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APPROACHES TO DESIGNING A GRAPHICAL WEB-BASED INTERFACE USING AN EXAMPLE OF A WEB APPLICATION "THE WEB PORTAL OF THE AMATEUR HANDBALL OF THE REPUBLIC OF BELARUS"

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The article presents the analysis of the technologies used in the implementation of web application interfaces. The example of the implementation of the web interface of one of the web application pages is given.

Introduction. Nowadays various software products with access through a web interface are called web applications or sometimes web-based systems. A web application is a client-server application in which the client acts as a browser, and the server is a web server. The logic of the web application is distributed between the server and the client, the data is stored mainly on the server, information is exchanged over the network. One of the advantages of this approach is the fact that clients do not depend on the specific operating system of the user, so web applications are cross-platform services.

The significant advantage of building web applications to support standard browser functions is that the functions must be executed independently of the client's operating system. Instead of writing different versions for Microsoft Windows, Mac OS X, GNU / Linux and other operating systems, the application is created once for an arbitrary chosen platform and is deployed on it.

The relevance of creating a web application is justified by the fact that with the development of portable computers and mobile devices, the client part of the web application can be used not only on stationary computers and laptops, but also on the mentioned mobile devices.

Means of solving the problem. The main approaches and means for implementing the interface of the developed web application covering the amateur handball of the Republic of Belarus are considered.

As an authentication system, the ASP.NET Identity system will be used, which allows to authorize through external services, manage roles to differentiate access to data, validate email and phone by SMS, and validate passwords [1].

To optimize the design of the site for various types of devices and to simplify the task of graphic design of the site, Twitter Bootstrap, jQuery, AJAX will be used.

jQuery is a javascript library, the use of which makes development of javascript code much faster and easier. In the recent past, this library allowed you to quickly develop scripts. The jQuery library helps you easily access any DOM element, access and manipulate the attributes and contents of DOM elements. Also, the jQuery library provides a convenient API for working with AJAX [2].

AJAX, or, Asynchronous Javascript And Xml, is a technology for interacting with the server without reloading the pages. Due to this, the response time is reduced and the web application interactivity more resembles the desktop. For example, you can leave comments on the page summarizing the results of the competition and immediately see the result of adding a comment without reloading the page. To exchange data with the server, a special XmlHttpRequest object is used, which can send a request and receive a response from the server. When updating data, the web page does not completely restart, and web applications become faster and more convenient [3].

Bootstrap is a framework that Twitter has developed. It is designed to facilitate the construction of a graphical interface. The library itself includes a huge number of elements such as buttons, web forms, navigation blocks, etc. If nothing is initially changed, the resulting form will be similar to that of many other developers using the same framework, but it should be taken into consideration that at the early stages of development an accurate interface can be obtained, and eventually it can be still customized. The source codes are also distributed by the MIT license, which allows free use and change of technology [4].

Interface design. The main site page contains news from the world of handball, at the bottom of the screen there is the information about the nearest birthdays of the players. At the top of each page of the site, using the master page, the navigation bar and registration, login, exit buttons from the personal cabinet can be seen (fig. 1).

When clicking on the "Registration" link, the user will be redirected to the registration page. On this page, the user must enter a name, a unique email, a password and a password confirmation. If the user fill in the forms correctly, they will be redirected to the login page.

In the personal account, the user can register new sports events if their email has been confirmed. To confirm the email, you must click the "Confirm email" link, after which an email with a further instruction will be sent to the user's email.
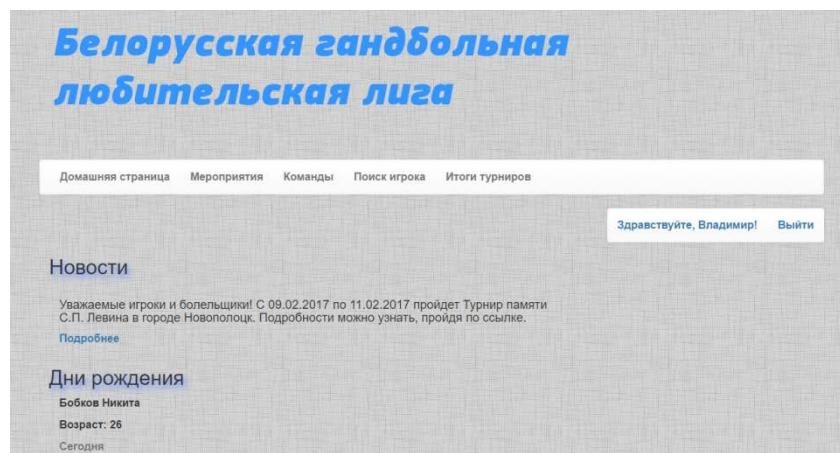

Fig. 1. Home page

On the right on the personal cabinet page, the user can change the avatar by downloading an image up to 4 MB in size. On the left on the personal cabinet page, the user can see a list of all the events that they have registered earlier.

If the user selects "Tournament totals" in the navigation bar, the user will be taken to the page with the list of the past sporting events. Selecting one of the tournaments from the list of events, the user will be able to view the results of the tournament with a photo and video report, and, if the user is authorized, to share comments at the bottom of the page. The dynamism of adding comments without reloading the page has been by obtained using the AJAX web technology for the form of adding new comments. When editing a sports event, the administrator, in addition to editing the basic information about the tournament, can attach a photo and video to the selected event, and use the wysiwyg editor's built-in page [5] to fine-tune the text description of the event.

If the user selects "Search for a player" in the navigation bar, the user will go to the page containing a table with a list of all players participating in amateur tournaments. The user has the following functionality on this page:

1 select the number of players displayed on the page;

2 sorting players by any field;

3 page output of the list of players;

4 dynamic search of the player on any of the fields.

This functionality has been achieved by using the jQuery-plugin DataTables [6], which in addition to these functions provides a wide range of settings and customizations for tables.

If the user selects "Teams" in the navigation bar, the user will go to the page containing the list of teams. When you click on the name of one of the commands, you go to the page containing detailed information about the selected team.

The conclusion. In conclusion, when developing web interfaces, it is necessary to take into account not only the beautiful external component, but also such important factors as "usability", ease of use, understandability for the user, browser independence, cross-platform, adaptability for various sizes screens, dynamism. And all these requirements can be achieved by using an absolutely small set of frameworks and libraries like Twitter Bootstrap, AJAX, jQuery in mentioned above case.

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