UDC004.658

AN ANALYSIS OF THE SUBJECT AREA AND FEATURES OF DATABASE DESIGN FOR THIS APPLICATION «VIRTUAL TOURS OF POLOTSK STATE UNIVERSITY»

ULADZIMIR MAHERAU, ARKADII OSKIN
Polotsk State University, Belarus

The object of development is an application for virtual tours of Polotsk State University. Objective - creation of information system of Polotsk State University with an emphasis on virtual walks step by step. Questions database design for virtual tours of Polotsk State University Information System.

To create an application for virtual tours, you must first design the database itself. For the convenience of the subsequent development of the projected base should be as simple to understand and normalized.

The database design is necessary to highlight the essence of which will be used in the information system. During domain analysis, which is determined by the breadth of all the information about the university, which can be useful to anyone for review, the following major entities have been identified:

- university housing (housing);
- university hostel (hostel);
- the city in which there are hostels and housings (city);
- university faculties (faculty);
- university departments (department);
- general departments and university services (university services);
- NGOs of university (public organizations);
- the people standing at the head of the university, faculty, department, service or public organization (people);
- places for leisure activities of students, such as a dining room, a gym, a library and other (leisure);
- places of historical or cultural value (history culture places).

Accordingly, for such a database should be developed special software, with which will work administrator. From this perspective, you can list the administrator functions:

- add / delete / edit the information about the cities in which the buildings are located university;
- add / delete / edit the information about the hostels;
- add / delete / edit the information about the university buildings;
- add / delete / edit the information about the university faculties;
- add / delete / edit the information departments of the university;
- add / delete / edit the information of the general departments and services of the university;
- add / delete / edit information on public organizations of the university;
- add / delete / edit the information about the people connected with the university and its subdivisions;
- add / delete / edit the information about the places of leisure located in of the university;
- add / delete / edit the information about the places that have historical or cultural value, and associated with the university.

To construct the database schema must define a set of relations between entities to be used in the database. It is also important that the relationship between the entities were performed entity integrity of the condition and the condition of link integrity. Conditions integrity entity is as follows: each tuple of any relationship should be different from any other tuple of this relation, that is, any relationship should have a primary key and referential integrity condition as follows: for each foreign key value that appears in the child relation, the parent respect there must exist a tuple with the same primary key value [2].

Selecting the database is one of the most important phases of system development. Among the many available database choice was made in favor of the MS SQL Server - a powerful relational database as its capacity will be sufficient for the system being developed: there is a need to use a client-server DBMS, for the developed system is used as an online service. The main advantages of SQLite can be identified such as reliability, performance, ease of use, integration with other products Microsoft. [3]

For proper operation and preserve referential integrity for the entities in the database triggers were designed to add / delete / edit that prevents the addition of base identical records and organize cascade delete without leaving stale links (Fig. 1).

The purpose of development of administrative applications for virtual tours of Polotsk State University is to provide a user-friendly application with a compact interface, with which you can easily work with the database, process errors or avoid them altogether.

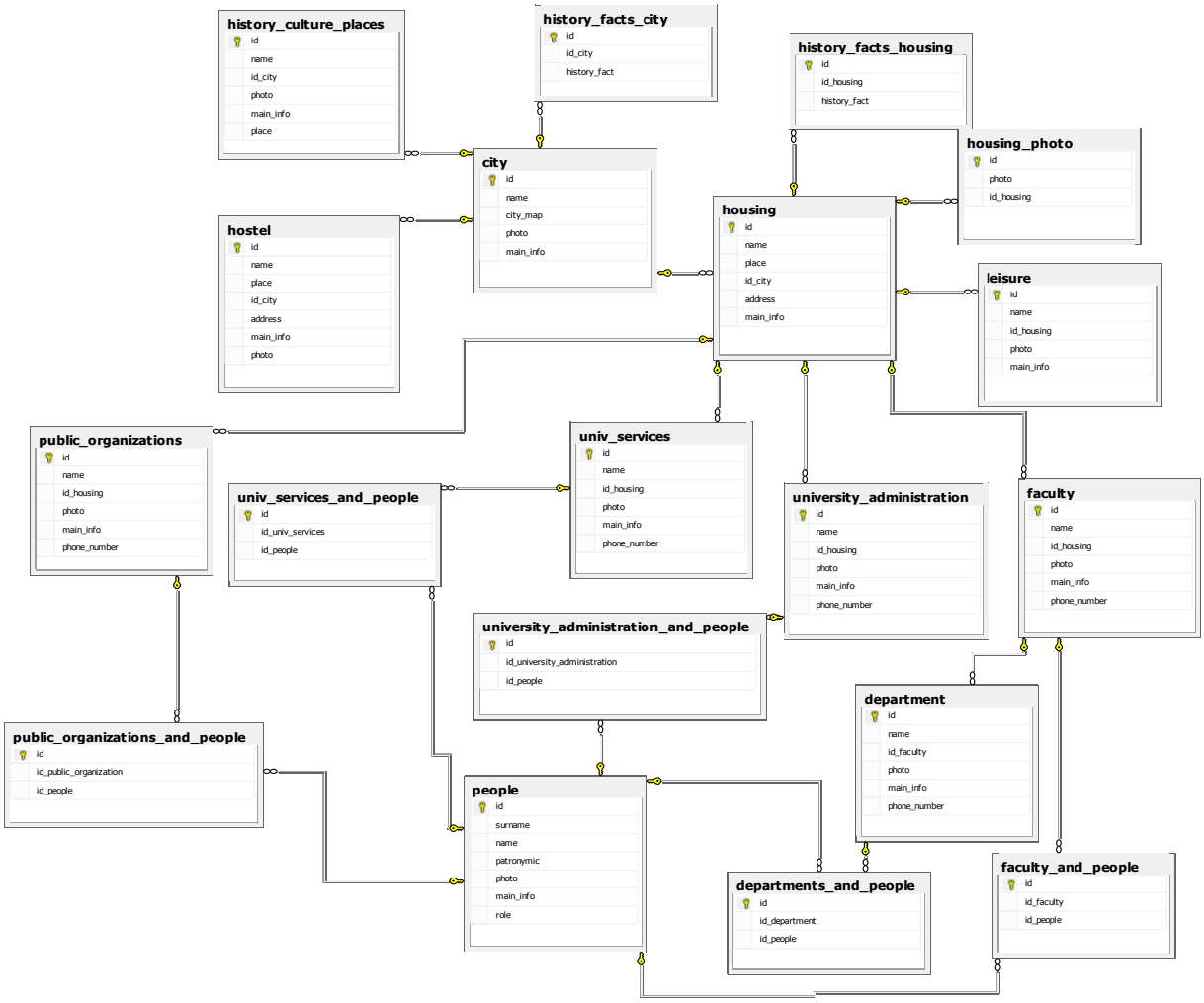

Fig. The scheme of designed database

For an application to write the .NET Framework version 4.5 was selected. This choice is conditioned by the fact that this platform is the main platform for Windows operating systems, the most widespread OS family in the world. In addition, most people are accustomed to the visual of Windows, and it will be easier to take an application written for this OS.

For direct application design was chosen integrated development environment Microsoft Visual Studio development. It allows you to create various types of applications, and apply a variety of modern technologies of the platform. Wednesday has a convenient code editor and visual environment for the development of graphical user interface.

Of all the programming languages was chosen the C # programming language. Selection was made on the basis of its advantages, namely:

– true object orientation;
– safe (as compared with the languages C and C ++) code;
– support for event - oriented programming;
– "native" language for the application on the .NET platform;
– bringing together the best ideas of modern languages [4].

As a result of this work an information database of PSU was designed . Designed database can create the basis for an information system for the virtual tours of Polotsk State University. There were also identified the starting point for the development of the application administrator, through which you can manage the database.

REFERENCES

1. Википедия - свободная энциклопедия [Электронный ресурс] – Режим доступа: http://ru.wikipedia.org. – Дата доступа: 30.01.2017.

2. Сайт Мурманского государственного технического университета [Электронный ресурс]. – Режим доступа: http://www.mstu.edu.ru/study/materials/zelenkov/ch_4_3.html. – Дата доступа: 30.01.2017.
3. Возможности и преимущества MSSQLServer[Электронный ресурс]. – Режим доступа: http://users.freenet.am/~tank1873/Microsoft%20SQL%20Server/benefits.htm. – Дата доступа: 30.01.2017.
4. Языки программирования [Электронный ресурс]. – Режим доступа: http://www.uzluga.ru/potrd/Программа+последовательность+инструкцийd/part-7.html. – Дата доступа: 30.01.2017.