

## **OVERVIEW OF THE ADVANTAGES OF ADO.NET**

ADO.NET is a data technology that is built on the .NET Framework. This technology provides a set of classes through which it is possible to send queries to databases, establish connections, receive a response from the database, and perform a number of other operations.

The basis of the database interface in ADO.NET is represented by a limited number of objects: Connection, Command, DataReader, DataSet, and DataAdapter. The Connection object is used to establish a connection to the data source. The Command object allows you to perform operations with data from the database. The DataReader reads the data returned from the request. The DataSet object is designed to store data from the database and allows you to work with them independently of the database. And the DataAdapter is an intermediary between the DataSet and the data source. Mainly, the work with the database will go through these objects.

ADO.Net offers performance benefits due to its disabled architecture, which is an extremely efficient and scalable architecture. The DataSet class in ADO.Net works in a completely disabled nature. This model allows the DataSet class not to know the origin of its data source, an unlimited number of supported data sources can be connected to the code without any hassle in the future.

ADO.NET applications can take advantage of the flexibility and widespread recognition of extensible markup language (XML). XML is a format for transmitting datasets over a network, so any component that can read the XML format can process the data. In fact, many classes in ADO.NET, like DataSet, are so intertwined with XML that they simply cannot exist or function without the use of this technology.

Moreover, it is important to note that there can be many database management systems. In their essence, they may differ. MS SQL Server, for example, uses T-SQL to create queries, while MySQL and Oracle use PL-SQL. Different database systems can have different data types. Some other points may also differ. However, the functionality of ADO.NET is built in such a way as to provide developers with a unified interface for working with a wide variety of DBMS.

However, in order to use the same set of objects for different data sources, it is required to use an appropriate data provider. The interaction with the database in ADO.NET is carried out through the data provider. Moreover, there can be its own provider for each data source in ADO.NET, which actually determines the specific implementation of the classes mentioned earlier.

The role of ADO.NET data providers is to allow direct data manipulation through SQL. ADO.NET includes a SQL Server data provider that is optimized to interact with SQL Server. It uses SQL Server's own tabular data stream (TDS) format to exchange information. This is skillfully done by the data provider Advantage ADO.NET.

Another advantage of ADO.NET is its rich object model. The entire ADO.NET architecture is built on a hierarchy of class inheritance and interface implementation. After following the necessary things in this namespace, the logical succession and support functions of the base class makes the whole system extremely easy to use.