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**DEVELOPMENT OF THE ADMINISTRATIVE APPLICATION  
FOR MANAGEMENT OF THE MAP OF POLOTSK STATE UNIVERSITY**

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*The object of development is an administrative application for managing the information content of the map of Polotsk State University. The aim of the work is the creation of an information system of Polotsk State University with an emphasis on displaying information on the map. The issues of designing and developing an administrative application for working with a database are considered.*

The goal of developing an administrative application for the map of Polotsk State University is to create a user-friendly application with a compact interface, through which you can easily work with the database, handle possible errors or completely avoid them.

To write the application, the .NET Framework version 4.5 was chosen. This choice is due to the fact that this platform is the main one for the operating systems of the Windows family, the most common OS family in the world. In addition, most people are visually accustomed to Windows, and it will be easier for them to perceive the application written for this OS.

For the immediate development of the application, the integrated development environment of Microsoft Visual Studio 2013 was chosen. It allows of creating various kinds of applications, as well as applying various modern technologies of this platform. The environment has a convenient code editor and a visual environment for developing a graphical interface.

Among all programming languages, the C # programming language was chosen. The choice was made on the basis of its advantages, namely:

- true object orientation;
- safe (in comparison with languages and C ++ ) code;
- support of event-oriented programming;
- "native" language for the application on the .NET platform;
- combining the best ideas of modern languages [1].

To develop the application interface, a graphical subsystem was used in the .NET Framework - Windows Presentation Foundation technology - a system for building Windows client applications with visually appealing user interaction capabilities using the XAML language. At the heart of WPF is a vector visualization system that does not depend on the resolution of the output device and is created taking into account modern graphics equipment [2].

WPF has the following advantages:

- independence from the screen resolution;
- good interaction with WinForms;
- Hardware graphics acceleration;
- the ability to declaratively define a graphical interface using XAML [3].

For the application to interact with the database, a special driver is used for the .NET platform for working with SQLite, which comes with the database itself from its developers.

To work with the database, classes were implemented that reflect the entities stored in the database. They contain the necessary fields and methods, thanks to which the "communication" with the database is carried out.

The creation of graphical forms of the application begins with determining their size and component content of the form, then creating event handlers that can occur when the administrator interacts with various components of the form.

The following components are available in the application being developed: TabControl – a linked set of tab pages; Button – command button; ComboBox is a combination of the edit field and the list, which allows you to enter data by typing on the keyboard or selecting from the list; StackPanel is a container for other components; Label – designed to display text information; TextBox – designed to enter data from the keyboard; Grid – container for other components, as well as other components.

During development, emphasis was placed on convenience and simplicity for the future user. The elements are arranged so that the user can immediately understand why they are there and how to work with

them. For example, elements of the Label type are placed next to the corresponding components, such as Text-Box and ComboBox, and the user immediately becomes aware that these elements are related and how to work with them.

The application consists of a main window and a set of child windows. The main window contains tabs for working with the most frequently used entities stored in the database: personnel, faculties, departments, public organizations, general departments and services. The appearance of the main window can be seen in Figure 1.

Fig. 1. Main window of the administrative application

Windows for working with other entities can be called up by selecting them in the upper menu. There are: cities, housings, hostels, historical and cultural places, places of leisure and administration. This approach simplifies the work with the application, making the more important and frequently used entities more accessible. For example, the appearance of the window for working with housings is shown in Figure 2.

Fig. 2 Work with the housings of the university

Thus, the administrative part for the map of Polotsk State University was designed and implemented. For the administrative application, an easy-to-use interface was developed that does not require additional training

and is intuitive, and a system of informing about errors or non-standard situations that help the administrator in work is implemented.

## REFERENCES

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