

ACM-ICPC Dhaka Regional 2012: Preliminary Round Online Contest

Dr Syed Akhter Hossain

Regional Contest Director, ACM-ICPC Dhaka 2012

Professor and Head, Department of Computer Science and Engineering

Daffodil International University

aktarhossain@{yahoo.com, daffodilvarsity.edu.bd}

Introduction

Association of Computing Machinery (ACM), started in late 18th century, the world's largest educational and scientific computing society with more than 100,000 members that delivers resources for advancing computing as a science and a profession as a whole. ACM (www.acm.org) provides the computing field's premier Digital Library and serves its members and the computing profession with leading-edge publications, conferences, and career resources world-wide.

The ACM International Collegiate Programming Contest (ICPC) is a multitier, team-based, programming competition operating under the auspices of ACM and headquartered at Baylor University (<http://icpc.baylor.edu>).

ACM-ICPC contest involves a global network of universities hosting regional competitions that advance teams to the ACM-ICPC World Finals. Participation has grown to several tens of thousands of the young talented sharpen students and faculty members in computing disciplines more than 2,500 over universities from over 80+ countries on these six continents. This programming contest fosters creativity, teamwork, and innovation in building new software programs, and enables students to test their ability to perform under pressure through solving challenging problems in well defined timeframe.

ACM-ICPC in Bangladesh

ACM-ICPC Dhaka Regional contest began its journey back in the year 1997. Starting with the North South University, Bangladesh University of Engineering and Technology and East West University hosted this prestigious programming contest. Daffodil International University, being the fourth different host, taking an entirely international approach. ACM-ICPC Dhaka regional contest created a culture of problem solving using mathematical and computational techniques among the young and talented minds of the country. Over the years, national computer programming contests, keeping the spirit of ACM-ICPC, are hosted by different universities. In all these different contests, due to the limitation of infrastructures, number of teams from different universities were restricted between 80 to 100+ teams. As a result, the formation of new teams as well as allowing the teams in a bigger scale in the contest from all the universities was not explored.

ACM-ICPC Dhaka 2012 Preliminary Round

For long time, there was a felt need among the community of contest organizers to increase the weight of the Dhaka Regional site through increased number of teams in the contest and create a visibility to ACM-ICPC headquarter to embark on the present quota. In order to achieve this, this year Dhaka regional 2012 contest started with a plan to host a preliminary round online contest. Several discussions with a well formed preliminary round rules scheduled Saturday 10 November 2012 from 3:00pm to 8:00pm for the online contest.

This first ever preliminary round online contest faced number of challenges on how to engage maximum universities and maximum teams within the scheduled time of the registration on the ICPC website (icpc.baylor.edu). The first challenge was to properly educate the teams about the preliminary rules and transmit clearly the intention of the preliminary round online contest within the mind of the teams. The second challenge was to decide on the platform, an online site to conduct the online contest, for the contestants. The third challenge was to visualize the probable scenarios of the contestants while attending online contest on the platform during the preliminary round.

The clock was ticking with our understanding and handled challenges to ensure a sound and a quality online contest. The platform LightOJ (www.lightOJ.com), created by the World Finalist Jane Alam Jan, was considered for the online contest and necessary server side migration and testing for the contest scalability was performed round the clocks by the Dhaka regional 2012 Judging director and co-director in close association with the RCD (Regional Contest Director). The difference between day and night literally faded away for 72+ hours for RCD and judging panels before this online contest. As the registration deadline was approaching, growing number of teams shown up on the ICPC site and with several duplication of registrations due to the first hand experience of many teams registering for the preliminary round online contest.

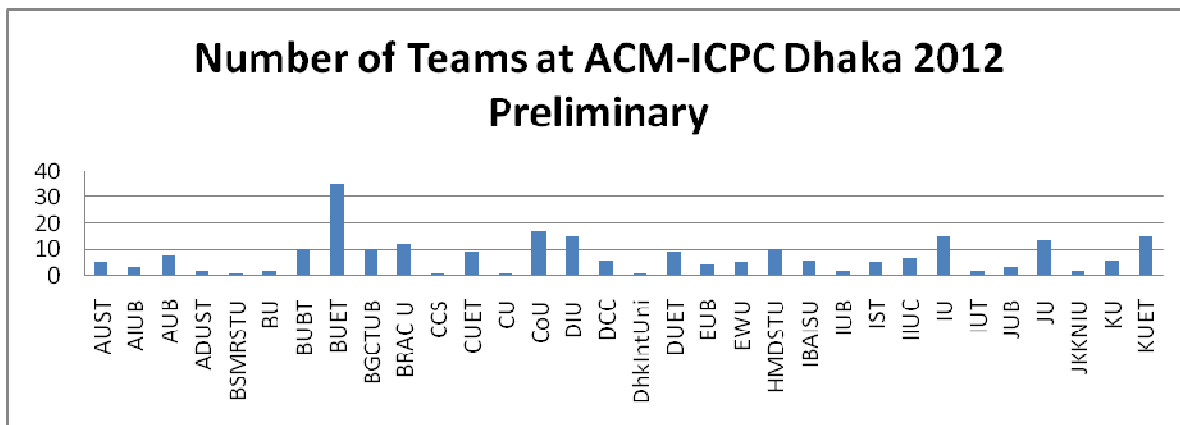


Figure 1(a). Number of Teams in different universities

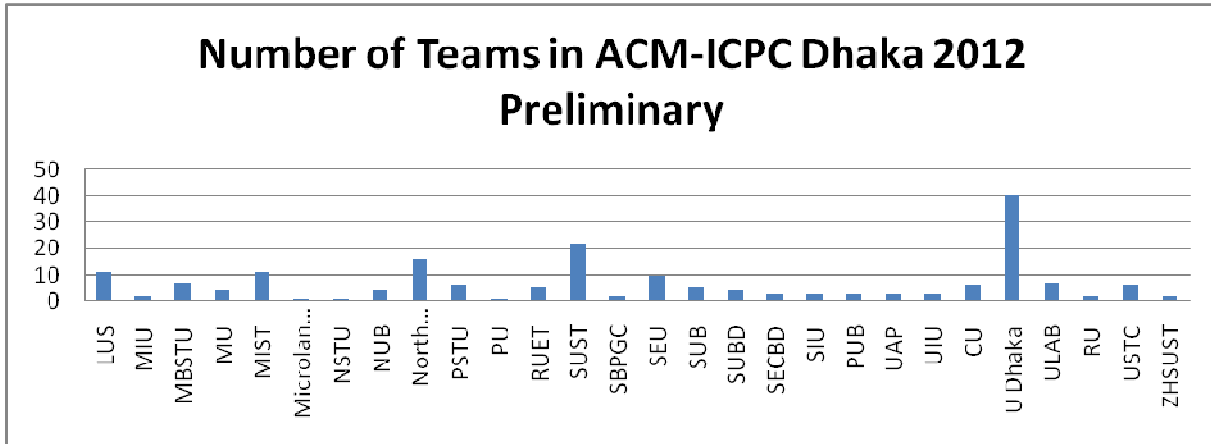


Figure 1(b). Number of Teams in different universities

As seen in the Figure 1(a) and 1(b), after the registration deadline, 438 teams registered from 65 institutions for the preliminary round online contest. Amazingly among these registrations there were universities and institutions with 30+ teams, 15+ teams, and 10+ teams. This list was also populated with some of the brand new universities. This is clearly an indication of growth of the CSE/IT graduates in the country.

The preliminary round online contest began on the scheduled date and time. The excitement was at the nerves and counting of moments began. The teams from different universities were doing programming contest online on the LightOJ platform from 60+ universities mostly from the university campus. The submission started growing with acceptance and rejection of solution from the Judges sitting in the virtual class room of the Daffodil International University. The submission scenario is shown in Figure 2(a) and Figure 2(b).

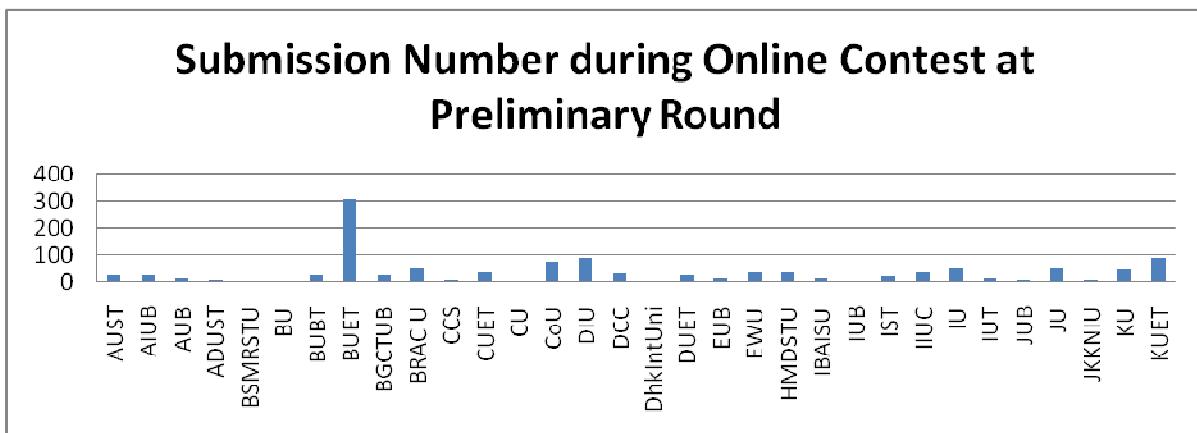


Figure 2(a). Solution Submission of Teams from different universities

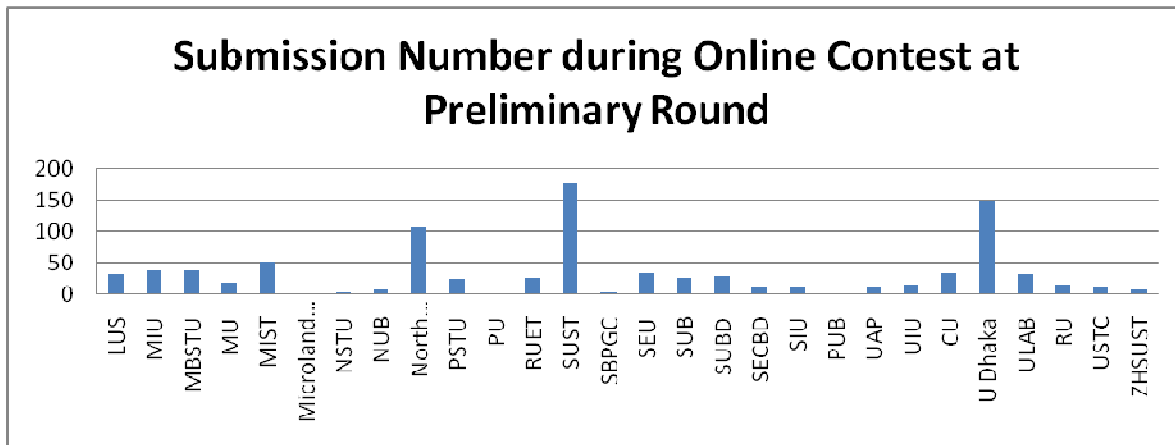


Figure 2(b). Solution Submission of Teams from different universities

There were six problems for the preliminary round online contest with different levels of difficulty and teams attempted to solve problems with the given time of five hours. The submission and acceptance status of problems are shown in Figure 3(a) and Figure 3(b) along with the title of each problem.

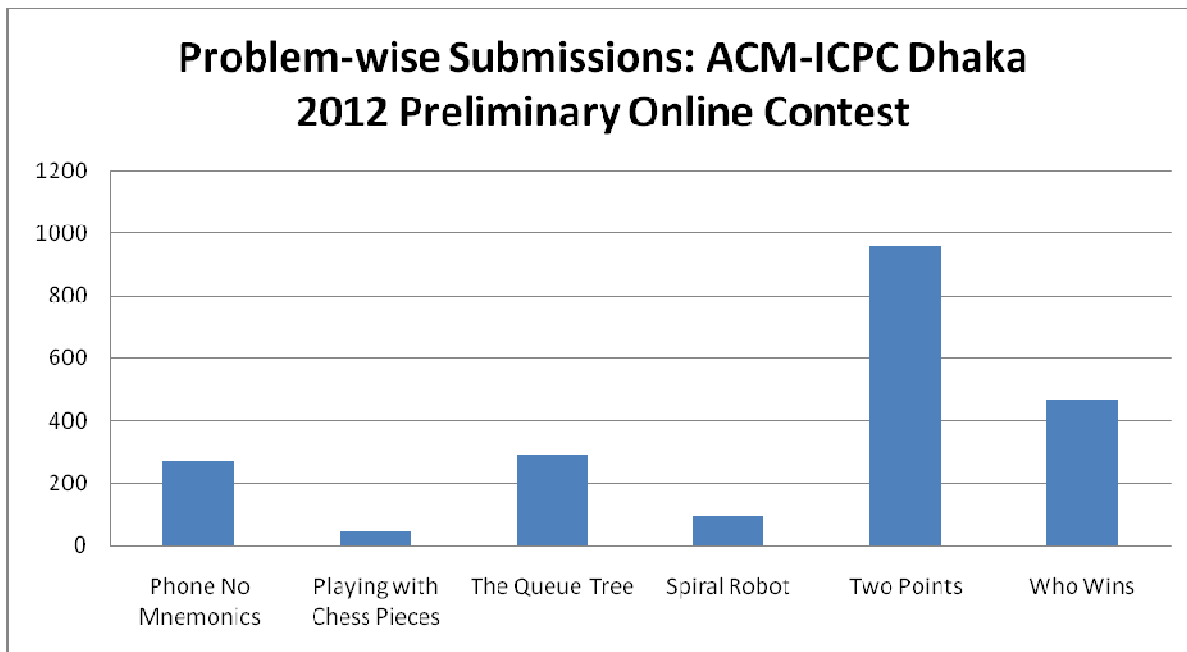


Figure 3(a). Problem wise submission numbers

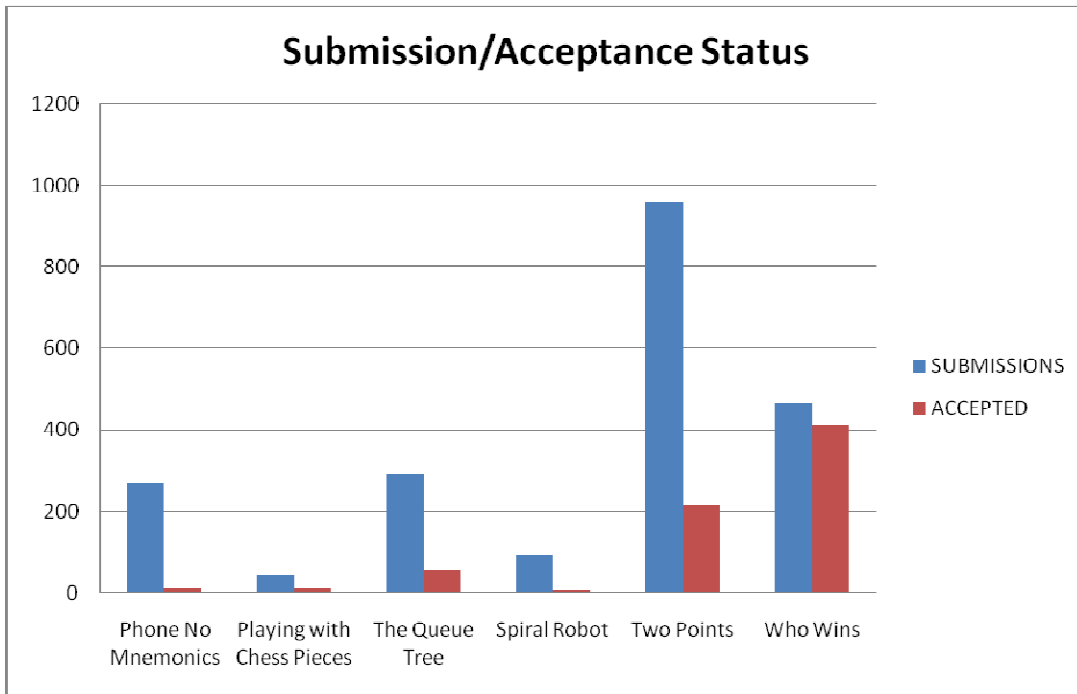


Figure 3(b). Problem wise submission/acceptance

The preliminary round online contest was successful with a good problem solving statistics. The team percentage of problem solving is shown in the Figure 4.

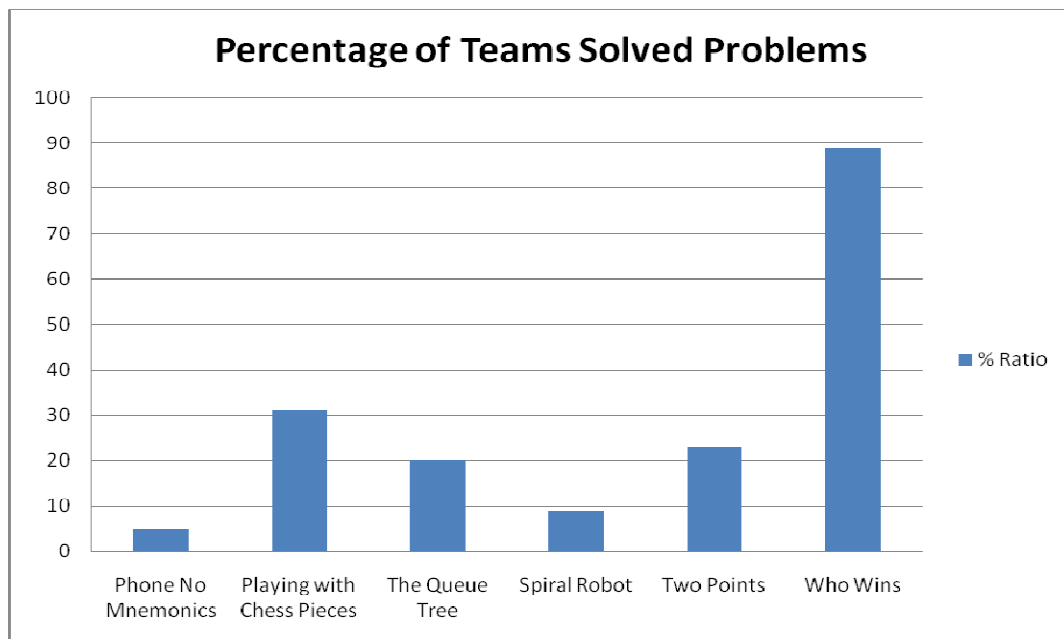


Figure 4. Problem wise solution percentage

Discussion and Recommendations

The preliminary round online contest prior to ACM-ICPC Dhaka Regional 2012 event was challenging and very refreshing. This online contest created huge enthusiasm among the contestants of the country which is clearly visible in the number of teams shown in the Figure 1(a) and Figure 1(b). For the first time, 400 teams contested online from 64 institutions at the same time before the Dhaka regional event. The contestants, despite their interest and drives, are yet to uncover their potentials in problem solving primarily due to enough exercise and problem solving skills which have been reflected in the figures shown for submissions. The continuation of the culture of online contest prior to Dhaka regional is now more essential to be consistent with the growth of the team numbers to 1000+.

Based on the experience and observations of the preliminary round, the following recommendations are drawn for the future:

1. Online dedicated server for LightOJ.com (may be entirely sponsored or supported)
2. Training for the contestants through interactive sessions and webinars from top judging panel
3. Contest training for the teachers teaching programming, data structure and algorithm courses in all universities
4. More on campus online contest for problem solving skills and inflate LightOJ for these contests
5. Develop reading habits of contestants with clear understanding of instructions

Acknowledgements

Judging Director of ACM-ICPC Dhaka 2012:

Shahriar Manzoor, Southeast University (Judge ACM ICPC World Finals 2003-2013).

Co-Judging Director of ACM-ICPC Dhaka 2012:

Mohammad Mahmudur Rahman, Mukto Software Ltd (ACM ICPC World Finalist 2007)

All the Internal and External judges of ACM-ICPC Dhaka 2012

List of Universities

AUST	Ahsanullah University of Science and Technology	JKKNIU	Jatiya Kabi Kazi Nazrul Islam University
AIUB	American International University - Bangladesh	KU	Khulna University
AUB	Asian University of Bangladesh	KUET	Khulna University of Engineering & Technology
ADUST	Atish Dipankar University of Science & Technology	LUS	Leading University, Sylhet
BSMRSTU	Bangabandhu Sheikh Mujibur Rahman Science and Technology U..	MIU	Manarat International University
BU	Bangladesh University	MBSTU	Mawlana Bhashani Science & Technology University
BUBT	Bangladesh University of Business & Technology	MU	Metropolitan University - Sylhet
BUET	Bangladesh University of Engineering and Technology	MIST	Military Institute of Science and Technology
BGCTUB	BGC Trust University, Bangladesh	Microland IICE	National University of Bangladesh/Microland IICE
BRAC U	BRAC University	NSTU	Noakhali Science and Technology University
CCS	CCS (National University of Bangladesh)	NUB	Northern University of Bangladesh
CUET	Chittagong University of Engineering & Technology	North South U	North South University
CU	City University	PSTU	Pabna Science & Technology University
CoU	Comilla University	PU	Primeasia University
DIU	Daffodil International University	RUET	Rajshahi University of Engineering & Technology
DCC	Dhaka City College	SUST	Shahjalal University of Science and Technology
DaIU	Dhaka International University	SBPGC	Shaikh Burhanuddin Post Graduate College
DUET	Dhaka University of Engineering & Technology - Gazipur	SEU	Southeast University
EUB	Eastern University of Bangladesh	SUB	Stamford University Bangladesh
EWU	East West University	SUBD	State University of Bangladesh
HMDSTU	Hajee Mohammad Danesh Science and Technology University	SECBD	Sylhet Engineering College
IBAISU	IBAIS University	SIU	Sylhet International University
IUB	Independent University - Bangladesh	PUB	The People's University of Bangladesh
IST	Institute of Science and Technology	UAP	The University of Asia Pacific
ISTB	Institute of Science and Technology - Bangladesh.	UIU	United International University
IIUC	International Islamic University Chittagong	CU	University of Chittagong
IU	Islamic University, Bangladesh	U Dhaka	University of Dhaka
IUT	Islamic University of Technology	ULAB	University of Liberal Arts Bangladesh
JUB	Jagannath University, Bangladesh	RU	University of Rajshahi
JU	Jahangirnagar University	USTC	University of Science and Technology Chittagong
		ZHSUST	Z. H. Sikder University of Science and Technology