Abstract

of the master qualification paper about:

"Organization study of the web-access CAD (computer-aided design) Allted"

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Relevance

Now CAD developments are rather expensive from the financial point of view, and that prevents ordinary users from its usage in everyday life. The prices for some packages of modeling may range between several thousand and tens of thousands of dollars, and that decreases the circle of potential users. Plus there are problems with CAD software, for which the strict dependence on the hardware platform is characteristic, kind of operating system, programming systems, which were used.

The feasible way to eliminate these defects is a remote access to the package of CAD modeling and to the certain subsystems with the help of web-possibilities. The development of the given system can be realized with the help of the programming language Java, as far as exactly this language let combine the possibilities of powerful processing of complex computations with its robust execution, as well as - crossplatforming.

Aim

The aim of the given work is a study of the modern packages of the schematic design from the point of view of possibilities of its realization in C/S- or web-forms.

The problems, solved during the study

To achieve the formulated aim during the study the following problems were being solved:

- Possibilities' study of the existing packages of schematic design, its defects and advantages;
- Determination and analysis of requirements to the web-version of CAD system Allted;

- Selection of the toolkit to guarantee the independence of the program front end from the hardware-software platform;
- Structure formation of the front end Allted with the usage of modularity principle and of further modification possibilities;
- Selection of the toolkit to guarantee the information exchange between client and server;
- Development and study of program realization of the front end of C/S- version of the package of schematic design ALLTED, based on the developed algorithms and principles.

Achieved results

After solving the problems of this study, the author defends:
- User's graphical interface;
- User's authorization and authentication system;
- Algorithm of data communications between client and server;
- Developed front end of C/S-version Allted.

Scientific novelty

The scientific novelty of this study is a development of authentication and authorization system, which makes it possible to register on the web-server in easy for user form. The given system has rather simple structure, but at the same time it simplifies the development of queuing system on the back-end.

Practical value

The program realization of the front end of the package of schematic design ALLTED is developed, based on the proposed methods and algorithms.

Conclusions

1. This work gives review of the existing packages of schematic design from the point of view of possibilities of its realization in C/S or web-forms. Based on it, the usage of C/S-architecture with the possibility of the web-access to the packages of schematic design was recognized as reasonable.

2. It was made a review and comparison of realization tooling of the remote access to the packages of schematic design; it was also pointed out its advantages and defects. Based on the study, were chosen:

- Data communications' protocol - SSH;
- Programming language - Java.

3. As the result of the analysis of the applicable technologies and mechanisms, which let create the modular structure of application; it was chosen the paradigm JavaBeans from the family Java.

4. The program realization of the front end for the package of schematic design ALLTED was developed, based on the proposed methods and algorithms. It was given a brief review of the developed program realization.

The work contains 110 pages, 17 pictures, 1 table, and 25 sources.

Keywords: C/S-architecture, modular system, user's interface, package of schematic design, authorization and authentication system.