

# Integrated ACM competitions website

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## Abstract

In the paper we present our work on the integrating website for ACM (Association for Computing Machinery) computer science competitions in Slovenia (<http://tekmovanja.acm.si>).

The reason to make an integrated website was the fragmentation of ACM competition websites, which resulted in a non-efficient and sometimes confusing news distribution for teachers. We started with an analysis of international world-wide competitions and their websites. We divided them into three age groups of contestants: primary school competitions (K-8), secondary school competitions (K9 – K12) and university competitions. Along the competitions' websites we also analyzed a number of the online judge systems used by various competitions.

In Slovenia there are three ACM competitions: *Bober*, *RTK* and *UPM*. *Bober* is for primary school children, and it is run actually internationally. The national secondary school competition in computer science is *RTK*. It leads to Central European Olympiad in Informatics (CEOI) and International Olympiad in Informatics (IOI). The last considered competition is *UPM* and it is for university students. The winners of *UPM* participate in the Central Europe Regional Contest (CERC) and later in ACM International Collegiate Programming Contest (ICPC).

As our goal was to simplify the publication of information, and to minimize the fragmentation of information, we made an integrated website that also includes competing environments. The new website hosts all Slovenian ACM competitions and information about them.

The technology used for a new website was an open source content management system Drupal, because of its good documentation, online support and module repository.

The result of our project is an integrated website for Slovenian ACM competitions <http://tekmovanja.acm.si/>. We used a freely available theme *Zen* as a starting point to make the development process faster. Over time we customized the theme to fit our needs and implemented some of our own modules. For example, we added menus and created a separate color scheme for each competition that reflected the color scheme of international competitions. The first page aggregates news from all competitions, the header of each competition page contains a link to the judge system and to the international level competitions. Further, we created a node (news) based gallery with an additional central page, a direct access to the results of competing systems (*UPM*), we added RSS feed with upcoming events and calendar. At last but not least, we created module to support presentation of sponsors. The module randomly displays logos of sponsors based on the category of the sponsor.

For every competition an editor with appropriated rights was appointed. His or her task is to keep the information up to date and to publish interesting and relevant news. For the moderators we also prepared simple how-to instructions.

The programming and setting up the page was done by students at the course Computer Science in Practice with help of web developer Jan Vesel and we want to thank them for their contribution.

## Keywords

Integrated website, primary school competition, competing system, open source development environment.

## Biography



**Nataša Kristan** graduated from University of Ljubljana, Faculty of Education in 2011 and became a teacher of Mathematics and Computer Science. She has been teaching Logic and Mathematics group in Primary school. Now she organizes CS Competitions and Summer School at Faculty of Computer and Information Science, University of Ljubljana. Her main research is CS Didactics and Computational Thinking.



**Andrej Brodnik** got his PhD from the University of Waterloo, Canada. Afterwards he worked as a head of research and CTO in industry and was affiliated with the University of Primorska and the University of Technology in Luleå. Andrej's prime research interest is in data structures and algorithms, and didactics of CS. Prof. Brodnik is a recipient of a national award for exceptional achievements in higher education teaching. He currently holds position with the University of Ljubljana.