

CONCEPTUAL MODEL OF CLASS SCHEDULE INFORMATION SYSTEM WITH ACCESS VIA THE HTTP PROTOCOL

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Nowadays, in many industries there is a need to systematize, automatically process and store data that requires the use of databases. The use of modern communication systems provides the opportunity for both local and remote data access, primarily via the http-protocol. The widespread use of this protocol for the access to remote databases due to its universality and support on various platforms and operating systems. It can be used in local and global networks. It does not require any additional software with the exception of the browser. This allows to solve the compatibility problem and to provide access to the system from any workstation. This approach is effective in the development of databases for information systems in many fields, particularly in medicine, education and others, which are characterized by the heterogeneity of working places, frequent change of users and large territorial coverage.

One of the main problems of working with data is the development of the database structure. On its rational design will depend in the future the work efficiency. A lot of serious problems in the further work occur in the result of incorrect or not fully thought-out organization of data exactly at the stage of designing the database structure. This is because in the process of using the information system, which already contains a lot of data, it is needed to exert a lot of effort and apply innovative solutions in order to correct errors. This approach helps partially to solve the problem, at the same time causing the reduce of operation speed and resources use efficiency. That is why at the stage of designing the database it is needed maximum to take into consideration possible problems and various types of using of the data.

Today there are many software products that allow to obtain the access to remote databases. The special software (client) that runs on the user workplace, that is some integral part of the automated system, which is designed to solve problems of user is often used. This set of programs can be developed in different program fields such as C++, Pascal, Delphi, Visual C++ etc. Some manufacturers of datebases offer their unique open and powerful means of connecting to remote databases. In particular, Oracle corporation offers its unique product Net8 in order to connect to remote datebases, which can be used with a large number of network protocols, such as TCP/IP, OSI, IPX/SPX, and may be running under the widespread operating systems.

However, in the case of use of these technologies, problems arise with the compatibility of working places. Each of them requires own software on the client machine, that is, each of these systems must have separate organized module. In addition, the use of such software requires special training of users.

The technology of using the http-protocol for the access to remote databases is deprived of such drawbacks. The choice of specific solutions for developing web-interfaces depends on the information peculiarities and needs of work with it.

This article describes class schedule information system model in higher education institutions and organization of access via the http-protocol. The database relational model is proposed, the optimality of relationships creation between tables and queries that can be performed is analyzed. The requirements for the integrity and consistency of data are investigated. The choice of class schedule information system is caused by the urgency and nature of problems that arise in the course of its development, which fully cover features of the creation of databases with http-access to them. During the formation of the information systems class schedules in higher education institution it is needed to consider the organization of the educational process. In particular, lessons can be conducted by courses, streams, groups, subgroups, be held during the whole or half class, weekly or every two weeks (on the denominator or the numerator). Thus it is necessary to monitor the temporal coincidence of the classes on teachers and classrooms. Therefore there is a need for structuring the schedule, bringing it to a logical and unique view and the creation of an information system that would allow effectively to form the schedule taking into account all the above features. In addition, during the development of the database structure it is necessary to consider the fact that the access will be done through the http-protocol. Therefore, the formation must occur in such a manner that when it is needed without special difficulties to distribute its content in several places in the network and to obtain the access to data through a web-interface. It is also need to create a convenient and intuitive understandable for users without special preparation the web-interface to work with the schedule, which would give the opportunity to get a variety of information types about class schedule in the standard form.

The model of information system of class schedules in higher education institutions with access via the http-protocol based on the study is proposed. Information system is implemented at the faculty of electronics in Lviv National University named after Ivan Franko. The operation of user part of information system "Schedule" can be viewed on the Internet at the address <http://www.electronics.wups.lviv.ua/rozk/>. The database is created on the MySQL database, web interface is developed using the program language PHP.

The paper considers the model of the information system of the schedule of the educational institution and the organization of work with it using the HTTP-protocol. The queries that the user can create, rational choice and optimality of creation of tables and relationships between them are analyzed. The limitations that arise during the design of the structure of such databases, requirements for the integrity and consistency of data are studied.

Keywords - Internet, database, web-interface