Web-based Information System for Management of Unitech Conference

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Abstract: The paper presents a Web-based information system designed for management of UNITECH conference. The system functions as an environment for processing applications for participation in the international conference UNITECH, submission of papers and online reviews. The system is successfully implemented and integrated with full functionality on http://unitech.tugab.bg/.

Key words: Web-based System, Database, Management.

INTRODUCTION

UNITECH is an international scientific conference, which is held in Technical University of Gabrovo annually at the end of November.

Conference is established in 2001 and since then on its prestige grows by participation of scholars from Balkan countries, Baltic countries, most of European countries as well as 6 countries from other parts of the world.

Unitech is a forum on which the scholars from different scientific fields traditionally discuss their scientific achievements and problems separated in 19 thematic sessions.

At the beginning conference there were approximately 100 participants, but over the years their number grew at about 300 and more. Initially processing of the vast amount of information generated by participants was distributed to several assistants and was done by e-mail, spreadsheets and electron internal corporate document flow system but it was insufficient when the number of participants increased. That problem focused our attention to create a new automated information system to serve the whole process of conference organization.

There are several systems designed to organize and conduct conferences in Internet. Their main advantages are that they are gratis and free.

The main disadvantage is the fact that it is necessary a remodelling of the roles and processes in the organizational cycle of the conference to form suitable for application in the respective information system.

Lack of flexibility in already developed solutions led to the development of own WEB-based information system which covers the existing roles and follows the cycle of conference organizing.

The purpose of the current paper is to present the integrated web-based information system for management of the UNITECH conference.

EXPOSITION

Formulation of the system requirements

The following Web-based information system operations and requirements for conference management are determined:
- ➢ Support of database (DB);
- ➢ Possibility for creating profiles of the conference participants;
- ➢ Registration of application for participation in the conference;
- ➢ Notification of the authors about their paper reviews;
- ➢ Possibility for partial access to the system by different client groups;
- ➢ System extension and upgrade;

System and software implementation

Fig.1 presents the software architecture used for the connection of the client to the database.
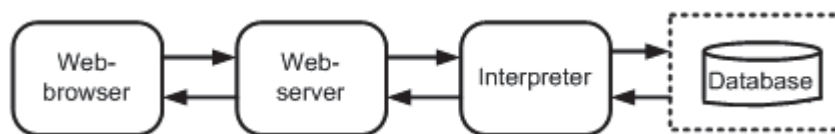
Fig.1. Diagram of the connection architecture for receiving and sending data by the system for automatic management of the conference

A single transaction to the database consists of the following steps:
1. The web-browser sends a request for a certain web-page;
2. The web-server processes the request, selects the needed file and provides it to the interpreter for processing and completion;
3. If the request demands a connection to the database (DB), either for saving or searching data, the interpreter implements the request by dividing it into separate operations;
4. The server storing the database processes the requests and sends the results to the interpreter;
5. The interpreter processes the request results, structures the results in a suitable for interpretation web-browser code and forwards it to the web-server;
6. The web-server sends the code to the web-browser, where the results are visualized in the form of a web-page.

Fig.2 presents a section (Log-in) of the software interface of the automatic system for conference management.
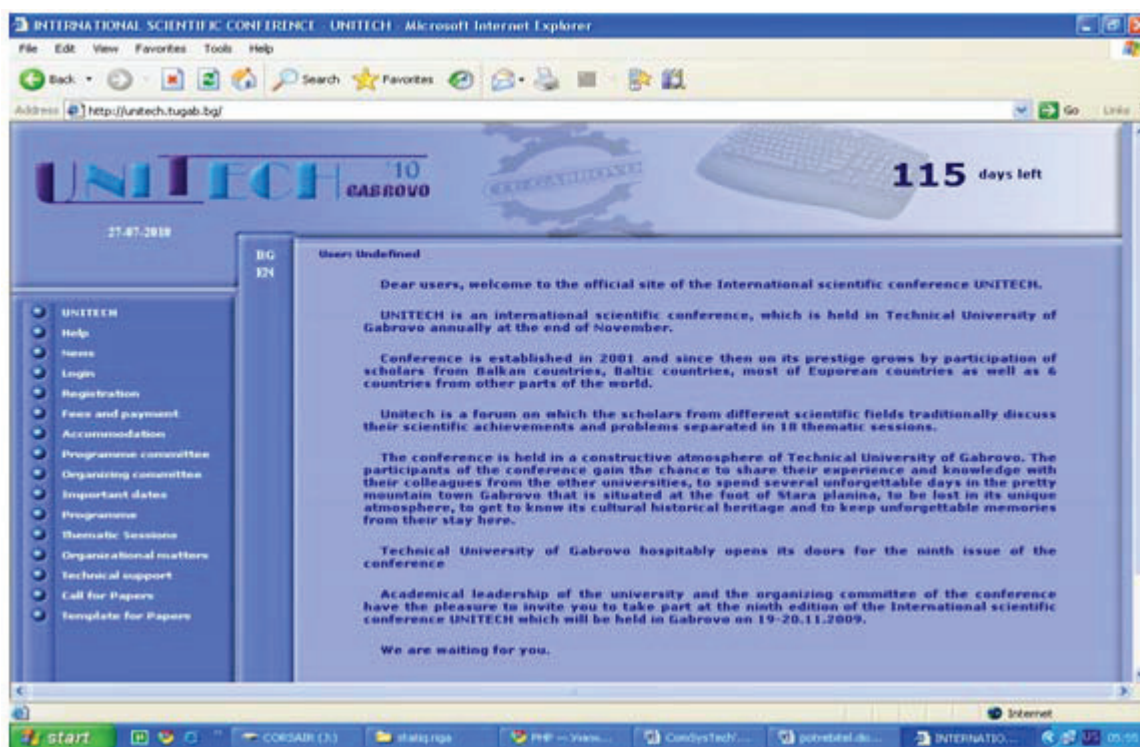

Fig.2. A section of the software interface

The software contains 5 main modules and each of them has a certain number of sub-modules. The diagram of the information system is shown in Fig.3.
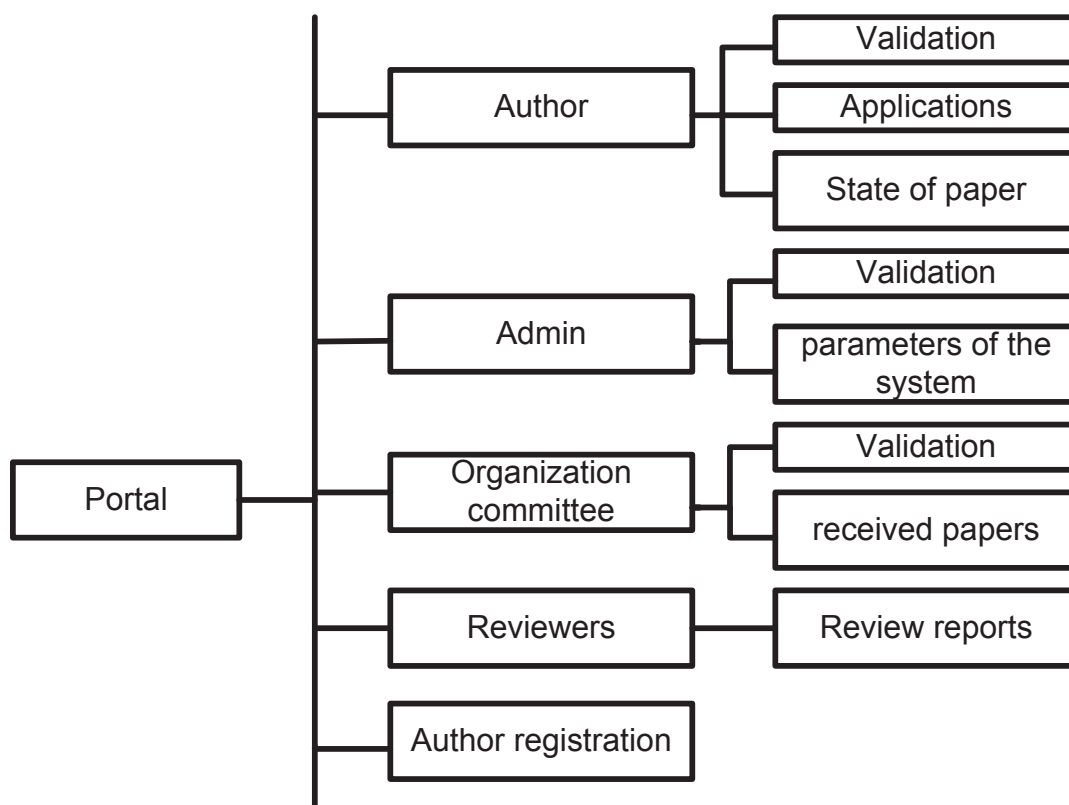
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                  │ Reviewers │Review reports│
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                  ┌────────────────┐
                  │Author registration│
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Fig.3. System diagram

The module "Log in" is used for identification and recognition of the clients in the system. It is used by all clients in the system for conference management.

The module "Author registration" is used for registration in the system of the paper authors. The following data for every author are required:

- ➢ „Name, Family name";
- ➢ „Title/Position";
- ➢ „Country";
- ➢ „Organization";
- ➢ „E-mail".

In the module "Applications", the authors fill in the registration form suited for application for conference participation:

- ➢ „Paper Title" – title of the paper in Bulgarian language.
- ➢ „Paper Title" – title of the paper in English language.
- ➢ „Paper Abstract" – abstract of the paper.
- ➢ „Section" – thematic section of the paper.
- ➢ „Telephone number" – telephone number of the author.
- ➢ „Name, Family Name"- name of the author; the name of the person entered in this field is considered the paper's first author.
- ➢ „Organization" - the organization, which the author works for or is a member of.
- ➢ „Coauthors Data - Name", 5 fields are available and a single field is used for specifying the name and title of a single author.
- ➢ "Coauthors Data - Organization", 5 fields are available; their fill-in is not mandatory; a single field is used for specifying the organization of a single coauthor.

Module "Admin" is used for entering the following parameters in the system:
- ➢ Important dates;

➢ Registration of reviewers in the system;
➢ News update for the conference;
➢ Paper template;
➢ Section creation.

Module "Organization committee" separates the received papers in different topic sections, appoints reviewers, which are pre-registered in the system by the administrator.

Module "Reviewers" provides a visualized interface for the reviewers to the assigned papers for reviewing. The reviewing is based on a few criteria:

➢ Topic originality;
➢ Applicability;
➢ Scientific value;
➢ Paper completeness;
➢ Paper structure;
➢ Paper formatting and style.

As a next step follows the final evaluation of the paper, as the following options are possible:

1. "Accepted" – the paper is accepted for participation in the conference, and if there are remarks on the paper, they are considered as recommendations to the author;
2. "Accepted (after considering the remarks)" – the paper is conditionally accepted. It can participate in the conference only after the remarks have been considered by the author and the paper is submitted again to the reviewer's attention;
3. "Rejected" – the paper is rejected and cannot participate in the conference.

The author receives a notification by e-mail, which provides the possibility for examining the review and considering the included remarks. Fig.4 shows a section of the module for paper reviewing.
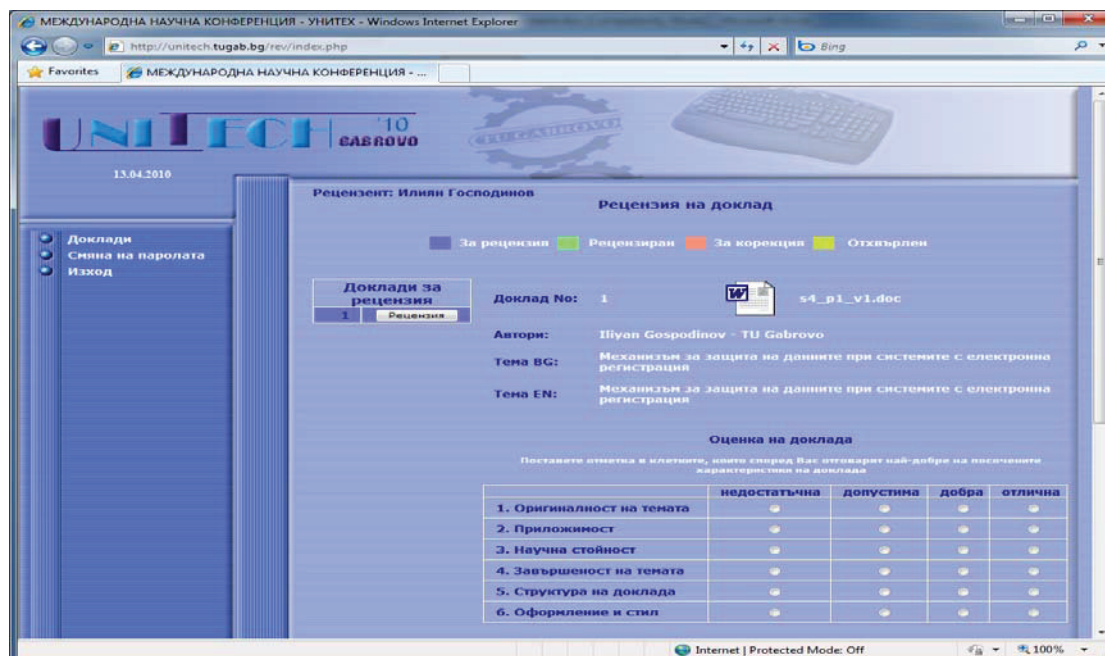

Fig.4. Section of the module of paper reviewing

CONCLUSION

The paper presents the Web-based information system for management of UNITECH conference. The system is fully functional and can be accessed on http://unitech.tugab.bg/, where it allows the following operations:

❖ Online registration for participation in the international conference UNITECH;
❖ Automatic notifications of the authors for events related to the conference and their papers;
❖ Paper acceptance for participation;
❖ Paper distribution to the reviewers.

The advantages of the developed systems are:

• Functional full coverage of the existing roles (administrator, organizer, organizing committee, reviewers, authors);
• Functional full description of the whole cycle of organizing and conducting of the conference (author's registration, submitting of the application form, paper's attachment, paper's review, publishing)
• Intuitive interface, free from unnecessary menus and possibilities;
• Dynamic addition of new roles in the conference cycle;
• Full description of the access rights to different parts of the system for each role; Easy to understand content in Bulgarian language (available for the admin unit);

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