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**VIRTUAL LABORATORIES FOR TRAINING PHYSICS**

**Extended abstract**

The new informational technologies are the highly effective tool to give a new quality to educational process with less time and efforts of both teachers and students. Computerization of all components of human life, the rapid growth of the requirements to professional knowledge and skills of the modern professional force us to search for new ways of the decision such the education problems: why, what and how to teach. In particular, the possibility of realization the remote individualized training and virtual computer laboratory works on physics has appeared.

The need of conducting some virtual laboratory works is caused as lack of material and technical base of universities in the modern laboratory equipment, as well as their possible danger and high cost. The preliminary virtual duplication of the traditional full-scale labs, available for physics students, enables them to prepare better and more quickly to carry out educational experiments on the real devices in real laboratories.

We have developed the integrated complex of the distant learning and virtual laboratories on the disciplines of "General Physics", "Fundamentals of Electrical Engineering", "Fundamentals of Radio Engineering".

The architecture of the developed complex was chosen to be the application that provides a Web-based-interface. As a Web-server, the Database-server and the Operating system server there were selected the freely distributed the Apache Web-server, MySQL-server and OS Linux system, respectively.

To develop the virtual models of experiments, the Java platform was chosen. The model of each experiment is offered by Java-applet – the applied program on Java in the form of byte-code. Java applets, or otherwise fizlets, realize in a web-browser using a Java Virtual Machine (JVM) or in Sun's Applet Viewer, the autonomous instrument for testing applets.

The developed by us instrument for building virtual laboratories on physics are used successfully in the educational process in Kharkov Skovoroda National Pedagogical University and Karazin University. In future it is supposed to apply it in distant learning of students as well as the expansion of its use in the teaching of other subjects.

***Key words:*** information technologies, teaching, physics, remote education, laboratory works.

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