

# ANALYSIS OF THE WEB BASED INFORMATION SYSTEM OF THE TECHNOLOGY SCHOOL "ELECTRONIC SYSTEMS" AND DIRECTIONS FOR IT'S DEVELOPMENT

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*The main goal of the present paper is to analyze the status and the problems of the Web-based Information system of the Technology School "Electronic Systems" associated with the Technical University of Sofia and to propose directions for its further elaboration and development. This system was developed and implemented two years ago. During the usage of the system several problems became evident. The information system was developed with the following basic modules – official part, student's module, teacher's module. The official part has the purpose to present the school with its history, development, professional education and so on. In the official part is described the way to apply for the school. Here the following can be uploaded - the list of candidates, their results in the exams and the final results. The student's module has been designed for the ability of the students to reach to the lecturers' information. The disadvantages in this module are that any lecturer can access the information uploaded from another lecturer with a password, no contents of the realized uploads, possibility to upload only in few fixed file formats. The Information system of the Technology School "Electronic System" is permanently in use and the present paper proposes decisions for it's further development and elaboration in the above listed directions.*

The Web-based Information system of the Technology School "Electronic System" associated with the Technical University of Sofia was developed and implemented two years ago by a team including two lecturers and five students [1]. The system was nominated and gained the first place for institutional site. The information system is permanently in usage by the students, lecturers and the administration of the school. The advantages of the usage of the Internet - based Information system of Technological school "Electronic systems" are:

- usage of a unified database in the different modules of the system for the different types of users;
- usage of a unified interface in the different modules of the system for the different types of users;
- the possibility of integration of new modules to the system;
- the adaptation of the system to the different types of users.

The information system was developed with the following basic modules – official part, student's and teacher's module, and administrative module [2].

During the usage of the system several problems became evident.

The official part has the purpose to present the school with its history, its development, description of the professional education and so on. In the official part the application procedures for the school are described. From text files - the list of candidates, their results in the exams and the final results could be uploaded. The advantages of the official part are the quick and easy access to each page and the ability for the applicants to look up the exam results and admission. The disadvantage of this module is the upload of data has to be done in a very complicated way.

The student's and the teacher's module realizes faculty and students communication, sending messages, information and curricula exchange, discussions forum, subject matter and course work. The student's module has been designed to assure the ability of the students to reach to the lecturers' information. The only way for the student is to download the information. There is no possibility to overview the information in advance. The teacher's part has been developed for the lecturers in order to give them ability to upload information - lectures, tests and other materials. The disadvantages in this module are that any lecturer can access the information uploaded from another lecturer with a password, no contents of the realized uploads, possibility to upload only in .few fixed file formats.

The Information system of the Technology School "Electronic System" is permanently in use and for it's further development and elaboration on the base of the above described analysis of it's effectiveness and functionality from the point of view of different users' types several new modules has to be developed. As first steps for improvement of the system the following has to be developed:

- to create a new type of users for the ex-students of the school and to develop new functionality for this group of users;
- to ensure elaborational approach for the data exchange between the Information system for student reception and the Internet based information system;
- to integrate to the Internet based information system a new module with knowledge and skills testing system;

## **1. INFORMATION SYSTEM FOR EX-STUDENTS OF THE TECHNOLOGY SCHOOL "ELECTRONIC SYSTEM"**

The ex-students module is one of the recently developed modules that have been integrated to the information system. Its purpose is to maintain a database with personal data concerning the ex-students. Access to that data have the students themselves and the administrative department of the school. In this way the relationship between school and ex-students and among the ex-students themselves could be maintained. On figure 1 the outlook of the information system is presented. The data concerning the ex-students is:

- name, class, graduation year, personal identification number and specialty graduated at the school;
- telephones including mobile;
- addresses;
- e-mail address;
- University and specialty graduated.

What became obvious during the integration of this system to the Web-based Information system of the Technology School "Electronic System" was that the addition of new modules is difficult and clumsy. Besides this the database structure has been changed [3].

**УЧЕНИЧЕСКАТА ЧАСТ**

Изход

- Съобщение до един потребител
- Съобщение до всички потребители
- Добавяне на потребител
- Изтриване на потребител
- Промяна на парола

Справки:

- По име
- По образование
- По месторабота
- По випуск и паралелка
- По последен Login
- Промяна на статуса на випуска

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Завършил	Специалност	Паралелка
2004 г.	Софтуер	а
ЕГН: 8506210120		
Месторабота: Там		
Дом. Телефон: 64564654654		
Сл. Телефон: 5446546546		
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Figure 1. Outlook of the Information system for ex-students

There is possibility to change the status of the students in 12-th grade to ex-students. In such way the personal information is taken directly from the existing

database. Later every ex-student can update the data for himself. The system is implemented and is in use by the ex-students of the school.

## 2. INFORMATION SYSTEM FOR APPLICANTS AT THE TECHNOLOGY SCHOOL “ELECTRONIC SYSTEM”

The next recently developed Information system is for applicants and students reception. This system has the purpose to serve the reception process of students at the school and to fulfill the data export to the Web-based Information system of the Technology School “Electronic System”. The existing system for applicants was very old. The navigation, the user’s interface and the data format were the not enough convenient. The main goal was to develop and implement a new Information system for applicants and students’ reception that will have:

- improved interface of the Information system for applicants and students’ reception;
- data format of the applicants files, halls for reception exams and students classification changed to the requirements of the Internet based information system;

The Information system for applicants has been successfully developed (Fig. 2). It is implemented and for a year is in use. The data for the applicants is input and on the base of the entered exam halls the lists of applicants for each hall are prepared. The exam results have to be entered and the list for reception of students is prepared.

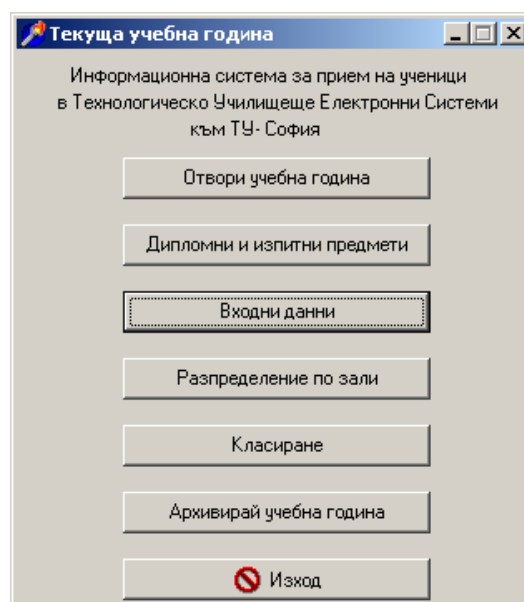


Figure 2. Information system for applicants

The navigation in the system, the user's interface are developed in an up to date style. The preparation of data for upload to the Web-based Information system of the Technology School "Electronic System" is done in a much easier way. The following lists are prepared for upload:

- list of applicants (applicants identification numbers, names) and the exam hall at the technical University – Sofia;
- list of applicants with their exam results ( first appear the results for the first exam – mathematics and at second step both results – in mathematics and physics);
- the list of the first hundred applicants with best results (in exams and from the graduated 7-th class).

### **3. INFORMATION SYSTEM FOR KNOWLEDGE AND SKILLS TESTING AT THE TECHNOLOGY SCHOOL "ELECTRONIC SYSTEM"**

The last developed module integrated to the Internet - based Information system of Technological school "Electronic systems" is the Information system for knowledge and skill testing. It contains two basic parts – the Lecturers' and the Students' (Fig. 3). The main components included in the Lecturers' part are as follows:

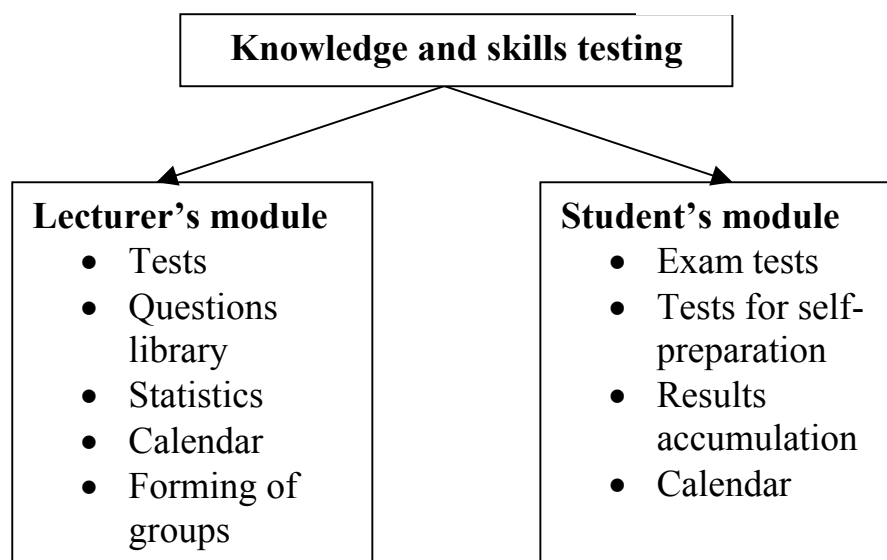


Figure 3. Modules of the Information system for knowledge and skill testing

- library with questions – contains questions, tests, test type; statistics;
- forming of students' groups for testing;

- calendar;
- printing services.

The main components included in the Students' part are:

- list of tests for examination;
- list of tests for self-preparation;
- calendar;
- results accumulation.

The Information system for knowledge and skill testing has been successfully implemented in the educational process.

#### **4. CONCLUSIONS:**

As result of the analysis of the Web based Information system of the Technology school "Electronic systems" the described above three new modules were developed and implemented. The work done has a significant influence on the educational process at the school. More and more lecturers intend to use the electronic way to help themselves in their job. For the further development and elaboration of the Internet - based Information system of Technological school "Electronic systems" the following directions are proposed:

- elaborated approach for information exchange between the different types of users ( for example between lecturers and students);
- students' access to the teachers' information defined by the student's status;
- improvement of the navigation in the Internet - based information system of Technological school "Electronic systems";
- improvement of data renovation in the official part of the system, more user friendly approaches.

#### **5. REFERENCES:**

- [1] Stoyanova L., Stefanova S., Basheva B., *Groupwork results in education in electronics*, Electronics 2003, Sozopol, 2003
- [2] Stefanova S., Tsvetkova Ts., *Internet - based information system of Technological school "Electronic systems" associated with the Technical University – Sofia*, Electronics 2003, Sozopol, 2003
- [3] Стоянова Л., *Структура на Web-базирана система за електронно обучение в технологическо училище "Електронни системи"*, Национална конференция ЕЛЕКТРОНИКА '2004, София, Май 2004