Automation of account of the hourly load of the department teachers is aimed at increasing comfort and reducing labor intensity when working with documents, saving resources spent on the preparation of new documents, as well as reducing the time required to search for the necessary document.

This program is not being too heavy, but providing a wide functional. Doesn't require the installation of third-party programs for full-fledged work. Interfaces are created to take end user a better perception and interaction. All this affects slightly system load, the speed of computer work and provide good impression after work with the system as a whole.

In accordance with the functionality of our application, there are two types of scenarios for its use. These scenarios differ in the type of end-user. In the first case, the user is a client who can handle some data. In the second case, the user is the administrator, who can also operate on the data, as well as regulate the work of users.

Load distribution is based on the list of subjects and the list of teachers defined by the user. Building this option allows you to distribute the teaching of one subject between several teachers, providing for all possible options for office work.

In the process of development, projects were assigned 2 roles:

User. In the process of the software complex using can get some information about the working process with the ability to add, modify or delete data.

Administrator. Can manage users access to the system, configure abilities of users to get or modify information.

The basic workflow can be divided into several parts. First the user enters or registers in the system. After that, the user has the ability to work with the data. It can add them by importing files of various types, or by making manual changes through the interface. After all necessary changes, the data is formatted in a single format for entering into the database. In the end, the user can output a report with the information he needs.

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DEVELOPMENT OF APPLICATION FOR HOURLY LOAD OF DEPARTMENT TEACHERS

In the development process a variety of tools have been used. Consider main of them. First of all, the programming language was chosen, this is Java. The choice fell on Java because it allows you to develop high-performance portable applications on almost all computer platforms. It has a

number of advantages, such as full independence of the bytecode from the operating system and equipment, as well as a flexible security system, in which the execution of the program is completely controlled by a virtual machine. At the moment it is one of the most popular programming languages. Java is an indispensable tool for developers and has opened up huge opportunities for them. Its community is growing and this allows it to develop as quickly as possible.

For web development HTML, CSS and JavaScript were selected. HTML5 is a tool for organizing Web content. It is designed to simplify Web design and Web development through a markup language that provides a standardized and intuitive user interface. CSS is a formal language for describing the appearance of a document written using the markup language. It is mainly used as a means of describing, visualizing the appearance of web pages written using HTML. JavaScript is commonly used as an embedded language for programmatic access to application objects. The widest application is found in browsers as a scripting language for giving interactivity to web pages.

In addition, the Apache HTTP Server and the MySQL database-based relational database management system were used for operational work with input and output data.

In order to facilitate the development of the project, some design patterns were used.

First of all, the MVC pattern was used. The choice of this pattern is explained by the fact that it is ideal for the implementation of our project. It allows you to separate different layers of development, so you can make changes that will not affect on the entire application. In our project, it helped to produce a separate development of the interface, the controller unit and the part with data storage. Since a part that works with the data and transforms it in different ways (the model) was developed, then it was possible not to worry about the non-availability of a view layer. This layer was added later, when it became clear that all internal processes occur correctly and produce a valid result. The same goes for the controller module that connects these 2 layers.

The second chosen patterns were Factory and Singleton. Factory design pattern provides an interface for instantiating a class. At the time of creation, executor can determine which class to instantiate. Singleton design pattern ensures that a single-threaded application will have a single instance of a certain class, and that provides a global access point to that instance.

During the course project implementation was automated the accounting of the hourly load of the department teachers. The project was written in Java with using various frameworks to achieve the best user interaction with the system. All the necessary functionality was implemented with the goal of maximum performance, speed and quality. The user interface was designed

in the most minimalistic style to improve the understanding of information and user experience. The project fully meets all requirements.

For testing was used JUnit, which allows us to test each program module of our project. During the tests, the application worked stably, which indicates the proper implementation of design patterns.

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DEVELOPMENT OF PROJECT FOR PROMOTION OF A PAINTING EXHIBITION

This project is the website for promotion of the exhibition of works of painting. And therefore on this website works of painting of the artists are presented in digital form. There are four roles for interaction with this website.

The target audience of the project is first of all artists who want to show their works to the general public, and secondly art connoisseurs or just curious people, who will be interested to look at the presented works of painting.

The relevance of the development of this website seems to be quite high, since there are not too much high-quality projects in the «by»-segment of the internet.

The purpose of developing this project for promotion of the exhibition of works of painting is to automate the filing of applications of artists, who wants to demonstrate their work to the general public in digital form.

Almost all of the alternative solutions have a number of shortcomings. First of all, none of them allows to perform the exhibition of paintings in digital form. Also alternative websites are too heavy with wide functionality and most of the providing functionality is not required for our task. Some of them are additionally required the installation of third-party programs for full work. Users may experience problems with perception and interaction with their interfaces. All of this affects the speed of work in general.

The main goal of this project is to create a better application in accordance with the modern standards and technologies, excluding extra functionality that may cause loading the system.

There are four roles for interaction with this website:

– administrator (or admin) – modifies the attributes and appearance of the website, manages all of user's data, assigns moderators;

– moderator – examines the applications filed by artists, and accept or reject these applications;

– user (or registered user) – submits or withdraws the applications for adding of the paintings for the exhibition;

– guest – can visit the open sections of the website.