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## DATABASE CONCEPT, RELEVANCE AND EXPERT SYSTEMS

***Abstract****: the article examines the main functions of the database, considers and describes the step-by-step design of the database.*

***Keywords****: Database, CASE-systems, MS Access, expert systems, knowledge base.*

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## КОНЦЕПЦИЯ БАЗЫ ДАННЫХ, АКТУАЛЬНОСТЬ И ЭКСПЕРТНЫЕ СИСТЕМЫ

***Аннотация****: в статье анализируются основные функции базы данных, рассматривается и описывается пошаговое проектирование базы данных.*

***Ключевые слова****: База данных, CASE-системы, MS Access, экспертные системы, база знаний.*

*Introduction*

In today's fast-paced world of technology, there is no industry without a database. The use of information systems and databases is becoming an integral part of the work process of a modern person or a developing organization.

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In this regard, the development of principles for the construction and effective use of the following technologies and software products remains relevant: database management systems, automated design CASE-systems, database management and protection tools, etc.

Every field needs processes such as data storage and operations. In this case, there is a need for a database.

A database is an objective form of creating and presenting a set of data (accounts, personnel and customer information, regulations, etc.). So, in summary, the database organizes these materials and processes them using a computer program.

Originally, the database was created for a single purpose – to use the data to organize. The database itself is a set of data that is structured, constantly stored, and updated and constantly replenished over time.

*The concept of database*. The modern information space consists of a mass of events, objects, and happenings. It occupies volumes that can contain all the data of a well-defined operating system, without storage, and in an unmanageable type. The purpose of the database is to analyze the data flow and their predictions, to organize the reports in the accounting system.

Databases are critical to the interoperability of systems that contain global information. For example, public resources or the banking system. The database represents a method of managing stored information and is applied in all areas of human life. In summary, a database can store a large amount of structured data and provide it quickly after a user query is entered.

*Main part*

Before developing expert systems (ES), it is important to understand and need to justify computer programs, the relationship between a machine and an expert system [2], modeling actions on recovery of problem situations and correction of different types of errors with the participation of a human expert. When developing an ES, it is necessary to take into account the main stages:

1. Database.

2. Machine logical conclusion.

3. Interface with user.

4. Client-server – in our case, the client is the interface, the server is the machine logical conclusion, the client that sends requests to the server regarding the execution of certain tasks in the inference engine or the provision of specific information contained in the database.

The server responds to requests sent by the client, and also performs the task (Figure 3).

In the steps described above, they are separated from the algorithms that use these steps. In this way, it is very convenient for the following reasons. The database is obviously, depends on the specific software product. Obviously, the most reasonable way to develop an expert system to control several applications or different equipment is to create a universal shell, after development it is supposed to connect for each application or equipment to the system and to the new database. Of course, all of these databases should have a universal format in order to avoid many problems (Figure 4).
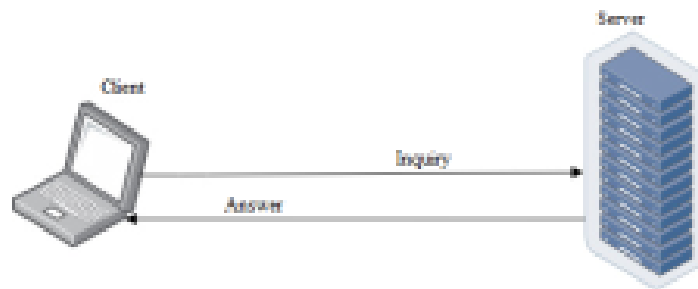


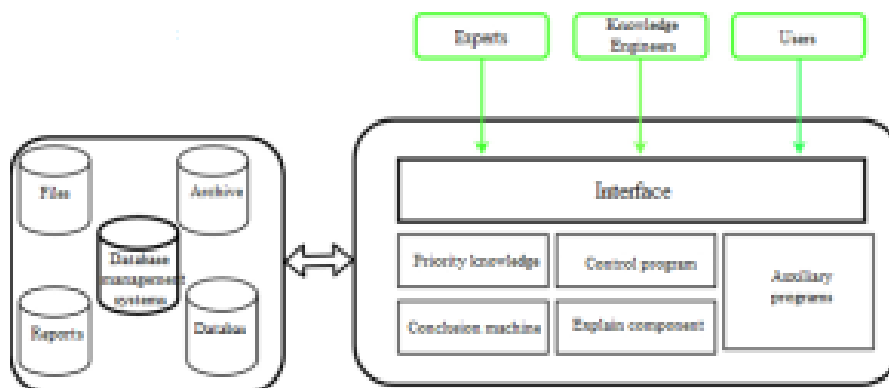Fig. 3. Interactions between client and server



Fig. 4. ES software

*Conclusion*

At the end of the article it can be concluded that the design of a database is a step-by-step process understood as an objective form of organizing and presenting a data set. Our proposed information and expert system makes it possible to analyze malfunctions of automatic and telemechanic devices, on analysis displays advice elimination malfunction.

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