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**APPROACHES TO THE DESIGN OF THE GRAPHIC WEB INTERFACE  
ON THE EXAMPLE OF THE WEB APPLICATION**

**MIKITA BOBKOV, SERGEI SURTO**  
Polotsk State University, Belarus

*In this article we analyze the technologies used for implementation of the interfaces of web applications and give the example of the web interface implementation within a page of the application.*

**Introduction.** With the development of Internet technologies, more and more web applications with various subjects began to appear.

Web application is a client-server application in which a client is a browser, and a server is a web server. The logic of the web application is distributed between a server and a client, data storage is carried out, preferentially, on a server, information exchange happens on a network.

The web application consists of client and server parts, thereby realizing client-server technology. A client part realizes the user interface, creates server requests and processes responses from it. [1]

Development of web applications is a powerful tool, which allows to realize business ideas and to create successful software products. Web applications help to automate process of operation with large information streams (a client basis, goods directory, a branch network, documents and so on).

Front-end and back-end are terms in program engineering which are distinguished according to the principle of division of responsibilities between external representation and internal implementation respectively. Front-end is an abstraction, which provides a user interface. For example, in design of the software, the architecture provides to Model-View-Controller front-end and back-end between the database, components of data handling and users [1].

Development of web applications on the front-end and back-end system implies hierarchical division of creation process of a resource into two parts, into development of a user interface (frontend) and its program and administrative part (backend).

Now web applications are already comparable by their advantages to classical applications. But at the same time they can be available in any place and at any time on a computer, a pad or a mobile device and often have smaller cumulative possession costs. These features do web technologies very attractive to the solution of a wide range of tasks.

Task cures.

Let's consider fixed assets of implementation of a frontend of the web application on the basis of noncommercial transportations of passengers.

Front-end development is an operation on creation of a public part of the application, which a user contacts with, and functionality, which is usually beaten on a client side directly, contacts (in the browser). The frontend is a component of the application, which is responsible for an output of certain information to a user and upon making, to them, any actions in the web application, its interpretation in a look clear to the programs relating to a backend.

In operation Bootstrap – CSS/HTML a framework for creation of web applications which contains a row of advantages thanks to which it is considered to be the most popular of similar used. In other words, it is a tool kit for imposition.

Let's consider primary benefits of Bootstrap:

- operation speed – thanks to a set of ready elements imposition with bootstrap takes much less time;
- scalability – adding of new elements doesn't break the general structure;
- easy adjustability – editing styles is made by creation of new css-rules which are executed instead of standard;
- large number of templates;
- huge community of developers;
- wide scope of application – Bootstrap is used in creation of subjects for almost any CMS (OpenCart, Prestashop, Magento, Joomla, Bitrix, WordPress and any other), including one-page appendices. [3]

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Bootstrap uses the modern practices in the field of CSS and HTML therefore it is necessary to be attentive with assistance of old browsers.

Main Bootstrap tools:

- grids – in advance the given sizes of columns which can be used at once for example width of a column 140px belongs to the class .span2 (.col-md-2 in the third version of a framework) which can be used in CSS a document description;
- templates – the fixed or rubber document template;
- typographics – Descriptions of fonts, determination of some classes for fonts, such as a code, quotes and so on;
- media – are represented by some control of images and video;
- tables – means of design of tables, up to adding of functionality of sorting;
- forms – classes for design of the forms and some events happening to them;
- navigation – design classes for tab, tabs, pageness, the menu and a toolbar;
- alerty-design of dialog boxes, hints and pop-up windows [1].

Also in case of implementation of the web application JSP (JavaServerPages) – the technology allowing creating contents, which have both static and dynamic components, was used. The JSP page contains the text of two types: static basic data, which can be issued in one of the text HTML formats, SVG, WML, or XML, and JSP elements, which construct dynamic contents. Besides libraries of JSP tags and EL (ExpressionLanguage), for implementation of Java code in static contents of JSP pages can be used [1].

JSP is the platform independent, portable and easily expanded technology for the development of web applications. The main idea of JSP is very simple – the page is a template with already prepared HTML tags between which it is necessary to insert the necessary data.

JSP pages have extension of .jsp and are placed in the same place where normal web pages. The structure of such pages can consist of five constructions: HTML, comment, scripting elements, directives and actions. The JSP page in case of compilation will be transformed to a servlet with static contents, which go to the output stream connected to the service method. Therefore, in case of the first request this process can cause a small time delay. Scripting elements allow specifying a code in the Java language, which afterwards will become a part of a finite servlet, directives give the chance to control all structure of a servlet, and actions serve for the job of the existing used components, and also for control over behavior of an engine of JSP. For simplification of operation with scripts there are in advance defined variables, such as request, response, page Context, session, out, application, config, page, exception [1, 2].

The code of the JSP page is broadcast in servlet Java code by means of the compiler of JSP pages Jasper, and then compiled in byte code of the virtual machine Java (JVM). The containers of servlets capable to execute JSP pages are written in the Java language. JSP pages boot on the server and cope from structure of special Javaserpacket which is called Java EE WebApplication. Usually pages are packed into file archives.

Nowadays web technologies are quickly developing, they give to developers more and more opportunities, and their productivity is growing. As a result advantages of native applications decrease, and development goes to the web environment more and more. Web applications were strongly included into our life, and we use many of them even without thinking – the same search of Google or a mail service of Gmail.

During the development of web interfaces it is necessary to take into consideration not only good design which helps to concentrate on tasks of the user, but also to consider that any interface shall be intuitively clear for a user – he shall understand instantly which following step he can make. The web interface shall have such qualities as a crossp platform, adaptivity for different sizes of screens, dynamism and incorrect operation in different browsers.

It is obvious that there are more pluses from the use of web applications than minuses, and use of different frameworks and technologies allows reducing considerably time of implementation of web applications without loss of their quality.

#### REFERENCES

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