

MODERN EDUCATIONAL SYSTEM AND INNOVATIVE TEACHING SOLUTIONS  
DATABASE AUTOMATION WITH HIGH-LEVEL PROGRAMMING  
LANGUAGES.

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**Abstract.** *The article is about database automation using high-level programming languages. It shows how these languages automate the processes of data entry, editing, and retrieval, and explains the advantages of automation, such as faster and more accurate work.*

**Keywords:** *automation, database, programming languages, data management, technology.*

Databases are one of the most important elements in the development of modern computer programs. They are used to store, manage and effectively use various data. MS Access is recognized as one of the most popular systems for creating lightweight and user-friendly databases. The Delphi 7 programming language, with its wide capabilities for connecting to databases, is also used in the development of high-level applications. This article discusses in detail the main processes of developing a database in MS Access and its connection with the Delphi 7 programming language.

MS Access is one of the most popular and easy-to-use database systems. With its graphical environment and convenient tools for creating tables, forms, reports, and modules, it allows programmers to create convenient applications with minimal technical knowledge.

Basic steps for creating a database in MS Access:

- **Creating tables:** A table serves as the basis for storing data. For example, a table called Users can be created with columns ID, Name, Email, etc.
- **Defining data types:** A data type (information) is assigned to each column, for example, AutoNumber for ID, Text for name and email, etc.
- **Defining primary keys:** A primary key is defined for each table, which is most often ID.
- **Adding data:** Primary data is entered into the table or special forms are created for input.
- **Defining Relationships:** If there are multiple tables, relationships between them, such as one-to-many, can be established.

Automation refers to the automatic execution of operations and processes that were previously performed manually by humans. In the case of databases, automation can include data entry, editing, searching, reporting, and data storage. Automation leads to increased speed, fewer errors, and improved internal data control. High-level programming languages are tools that allow computer programs to be written in a language that is more understandable to humans. These languages are easy to use and

have a wide range of capabilities for writing various programs. They allow complex processes to be performed automatically. With the help of such languages, specialists can automatically perform the processes of data entry, editing, searching, analyzing, and preparing reports without human intervention.

Database automation using high-level programming languages is an integral part of the development of information technology. It allows various data management processes to be performed automatically, accurately and with minimal time. In modern conditions, it is impossible to achieve a high level of efficiency without process automation.

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