, such as Quantum Informatics, Concurrent and Distributed Computing, Database Systems, Picture Analysis and Computer Graphics, Computer Networks and Distributed Systems, Machine Learning, Data Mining and Natural Language Processing.

Fig. 5: Faculty of Informatics



# CEOI Teams & Guides

## Croatia



**Team leader:** Krešimir MALNAR  
**Deputy leader:** Luka KALINOVČIĆ

**Contestants:** Igor ČANADI  
 Goran ŽUŽIĆ  
 Domagoj KUSALIĆ  
 Relja MEDIĆ  
**Guests:** Damir PAVIČ



## Germany



**Team leader:** Wolfgang POHL  
**Deputy leader:**

**Contestants:** Daniel GRUNWALD  
 Ludwig SCHMIDT  
 Benito van der ZANDER  
 Martin MAAS  
**Guests:** Steffi HEINICKE  
 Michael HAHN



## Hungary



**Team leader:** Gyula HORVÁTH  
**Deputy leader:** László ZSAKÓ

**Contestants:** András EISENBERGER  
 Tamás PEREGI  
 Balázs SZALKAI  
 Gergely NAGY



## Poland



**Team leader:** Jakub PAWLEWICZ  
**Deputy leader:** Tomasz IDZIASZEK

**Contestants:** Marcin ANDRYCHOWICZ  
 Marcin KURCZYCH  
 Jakub KALLAS  
 Tomasz KULCZYŃSKI



## Romania



**Team leader:** Emanuela CERCHEZ  
**Deputy leader:** Constantin GALATAN

**Contestants:** Andrei GRIGOREAN  
 Cosmin GHEORGHE  
 Victor RUSU  
 Stefan-Alexandru FILIP



## Slovak Republic



**Team leader:** Gabriela ANDREJKOVÁ  
**Deputy leader:** Peter PEREŠÍN

**Contestants:** Vladimír BOŽA  
 Peter ONDRÚŠKA  
 Michal DANILÁK  
 Jozef JIRÁSEK



## Czech Republic I



**Team leader:** Pavel TÖPFER  
**Deputy leader:**

**Contestants:** Pavel KLAVÍK  
 Miroslav KLIMOŠ  
 Josef PIHERA  
 Roman SMRŽ



## Czech Republic II



**Team leader:**  
**Deputy leader:**

**Contestants:** Jakub KAPLAN  
 Lukáš LÁNSKÝ  
 Libor PELTAN  
 Libor PLUCNAR



## Czech Republic III



**Team leader:**  
**Deputy leader:**

**Contestants:** Ondřej BOUDA  
 Marek BRYŠA



## Team Guides



Karolína MALÁ  
 Jitka MATĚJKOVÁ  
 Tereza KRATOCHVÍLOVÁ  
 Zuzana KOMÁRKOVÁ

Monika PETERKOVÁ  
 Dominika POŠOVÁ  
 Alexandra SKRIPOVÁ  
 Hana ŠORMOVÁ

## CEOI Committees

### Scientific committee

**Chairman:** Daniel KRÁL  
**Members:** Martin MAREŠ  
 Milan STRAKA  
 Zdeněk DVOŘÁK  
 Pavel NEJEDLÝ



### Organizing committee

**Chairman:** Tomáš PITNER  
**Members:** Jaroslav PELIKÁN  
 Luděk BÁRTEK  
 Zbyněk MAYER  
 Roman ŽILKA  
 Dana KOMÁRKOVÁ  
 Miroslava KOZUBÍKOVÁ  
 Eva MATĚJKOVÁ



## CEOI Programme

### Sunday July 1<sup>st</sup>, 2007

20:30

Arrival and accommodation of delegations  
 Meeting of the International Jury,  
 Student's Dormitory at Kounicova Street 50

### Monday July 2<sup>nd</sup>, 2007

7:30 - 8:30

Breakfast

9:00 - 10:30

Official Opening ceremony at the Faculty  
 of Informatics, Botanická 68a, classroom D3  
 Presentation of Sponsors

11:00 - 13:00

Practical Instructions about Computer  
 Equipment for the Competition

13:15

Lunch

14:30

Excursion to Brno, the metropolis of  
 Moravia

18:00

Dinner

19:00

Meeting of the International Jury  
 Final Approval of the Tasks for the  
 First Competition Day  
 Translation to the Native Languages

### Tuesday July 3<sup>rd</sup>, 2007

7:30

Breakfast

9:00 - 14:00

Competition

14:15

Lunch

14:00 - 16:00

Testing of the Results and Evaluation  
 Excursion to laboratories at the  
 Faculty of Informatics

16:00 - 17:00

How to beat the computer chess program  
 Lecture on computer chess  
 Bohumír Štědroň, Ph.D. Including  
 demonstration and a simultaneous match  
 Evaluation of Solution and Resolving  
 Issues

18:00

Dinner

### Wednesday July 4<sup>th</sup>, 2007

7:30

Breakfast

9:00 - 17:00

A whole-day trip - Lednice

18:00

Dinner

19:00

Meeting of the International Jury  
 Final Approval of the Tasks for the  
 Second Competition Day  
 Translation to the Native Languages

### Thursday July 5<sup>th</sup>, 2007

7:30

Breakfast

9:00 - 14:00

Competition

14:00 - 16:00

Testing of the Results and Evaluation

14:15

Lunch

Evaluation of Solution and Resolving Issues

18:00

Dinner

18:30

A trip - The Nicolas Copernicus  
 Observatory and Planetarium in Brno  
 Meeting of the International Jury

19:00

### Friday July 6<sup>th</sup>, 2007

7:15 - 8:00

Breakfast

8:00

Departure to the Faculty of Informatics

8:30 - 16:00

A whole-day trip - Moravian Karst

Final Evaluation of the Results,  
 Preparation of the Final Results Table

17:00

Awarding Ceremony, Official Closure of  
 the Competition, classroom D3

18:00

Evening Cultural Programme

### Saturday July 7<sup>th</sup>, 2007

7:30

Breakfast

Departure