<center>**Presentation of a Competition in Informatics and IT**</center>

Name of the Competition: International Collegiate Programming Contest (ICPC, popular as "the ACM contests" also)

Area: Informatics

Style of the Competition:

A. ICPC is an annual algorithmic style programming contest – the contestants have to solve each task with a corresponding program written in one of the programming languages C/C++ or Java.
B. ICPC is a competition of teams composed of three undergraduate students of a same University.
C. ICPC has two rounds – Regional and World. The world is divided in 36 regions (13 in North America, 3 in South America, 5 in Europe, 12 in Asia, 2 in Africa and 1 in Australia and Oceania). Each year (in the period October-December) each region is organized Regional Final. If the region is too large then the Regional Director could organize some Region Semifinals to qualify teams for the Regional Final. By the results of Regional Finals each region is qualifying some number of teams (from 1 to 12, depending of the size of region and results of the teams from the region in previous contests) to the World Finals. In principle as many as necessary teams from one university could take place in Regional Finals (and Semifinals) but only one team of specific University could be qualified for the World Finals. In the last years usually teams of about 80 universities took place in the World Finals. The World Final is organized each year in period of March-April in a University nominated by the scientific patron of the contest – the Association for Computing Machinery (ACM). Participating fees for Regional Finals are not obligatory – the Regional Director decides to collect or not collect participation fees. The participation of teams in World Final is free of any fee.
D. Each ICPC-competition (both Regional and World) is organized in one day. The contestants have to solve 10-12 tasks for five hours.
E. The World Final needs attendance of the participants at the appointed time and place. Same is the case in some of the regions. There are regions in which the Regional Final is organized **in same time and with the same tasks** but in more than one place. The situation is similar for the organization of Semifinals – same time and same tasks but possibly more than one site.
F. Grading is made by a grading system PC^2 ("PC-Squared") common for all ICPC contests. During the contest participants are submitting source codes to the system. Each task's solution is tested with a set of tests that is unknown to the contestants. Unsuccessful submit is qualified in some groups ("compilation error", "run time error", "time limit exceeded", "excessive output", "formatting error" and "wrong answer of some of tests") and the qualification is reported to the team by the system. If the program outputs correct (and well formatted) results for all test cases in the preliminary defined time limit then the system assigns one solved task to the team, sends "successful solution" message to the team and saves the time (in minutes) of receiving the correct solution considered from the beginning of the contests. To the time of receiving of correct solution are appended 20 minutes for each wrong submit to obtain the final time for solving the tasks. The teams are ranked by the number of solved tasks. If two or more teams have same number of solved tasks they

are ranked by the sum of final times of solved tasks (as smaller is the sum of times as better is ranking of the team).

G. The Competition Jury of the Regional Final is nominated by the Regional Contest Directors. It could be absolutely independent from participating universities but it could be composed of representatives of the participating universities too. The size of the Jury is usually equal of the number of the proposed tasks – each Judge is responsible (and usually is author) of one of the tasks. The Competition Jury of World Finals is independent from participating universities. It is nominated by the scientific patron of the contests – ACM – and his size, structure and responsibilities of the members (besides preparing of tasks) was never publicly announced.

H. The size and functions of the Organizing committee (nominated by ACM and the main sponsor – last years this is the company IBM) was also not publicly announced.

I. The ICPC contest is each year publicly announced of the web-site of the contest [] and on the web-sites of the regions that are easy accessible by the links in the site of the contest. All coaches of the teams that participated previous years in at least one of the regions are personally invited in the beginning of the season to participate again.

J. Tasks and the results (ranking of participating teams) in each ICPC contest are published in the corresponding sites. Competitor's work and author's solutions of the tasks (source codes or model solutions) was never published officially.

K. The ICPC contest has no division by any attribute.

L. All participants in Regional Finals and Semifinals of ICPC obtain a certificates for participation. By the decision of Regional Director some teams are awarded with a diploma mentioning the ranking of the team in the contest – so called "placed teams". The most valuable award of the Regional Final is qualifying for the World Final. In the World Final the winner is awarded the title and the Trophy of the World Champion. Best four teams are awarded Golden medals (and some monetary prize too), next four teams – Silver medals (and monetary prize) and next four teams – Bronze medals (and monetary prize). Special prizes are awarded to the 6 continental winners (the best team for each continent) too.

M. ICPC of ACM is an event that attracts many high level professionals – university professors and scientist – interested in education of programming in very high level. Being a sophisticated and extremal form of programming the contest is really an unique Lab for experiencing with teaching methods, automatic testing, developing advanced abstract data types and algorithms, as well as implementing it in data structures and programs etc. It is possible to say that a new academic discipline is appearing around ICPC of ACM and the other similar contest – "competitional" programming ("top-coding" in the slogan of the contestants). The specific of ICPC, comparing with the other "top-coding" contest is working in teams, which is very important for the future development and realization of the young programmers.

Target Group: ICPC is open practically for each university student of undergraduate program in Computer Science with strong interests in algorithmics. It is important to mention that a student may not participate more than two times in the World Finals.

Age of Participants: age was never formally fixed. The contestants have to be just enrolled in an undergraduate program (even not necessary to be in Computer science and related topics) of the university they are presenting.

School level of Participants: undergraduate College/University students.

Number of Participants and the number of editions of the competition in the Last 3 Years:

Year	Teams	Universities	Countries	Accepted to WF
2004	3150	1412	75	73

2005	4109	1582	71	78
2006	5606	1737	84	83
2007	6099	1756	82	88

History of Competition: Contest was created in 1977 by initiative of ACM which was the principal organizer of the first and the subsequent (totally 31) editions of the event.

Financial Basis of the competition: Participation fees of the teams during Regional contests are covered by the universities (the university have to find sponsors if necessary). The Regional Director have to organize the contest and to find corresponding financial support for hall, computers and networking, as well as for some refreshments during the contests, final awarding ceremony (diner) and some excursion for participants. Word Final is organized by ACM and ACM is deciding who will be the general sponsor of the contest. Since 1998 the general sponsor of the World Final contest is the company IBM that is covering all expenses beside the travel of the teams (some time small financial support is also given for the teams which country is to faraway from the site of the World Finals. In the last years the traveling of practically all participating in World Final teams was kindly supported by Google.

Competition Problems: <в отделни файлове са задачите от последните три финални състезания. Повече подробности никога не са публикувани>

Contact Address of the Organizers, E-mail, Web page(s):

> **Contest Manager**
> Marsha Poucher,
> Voice: (254) 710-3875 Fax: (254) 299-1411
> Baylor University, ICPC Headquarters
> One Bear Place #97356
> Waco,TX 76798-7356 USA
>
> **ICPC Executive Director**
> William B. Poucher,
> Voice: (254) 710-3876 Fax: (254) 299-1411
> Baylor University, Computer Science Department
> One Bear Place #97356
> Waco, TX 76798-7356 USA
> **Official site of ICPC:**
> http://icpc.baylor.edu

Photo Gallery: lot of photos could be found in the official site of the contests

Bulgarian participation: Bulgarian university teams participate in the contest since 1994, when it was open for the first time for students from Eastern Europe. For some years Bulgaria (TU Varna) was a headquarter of the East-European region. Later the region was divided to North-Eastern and South-Eastern and the headquarter of the South-Eastern region moved in Bucharest. In regional contest regularly participate only teams of Sofia University. In different years in the regional participated the teams of Technical University Varna, American University in Bulgaria, Plovdiv University and Shoumen University. Only teams of Sofia University was qualified for World Finals as follow:

> 1994 – honorably mentioned (from 35 finalists)
> 1996 – 4-th in the world, European champion (from 43 finalists)
> 1998 – 17-th in the world, 7-th in Europe (from 54 finalists)
> 2002 – 27-th in the world, 12-th in Europe (from 70 finalists)
> 2004 – honorably mentioned (from 73 finalists)
> 2005 – 29-th in the world, 16-th in Europe (from 78 finalists)

2006 – 19-th in the world, 9-th in Europe (from 83 finalists)

Compiled by K. Manev