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Website design and creating with Joomla CMS

The components and modules

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The goal of this final year project was to adjust and improve the company website built during the work placement period. The website would provide information for visitors of a company and its services. The project would include a functionality where users can get static information as well as leave comments and feedback, resulting in communication and social functions.

The project was to build a content management system (CMS) website using the Joomla CMS that is an open source software. The project required knowledge and skills in different areas of web development that was obtained during the work placement and developing websites aside studies. In this project PHP language, MySQL database, HTML language, CSS language was used to build website and modify code to suit the requrements.

In this thesis aside from Joomla CMS different content management system tools were considered such as Drupal and WordPress. Also hosting and server solutions were discussed. The configuration of a back-end and front-end was covered in this thesis as well as some issues faced when troubleshooting. The result of the project was to create a website using components and modules using Joomla CMS.

Many new skills were improved during this project. Planning a project model, managing time schedule, meeting the requirements of the project, configuration the Joomla CMS and the server from the scratch.

Keywords	Joomla,	CMS,	web	development,	open	source,	content
	manager	ment sy	stem,	HTML, PHP, C	SS		



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Abbreviations

API Application Programming Interface

CMS Content Management System

CSS Cascading Style Sheet

DBMS Database Management System

FTP File Transfer Protocol

HTML Hypertext Markup Language
HTTP Hypertext Transfer Protocol
PHP Hypertext Preprocessor

RDBMS Relational Database Management System

SEO Search Engine Optimization
SQL Structured Query Language

WYSIWYG What You See Is What You Get



1 Introduction

This final year project is based on a summer work employment at "Klab-tur" company, located in Saint Petersburg, Russia, as an IT department computer specialist. Aside from configuring computers and helping regular users with problems they encountered, I developed a website to attract customers using the content management system. The goal of the project was to build a website. The idea was that the information on the website would be visible to everyone who wanted to see what the company offered and see people thoughts improving the service, writing comments.

The target users of the website are clients, students, local workers, and tourists. The website address location is povorot.net63.net. The main functionalities include an overview information, prices, social function, events functions, poll function and question and answer function.

This Bachelor's thesis focuses on the application of the Joomla content management system (CMS), configuring PHP script language, MySQL database, Apache server, and a website design. It also examines how a new person in web application development could get started and construct and design the website with Joomla, as well as discusses major differences between the most usable and open source CMS – Joomla, Drupal and WordPress.

In this thesis, the theory aspect of CMS systems is covered in chapter 2, which describes the benefits utilizing popular CMS over the writing of the website from scratch. Then the features and comparisons of popular content management systems software are considered. The development of the technology prior to CMS is presented. Finally thesis also discusses the benefits of Joomla website for small businesses, as well as site security.

In chapter 3 the project development stages are presented, including the concept and structure, also covering the design of the website layout and pages look.

Chapter 4 explains the configuration of the main components and the website tuning to develop the design and layout as planned.

Next chapters are the empirical part of this Bachelor's thesis – the final outcome of the project that concludes the Joomla system overview and also points the view after work being done, as well as the website testing and troubleshooting.

2 Content Management System for the Website

It happened that in the early stages of the development of the Internet, website development was to create a file structure of HTML pages and to place them directly on a server in addition to a variety of additional data elements, such as navigation or links, which had to be made on each page manually. At that time, it was time-consuming task that people would think about its automation, because sites for the most part were small and dedicated to a small audience. Users of Internet were significantly fewer [1].

However, soon the amount of information began to grow exponentially, increasing the number of site visitors and, increasing labour costs for maintenance of the site up to date. The creator of the website was forced to spend most of the time not on direct placement of the article or publication, but on making certain related information, such as references to this article, creating a navigation menu, and the items were constantly present in certain positions on the site [4,4-5] (e.g., information about the author).

A way out of this situation has been the creation of a certain class of programs that would perform some routine operations, not directly associated with the creation of articles. Such systems are called Content Management Systems (CMSs). For simplicity they are called site engines [1].

Among programmers they has long been a tradition that each new area in which programs were being implemented, a new programming language is created, which is most comfortable for this area taking into account all its features. For the Internet at the moment such a language is PHP [10,39]. It is supported by virtually all modern hosting companies. It was developed for the integration of multiple databases, it is free, open source and the number of programs (otherwise referred to as scripts) are sufficiently large.

Content Management System (CMS) is a computer program or system used for organizing and sharing the process of creating, editing and manipulating text and multimedia documents (content) [1].

The CMS is a software package that allows one to automate the process of managing the site as a whole, and entities within the site such as the page layout templates, data structure, information content, users and permissions, as well as opportunities offered with additional services: mailing lists, keeping statistics, search, means of interaction with users and other features [4,97-99].

The need for management systems came at a time when the amount of content on websites had exploded. This led to the fact that the traditional manual technology and support of websites, when the site consisted of static pages and a set of additional specialized scripts became irrelevant for a quickly changeable business environment.

Entering data on a site requires knowledge of technologies: HTML, CSS layout, site structure changes associated with a cascading change of large amounts of connected pages [5,8-9]. Various automated mechanisms such as guest books and news feeds, embedded on websites as separate scripts are usually written by different specialists, ceasing to satisfy safety requirements. Therefore there is a need in the unification of software solutions, and separation of the design and content in two independent components.

The CMS is widely used when creating websites and designing them. The main function of CMS is the ability to organize and store a variety of information of various formats. Before the invention, when designing a website all changes had to be personally entered into the page code, and now one can simply make all of the changes in a special form, and they appear on the website as user saved the document. Nowadays on the Internet CMS is used most widely to create online shops and catalogues, blogs, magazines, portals and forums [3,33-35].

2.1 Working Principle of CMS

The CMS divides the website into two components: design (appearance of the site as a whole, individual pages, specific pieces of information) and content. Website design is included in the templates and varies considerably less than content [1].

Content management systems solve two main tasks. From a user perspective it is a tool that allows administrator to post news, post the new pages on the site and perform other operations with the content via a user-friendly interface. The regular user can create an article easily; it can be a user with no technical background. From the point of

view of developers it is a tool that speeds up the creation of complex sites, allowing the assembly of pre-engineered solutions, changing logic and design to a certain extent.

All variable data is stored in the database for example in the form of pictures, texts and tables. When a visitor views the site pages, the web server requests the information on the database server and generates the desired web page. Thus, to change the information on the website, it is necessary to change the information in the database.

CMS provides an interface to the database. The person responsible for the content of the website, using a standard browser, comes to the server system, and using a simple web interface, edits the information in the database. To begin editing the site, one does not need to know HTML. The system interface is designed for inexperienced users. For changes and additions to the website sections, articles, or product descriptions, one can download price lists and other documents in various formats with relatively simple interface features of CMS. For advanced users the ability to add code is provided in HTML and PHP format.

2.2 Review of Existing CMS

Currently, there are many different CMSs, each designated for a specific, depending on its functionality. Examples include: Joomla, Drupal, MODX, Wordpress, MaxSite, DLE, Satellite-X. One of the most common CMSs, on which programmer can create functional and easy manageable websites without serious financial costs are Drupal, Joomla, Wordpress, Typo3, Oxite.

There are plenty of different CMSs, so giving a fairly comprehensive overview of the current CMS set is not possible. Some of the most popular and common CMSs will be discussed, focusing on free open-source CMS.

2.2.1 WordPress

WordPress is very popular in the world of CMS, especially among newcomers. WordPress allows user to create various types of sites, such as informational, news or blogs, but still, when we use WordPress, we imply that it is, first of all, the engine for blogs [2]. In the class of blogs the WordPress engine is the undisputed leader. Thus it

allows creating one's own blog quickly, or a simple website, which will allow user periodically add new articles and will allow users to comment on them.

Many additional modules are written for WordPress and various templates are available. Of course, user can make changes to the design himself. Sites made with WordPress may look like the one shown in figure 1.

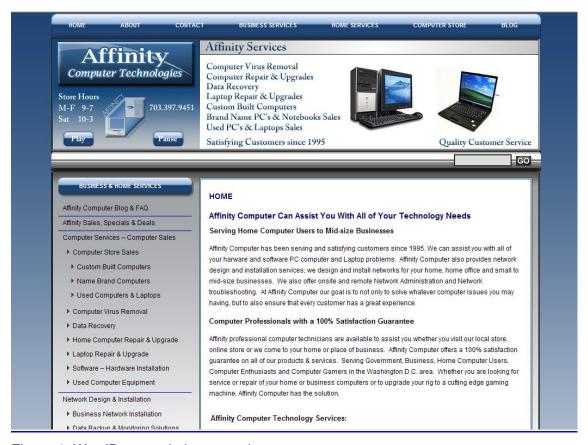


Figure 1. WordPress website example

Disadvantages of WordPress are typical for the popular CMS: not fast work of the website, the possibility of failure at high traffic and periodic detection of errors in the script. Therefore, some users even prefer creating blogs with yet simpler and easier engines. Obviously, WordPress is hardly suitable for a complex site with great functionality, such as a portal or an online store. For creating such website, the developer pay attention to more versatile CMS. WordPress requires PHP and MySQL.

2.2.2 Joomla

Joomla is another popular CMS. It is somewhat more complicated to learn than WordPress, but has a large scope. Joomla is designed to work with a huge number of modules, including forums, chat rooms, blogs and online stores, so it can be used safely to create complex multifunctional websites. Generally, Joomla can peform a variety of websites, both simple and complex. It is a versatile CMS [7].

Also for Joomla there are a huge number of templates and the ability to create or select a design for the site, webmasters who can develop a special script is practically unlimited. An example of a Joomla website is shown in figure 2.



Figure 2. Joomla website example

Just like WordPress, Joomla can encounter speed problems at high traffic. Despite this, Joomla is considered one of the most popular CMS.

2.2.3 Drupal

Drupal is a CMS suitable for the creation of forums, blogs, online encyclopedias, and online communities. However, this system is unlikely to be called universal. Comparing Drupal with Joomla and WordPress, it can be definitely be the CMS is not for those who want to create a website quickly and easily [2].

Drupal is more convenient for those who are willing to sit down and carefully build the structure of the site to get what they need, but not for simple solutions for beginners. For Drupal modules and templates are available, but their affordability is less than for Joomla. An example of a website made with Drupal is shown in figure 3.



Figure 3. Drupal website example

It can be concluded that each of the examined CMSs has a number of advantages and disadvantages, but primarily its specific purpose. WordPress is at first a blogging CMS and creating some other type of site with it is difficult. If user wants to make a professional website in CMS, which is developing steadily, as well maintained,

continuously updated, owns strong modularity and a wide range of add-ons, then the best choice is to use Joomla and Drupal.

Joomla is simpler and easier to learn and manage, but Drupal, although more complex and not so beautiful, and although a little harder to learn, is almost 100% flexible. Therefore, Adobe has chosen Drupal to build their test Flex sites on its basis. However, that there are strengths in Joomla, which sometimes makes it more attractive in some cases. Joomla is good for corporate websites and classic portals. Basic delivery is rich in functionality [7]. Many components are sold; it has a positive impact on their quality. Drupal is adapted for communication websites. It has built-in forums, comments, blogs, and module for the publication of books. Although both CMSs can be used to create almost any websites, in some cases the system will meet the developers' requirements, and in others cases programmers have to overcome many difficulties. One of the major limitations of Drupal is that it has a weak capacity to use the PHP. The object-oriented model is present in Drupal, but in a slightly unconventional form for PHP. Due to extensive use the Drupal database may be too heavy for the resources available on the cheap price rate plans, and hosting providers, although for small websites with the attendance of hundreds or thousands of visitors these resources will be sufficient [2].

Figure 4 illustrates the market share of the most popular CMS used around the world to create websites.

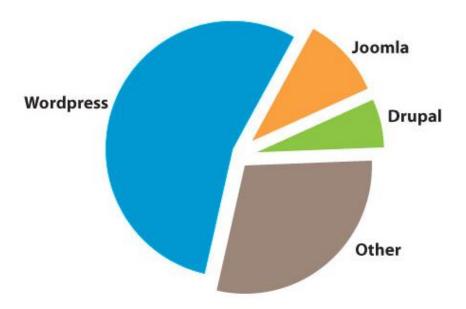


Figure 4. Market share of top Open Source CMS [2]

As can be observed from this pie chart the WrodPress is the simplest CMS takes the most of Internet users' attention constructing a website, whereas Joomla and Drupal occupy almost the same portion of a chart. The other CMS platforms are either proprietary or ordered for company-specific use.

2.3 Investigation of Joomla Working Principle

Joomla is a content management system written in PHP and JavaScript, and uses MySQL database as a repository [4,36]. The CMS Joomla includes a variety of tools for creating a website. An important feature of the system is the minimal tool set at the initial installation, which is supplemented as needed. This reduces unnecessary clutter in administrative panel elements and also reduces the load on the server and saves space on the hosting [4,307-308]. Joomla interface allows developer to display the front-end and administrative part in any language. Extensions directory contains many language packs that are installed with the administration tools [4,38-39].

The main features included in Joomla are the following:

- The functionality can be extended with additional modules (extensions, plugins).
- Safety module for multi-level authentication of users and administrators.
- The template system allows programmer to change the look of the website easily.
- Customizable layout modules, including left, right and center blocks menus.
- Modules, components, plug-ins, templates, can be written by yourself, and placed in a structured extension directory or edited as an existing extension [4,61].

2.3.1 Joomla Functionality

Joomla system consists of blocks:

- Core the system itself.
- Database stores various data and is maintained automatically.
- Extensions installed units add different functionality to Joomla. These include: templates, modules, components, plug-ins.

- Templates website appearance, determine how the site looks and where each module is located.
- Modules a small block on the website, displayed on a predetermined position in a pattern that extends the capabilities of components and represents a small piece of information in addition to the main part (central part of the website).
 Joomla has several built-in modules such as: menu, online users, voting, search form and others.
- Component a key element of Joomla, displayed at the center of the website and implements the main functional extensions.
- Plug-in a piece of program code that runs when in the system a certain predefined event occurs. For example, the visual editor is a plug-in, which is executed when the Joomla event onGetEditorArea occurs. Using a plug-in allows one to change the result outcome of the system depending on the presence of certain plugins.

2.4 MySQL Database System

MySQL is one of the most popular and widely used Database Management Systems (DBMS) on the Internet. It is not designed to handle large amounts of information, but its application is ideal for websites, both small and large [10,41].

MySQL has a good performance, reliability and flexibility. Usually it does not cause big problems. Support for the MySQL server is automatically included in the supply of PHP [10,42]. Another important factor is that it is free. MySQL is distributed under the general license GNU (GPL, GNU Public License).

Earlier, for a long-term storage of information we worked with files: we put them in a number of lines, and then retrieved them for future work. The task of long-term storage of information is very common in programming of web-based applications: counting people visiting a website, storing messages in the forum, remote management of content on the website.

Meanwhile, professional techniques for working with files is very time-consuming: it is necessary to take care of writing the information about sorting of the data and retrieving them, while we should not forget that all of these actions will be performed on the server of the host provider, where very likely there is one of the modifications of the Unix machine - hence the need to care about the access rights to files and their placement. At the same time the amount of code increases significantly and to make a mistake in the program is very simple [10,245-250].

All these problems will be solved by the use of a database. Databases themselves are concerned about the safety of information and its sorting and allow programmer to retrieve and post information using a single line of code. The program code using the database is more compact, and much easier to debug. Also, the speed limitations should be taken into account – accessing the information from the database is much faster than from files.

2.5 Apache Web Server

The Apache HTTP-server is the so-called free web server which is cross-platform software. Apache supports the following operating systems: BSD, Microsoft Windows, Linux, Mac OS, BeOS, Novell NetWare.

Reliability and configuration flexibility are the main advantages of Apache. With this software, user can perform the connection of external modules that are used to provide the data access, modify error messages and use the database for user authentication. Apache supports IPv6 [10,938].

2.6 Publishing the Website Online

In order to make a website available to the public programmer needs to do two things: assign it a unique name – domain and hosting a website on a server. Before going into details relating to the publication of sites, the following concepts need to be studied [5,383].

A web server is in fact an ordinary computer connected to the Internet 24 hours a day running on special software. However there are some differences to an ordinary home computer [11,229-231].

First, a normal server should run smoothly without rebooting and being off-work for many days and it means that it must have an uninterrupted power supply, reliable hardware and being serviced by a technician if needed. Then it must provide a storage of huge amounts of data, and handle thousands of user requests, which in turn places high demands on the performance of the server [5,384]. It must be securely protected from the attacks of viruses, and hacker attacks. Most important that server must have a backup system in case of a failure. All of the above requirements for a web server bring us a need to rent a hosting [11,229-231]. Hosting is a paid or free service of website placement on a professional webserver.

3 Project Requirements Specification for the Website

3.1 Concept

The aim of the website concept was to create a simple website for local workers, tourists and people who want to have lunch during the day or make a reservation for a celebration of the birthday party or some other event. In the morning working people come to have breakfast before going to work as well as some coffee with buns and rolls. The cafeteria menu is conveniently located in the left column with section separation (Main information, menu, contacts, and feedback). The main food menu is placed under the main banner on the top for easy navigation.

It is important to make a positive first impression. Typically, about 80% of all users immediately leave the site without having spent more than 5 seconds and view the entire page, because it is too complicated to navigate or there are many popup windows flashing. Engage the user to work comfortably with a website. Of course, a pleasant logo and other images are important, but we should concentrate more on our main goal to show the products and services we offer. Easy navigation for a user is the key to offer a user a hassle-free accessibility to our products, contacts and open hours.

3.2 Structure

The website structure is mostly linear and can be represented by the flow chart shown in figures 5,6,7,8.

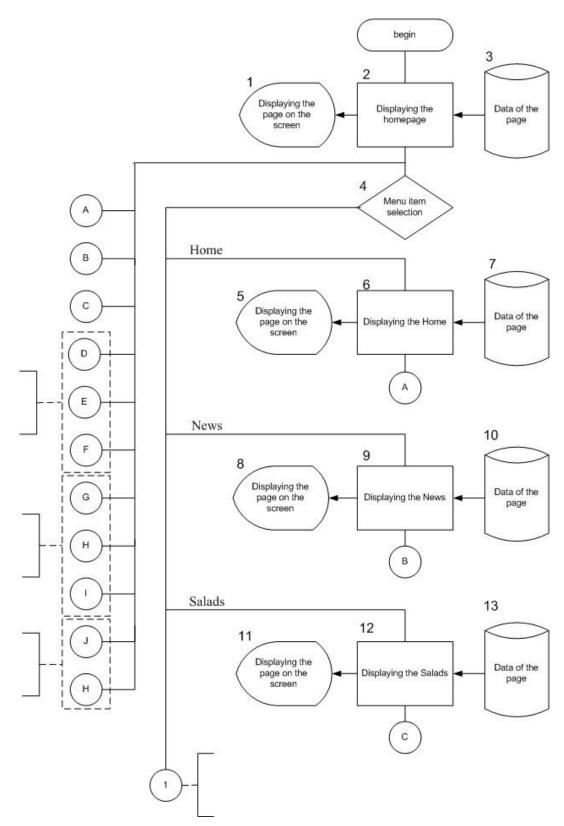


Figure 5. Website structure flow chart part 1.

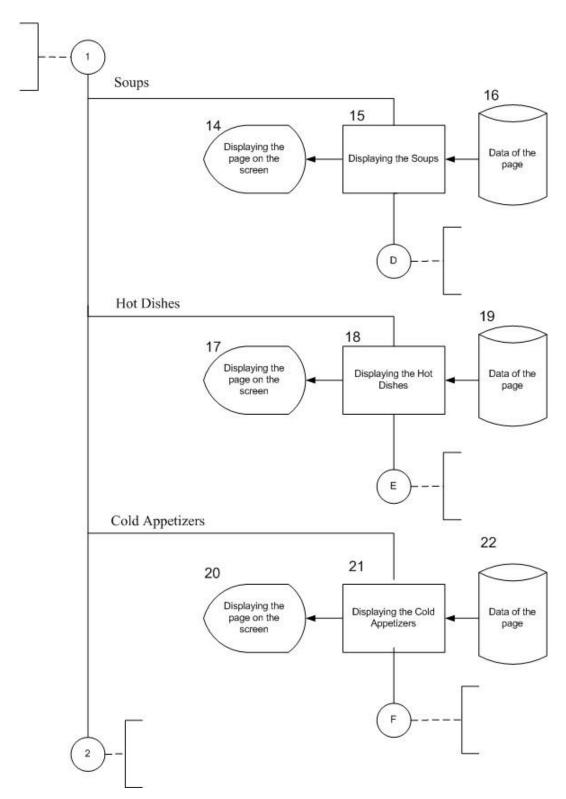


Figure 6. Website structure flow chart part 2.

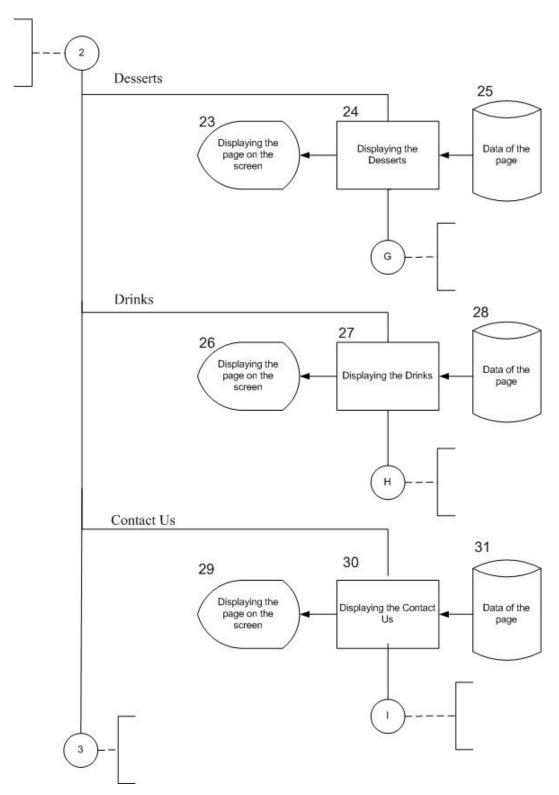


Figure 7. Website structure flow chart part 3.

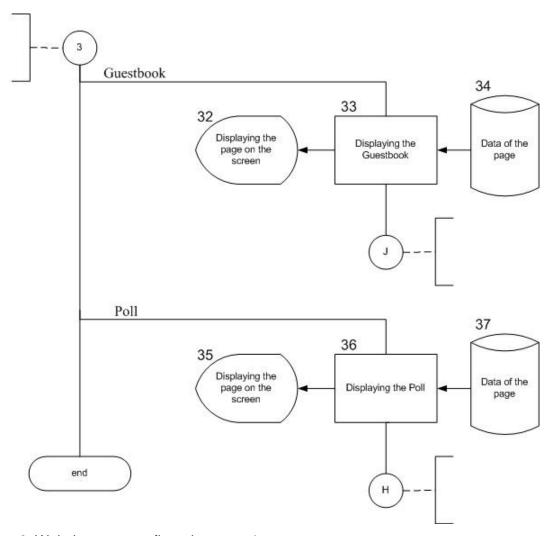


Figure 8. Website structure flow chart part 4.

The main point is that we can access any page wherever we are located now. As an example, we can be on the guestbook page where comments and feedback can be left; then with one click of the mouse we go to the contact page of any menu page. This is convenient for a user to keep track of the website navigation and makes it hard to get lost in overwhelmed websites with many links across them.

3.3 Design

The design concept is to make navigation simple and understandable for most users without complicated menus and submenus. All page links are located on every page, so the user can go to any website page with one click. This eliminates misunderstanding where to click next to see the menu table and prices.

The color scheme was chosen so that it would be appealing to the eyes and would not destruct the user much from the main content. For this purpose there are many tools available on the Internet, for example Adobe Kuler Color wheel, Color Schemer, Kuler. For my project light blue color with red and orange was chosen to emphasize some objects and menus.

The header banner with the cafeteria name was created with Photoshop from a collection of different pictures illustrating food and drinks. During the process it was needed to blend the chosen photos with smooth transactions from one to another. When the collage was ready the naming was written on top.

The initial design of the taken template was as shown in figure 9. During the project work and design stage the whole layout and most of the elements of the template, such as menu markers, font sizes and color, background image, menu elements pictures and link colors, were modified to look more appealing and meet the requirements.



Figure 9. Initial template design.

The result of hard work and many hours spent on debugging and analysing the mistakes during the designing stage made possible to implement the final outcome of the project as seen in figure 10.

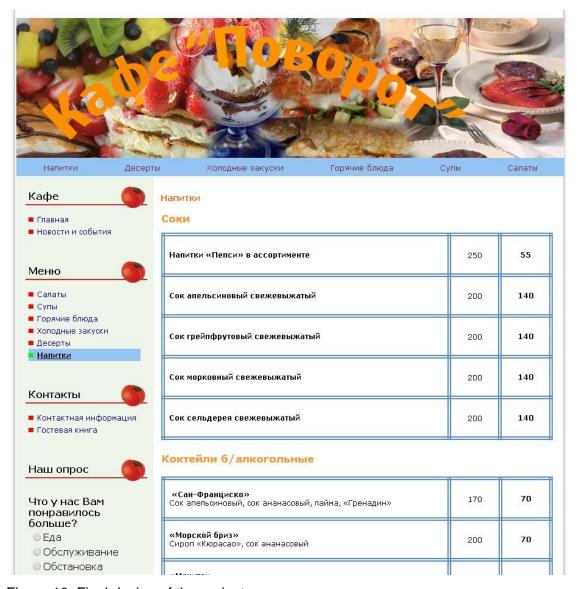


Figure 10. Final design of the project.

The final design looks simple but informative for a user. Most of the links to other pages are located in the left column for easy navigation. The main links for a cafeteria are placed after the banner on top.

4 Joomla System Installation and Configuration

4.1 Joomla Installation

To install Joomla 2.5 or a later version one needs to download the latest version from the official site. I created the root directory on the server (if user have a XAMPP, the default is C:/xampp/htdocs/joomla) and unpacked the archive into this directory. There are different emulating software to run and test website on local machines, such as XAMPP, WampServer, EasyPHP, Denwer. To start the installation, the first thing to do is to install a local server [3,47-49].

At Denwer, we can hold any number of sites, and it is useful for testing and tuning new extensions or updates for Joomla, without an Internet connection. Using Denwer will allow one to work with a website on a computer without connecting to the Internet. Managing a website will be available only to user and when a website is ready, programmer can always move it to the hosting, where access to the site is available to any user. The server installation is straightforward, and the folder for the projects will be at C:\WebServers.

Before I started the installation of Joomla to Denver, | needed to create a folder for my website. To do this, I had to create a folder in the local server: C:\WebServers\home\localhost\www\OurJoomlaWebsite

Then I needed to unpack Joomla archive, that been downloaded in this folder. I typed in a browser http://localhost/joomla/ to see a dialog box of Joomla installation as shown in figure 11 [4,50-55].

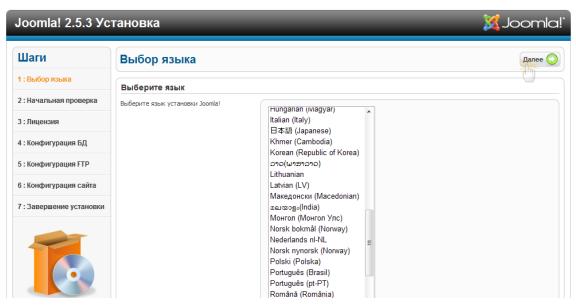


Figure 11. Joomla installation dialog box.

On this page I selected the installation language of Joomla, and click 'next' button in the upper right corner, and moved to the next step.

In the second step shown in figure 12 Joomla installation was being tested for compatibility with the server, in this case the local server.

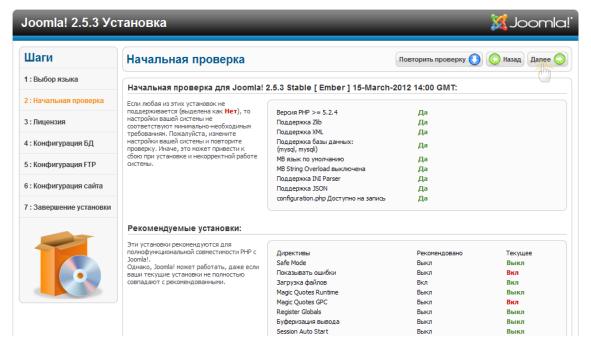


Figure 12. Test server connectivity.

If the test was successful and the server was fully consistent with the version of Joomla, I went to the next step, where I agreed to the GNU/GPL license.

The next step, shown in figure 13, was to connect to the database. Since I installed Joomla on Denwer, I needed to create a database in advance, and all I needed to do is keep to the appropriate data fields to connect to the database.

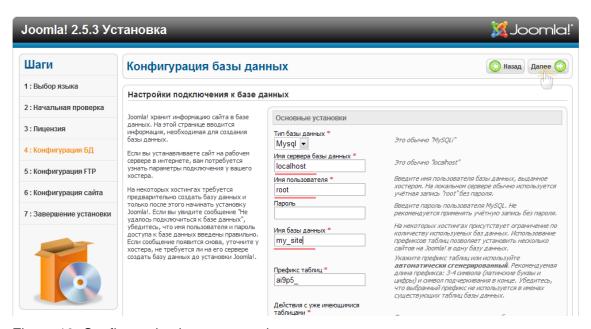


Figure 13. Configure database connections.

In the final step, I entered the name and description of the future website in the form shown in figure 14.

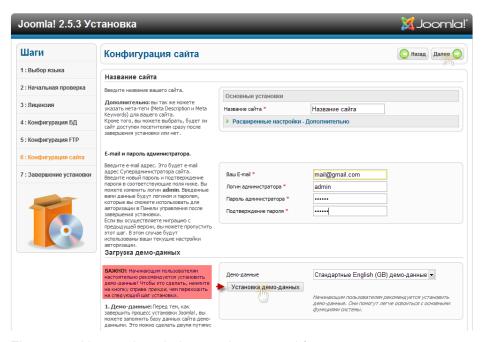


Figure 14. Name, description, and password form.

The last step, shown in figure 15 completed the installation of Joomla. The installation will not be completed until the installation directory is deleted, to avoid website corruption due to an installation folder existing in a server. To remove the directory, click on the delete button. To access the admin area control panel - default username is admin and the password is the one entered during installation process.



Figure 15. Completing the installation.

After the installation is completed the user can access the default website and start adding features, links, texts, and create the design.

4.2 Joomla Configuration

4.2.1 Navigation

For the surfing the website needs a navigation system: a set of links leading to the published page. In Joomla this function performs the menu. The developer can create an unlimited number of menus and create an unlimited number of combinations. Each menu can be displayed on the front side for the visitor with the help of a so-called module that defines a particular pattern of the page. The creation of the menu navigation is show in figure 16.

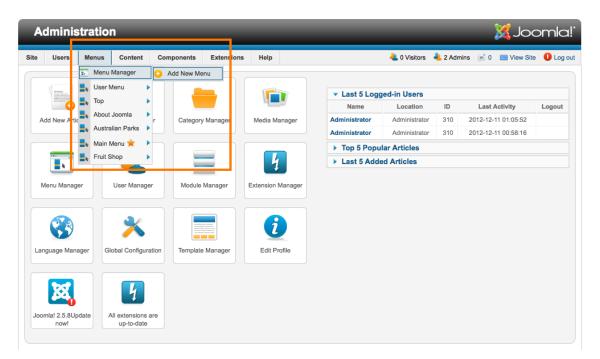


Figure 16. Menu manager.

Created menus can be places at any website positions dedicated for navigation across the website sections.

4.2.2 Modules

Module is a unit of content that can be placed next to the article page. For example, the menu on the side of the visitor is a module. The interface of login form and registration on the left side is also a module. Programmer can create as many modules with various useful features as user need and place them in the area of the page defined by the applicable template. To create or add a module - click the extension menu, as shown in figure 17.



Figure 17. Module manager

Created modules can be shown in different website areas for displaying a client the content in suitable form for consumption.

4.2.3 Templates

Template is a means of forming the appearance of the website. This function is realized mainly by means of HTML and CSS. Joomla comes with several pre-installed templates. The templates can be customized, for example, by changing the logo and the background colour. The template can be installed to serve client needs, for example to make a three-column website instead of two-column. In figure 18 the process of choosing from multiple website templates is shown. All the templates differ by the number of positions available to place your modules on. The illustration in figure

19 shows the positions where the elements of the websites can be placed. The position can be compared as a cell in the table where the useful information or an object can be placed. In order to see the position on a specific template append "?tp=1" to the URL.

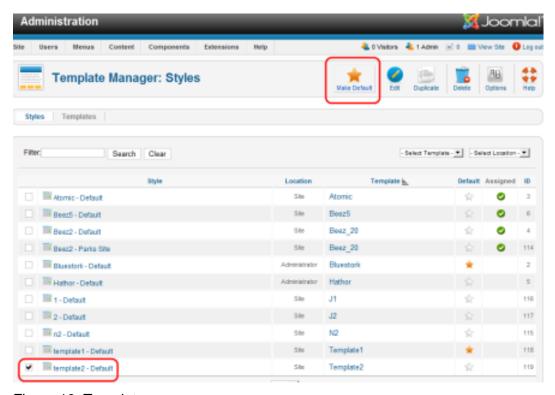


Figure 18. Template manager.

In a border the default template is selected, and you can also see the other installed themes which can be set for a website. Across the Internet can be found in many different templates for users' personal needs. However, if it does not fit, any template can be modified and edited with the knowledge of coding for the programmer specifications.

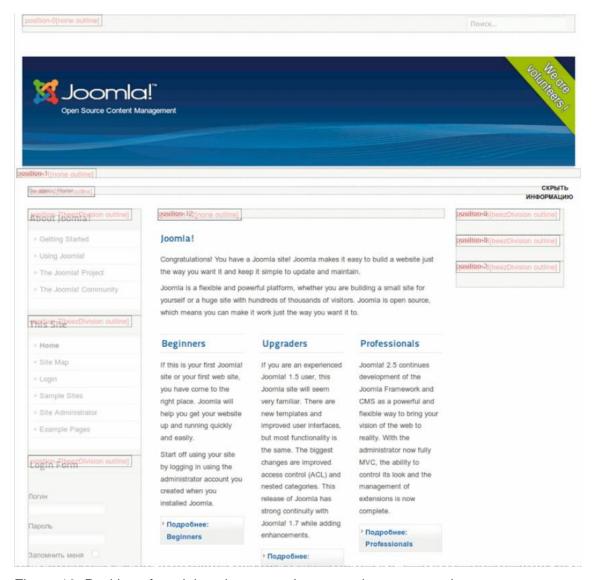


Figure 19. Position of modules placement demonstration on a template.

When the user sees the module placement on the website template layout, above each place where different modules can be located the name in a border appears, so it makes the item placement easy. Moreover, if the region of the element is forgotten the programmer can refresh the memory and see the regions to display the website elements.

4.2.4 Plugins

Plugins perform practical functions, but usually not visible to visitors. WYSIWYG-editor, for example is a plugin. Plugins is an extension which can be installed an unlimited number of times. In original packaging of Joomla many useful plugins are included.

4.2.5 Components

Component is an extension which allows creating the features for the website, which can be seen on other websites across the Internet. Using components programmer can create orders form, create a website for a real estate agency, make a forum, or a beautiful gallery. A suitable component for a implementation a feature is all what a developer is needed. In original packaging Joomla includes several extensions of this type, for example, a form of feedback. There are many components that can enhance the functionality of a website.

5 Functionality of the Website

The website offers the main functions for a cafeteria such as food menu offers (salads, soups, hot dishes, cold starters, desserts, and beverages), contact data, main page where news and important information are placed, a feedback and comments form, and a poll (voting) system. All the elements are ergonomically placed on the left-hand site navigation panel where it is easy to click and choose the desired element. Moreover, the dishes are also placed in the top menu right after the banner. The template that was chosen had the useful output positions for the information needed in my project. Figure 20 illustrates the main output position that was important for visualisation of information.

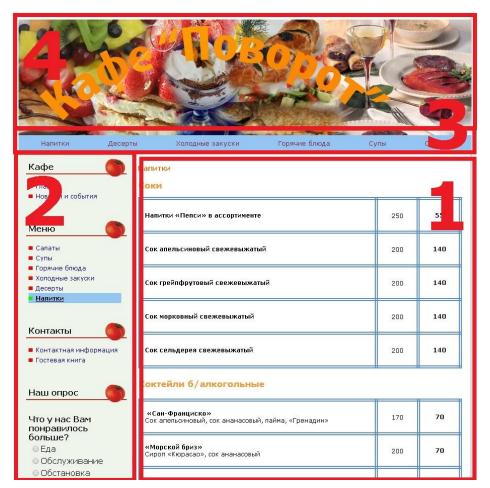


Figure 20. Information output section(1), Main menu(2), Secondary menu(3), Banner(4).

This example illustrates that it has navigation on the left-hand side, and the main article display on the right. However if there is a need to make right-hand column in the future it can be made to add new features.

6 System Testing Troubleshooting

During the work on this project some elements of the main menu were out of the boundaries of a table that caused some elements displacement and incorrect representation. For each element there is a defined cell in the table with its own margins to fit inside and not cause distortion, so some code modification in CSS and HTML documents were made. Some of these HTML and CSS code changes are displayed in appendix 1.

The voting system on how users like the place was tested to display correct information with an appropriate portion proportion to the other items, in my case: meal, service, atmosphere. Moreover the appropriate color needed to be assigned to display different items with its own color. During the experiment and manipulation with different settings and code changes, in some cases the counter did not add a new vote to the system, or the addition of a new item to vote made disproportion for the circle diagram. There was a need to do some correction in the PHP counting code, and for color the CSS file was modified.

The feedback form for a guest was modified to fit in to the column to display. There were certain insignificant fields to remove, such as phone number, city or e-mail, in order to ease the process of providing a comment or feedback. In this case the code was modified and only necessary fields to fill in were left. These actions caused an incorrect representation of the form, so it took some time to read the code thoroughly, analyse mistakes to fix this issue.

The website was tested with major browsers (Chrome, Firefox, Internet Explorer, and Opera) to ensure that it displayed correctly if a user has a small monitor resolution or the window was not in a full screen mode. Also availability and representation were checked on iOS and Android smartphones and tablet computers.

7 Discussion

Completing this thesis took roughly seven months of time. I was involved in designing it also during my work placement period. The project went well from the beginning to the end. During the project small problems of incapability were faced with different software versions that did not work together as needed, so some changes were made to the HTML and PHP code. Some Joomla components and modules were needed to be modified to serve the desired purpose.

During the development many new materials were read on this topic and many aspects that were forgotten were revised once again. I learned some details about CMS systems and web development in general, and I now feel more knowledgeable in this area than before. Reading new material on web development was a good learning experience.

8 Conclusion

The purpose of this thesis was to develop and improve the company website built during the work placement period. In this project I discussed major differences of the most widely used CMS platforms to build a website from scratch or to make changes to an existing one. While carrying out the project many aspects of WordPress, Joomla and Drupal were found similar, but also each of those platforms is constructed to serve its own needs. WordPress is suitable for beginners that want to start their career creating websites, Joomla is located on the second place between WordPress and Drupal, having many custom-built third-party modules and components. Drupal is most complicated at first glance. However the working principle is similar to the Joomla CMS, with even more customization possibilities, where a programmer can control every little detail.

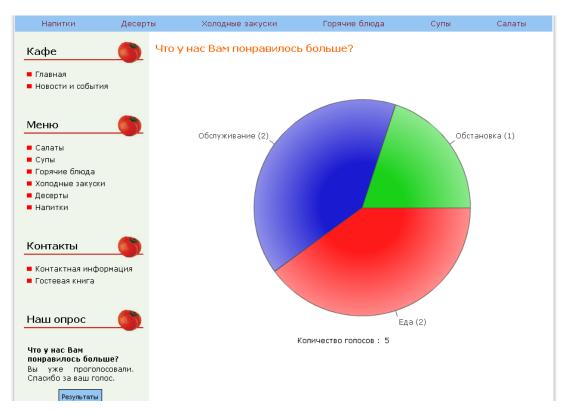
Coding previously with HTML and the CSS language and then adding PHP and MySQL database to my knowledge to construct more complicated websites helped me to understand Content Management Systems easily. Using the CMS allows a programmer not to write over and over same code for multiple pages, but to concentrate on improving and solution of more interesting tasks encountered during website construction. One needs to take to account the fact that many components, modules and plugins are not compatible with each other or the CMS version is outdated, so user needs to comprehend how to overcome this situation and plunge into coding to correct the mistakes.

The project required many skills in different areas of web development and designing tools, such as HTML, CSS, PHP, MySQL, Apache server, Photoshop, Notepad++. At the end of my thesis project I was more familiar with web development tools and the services needed to create a website.

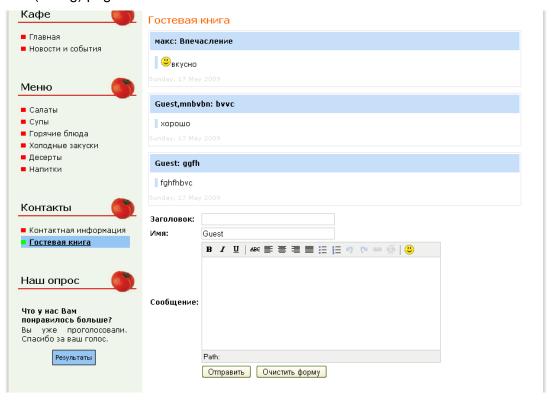
References

- 1. Robertson, James. So, what is a CMS? [online]. 2003. URL: http://www.steptwo.com.au/papers/kmc_what/index.html Accessed 25 June 2014.
- Jason, Mark. How WordPress Took The CMS Crown From Drupal And Joomla [online]. November 29, 2011 URL: http://www.smashingmagazine.com/2011/11/29/wordpress-cms-crown-drupal-joomla/ Accessed 21 June 2014.
- Mark Dexter, Louis Landry. Joomla! Programming. Addison-Wesley Professional, April 2012
- 4. Ric Shreves. Joomla! Bible. Wiley Publishing, 2010
- 5. Meloni Julie, Morrison, Michael. Teach Yourself HTML and CSS in 24 Hours, 8th Edition Sams, 2010
- 6. Elliott White, Jonathan D. Eisenhamer. PHP 5 in Practice, Sams, July 2006
- 7. Joomla! Administrator's Manual [online]. URL:http://docs.joomla.org/Portal:Administrators Accessed 11 Jule 2014.
- Stephen Burge. Joomla! Explained Your Step-by-Step Guide, Pearson Education, 2012
- 9. Lynn Beighley, Michael Morrison. Head First PHP and MySQL, O'Reilly Media, 2009
- Luke Welling, Laura Thomson. PHP and MySQL Web Development, Addison-Wesley Professional, 2009
- 11. Dave Lawrence and Soheyla Tavakol. Balanced Website Design. Optimising Aesthetics, Usability and Purpose, Springer-Verlag, 2007

Website pages demonstration



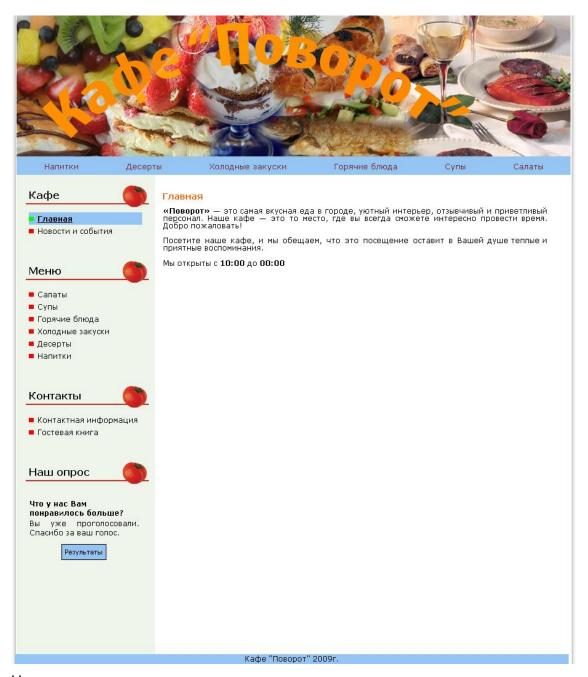
Poll (voting) page.



Guestbook (feedback) form page.



Menu page (salads).



Home page.

Code files

Template layout file - index.php

```
defined( ' JEXEC' ) or die( 'Restricted access' );
JPlugin::loadLanguage( 'tpl SG1' );
?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"</pre>
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="<?php echo $this-</pre>
>language; ?>" lang="<?php echo $this->language; ?>" >
<head>
<jdoc:include type="head" />
<link rel="stylesheet" href="templates/system/css/system.css"</pre>
type="text/css" />
<link rel="stylesheet" href="templates/<?php echo $this->template
?>/css/template.css" type="text/css" />
</head>
<body id="page bg">
           <div class="center">
                      <div id="wrapper">
                                 <div id="area">
                                            <div id="header">
                                                        <a
href="index.php"><div id="logo">
                                                        </div></a>
                                             </div>
                                             <div id="content">
                                                        <div
class="pill m">
                                                                    <div
id="pillmenu">
           <jdoc:include type="modules" name="user3" />
           </div>
                                                        </div>
                                                        <div
id="leftcolumn" style="float: left;">
           <jdoc:include type="modules" name="left" style="rounded" />
                                                        </div>
                                                        <div
id="maincolumn">
                                                        <div
class="nopad">
                                                                    <?php
if($this->params->get('showComponent')) : ?>
           <jdoc:include type="component" />
                                                                    <?php
endif; ?>
```

Template layout file - Template.css

```
html {
 height: 150%;
 margin-bottom: 0px;
form {
 margin: 0;
 padding: 0;
img,table {
          border: none;
contact email{
           font-family: Verdana, Arial, Tahoma, sans-serif;
           line-height: 1.3em;
           margin: 0;
           padding: 0;
           font-size: 12px;
           color: #000000;
           background: #FFF url(../images/bg site.jpg) top center
repeat-y;
body {
           font-family: Verdana, Arial, Tahoma, sans-serif;
           line-height: 1.3em;
           margin: 0;
           padding: 0;
           font-size: 12px;
           color: #000000;
           background: #FFF url(../images/bg site.jpg) top center
repeat-y;
body.contentpane {
          background: #FFF;
a:link, a:visited {
          text-decoration: underline;
           font-weight: normal;
           color: #000000;
}
a:hover {
           text-decoration: none;
           font-weight: normal;
           color: #000000;
}
input.button, .validate {
align:center;
           color: #000000;
           border: 1px solid #000000;
```

```
font-size: 11px;
          background: #95C5F2;
       padding-left:5px;
       padding-right:5px;
       padding-top:5px;
       padding-bottom:5px;
       margin:5px;
}
input.button:hover, .validate:hover {
}
p {
          margin-top: 0;
          margin-bottom: 5px;
          text-align: justify;
}
.inputbox {
          border: 1px solid #000000;
          color: #000000;
.inputbox:hover {
/************/
/*** Template specific layout elements ***/
#page_bg {
          padding: 0;
}
div.center {
          text-align: center;
          margin: 0 auto;
          width: 895px;
}
div#wrapper {
          margin: 0 auto;
          width: 900px;
          text-align: left;
}
#header {
          background: url(../images/header.jpg) top center no-repeat;
          height: 230px;
          width: 900px;
}
#content {
          width: 900px;
          margin: 0 auto;
          overflow: hidden;
}
```

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```
#logo {
           line-height: 40px;
           padding: 170px 0 0 24px;
           text-align: left;
}
#logo a, #logo a:link, #logo a:hover {
           font-weight: normal;
           font-family: Verdana, Arial, Tahoma, sans-serif;
           font-size: 30px;
           padding: 0;
           margin: 0;
           letter-spacing: 1px;
           color: #000000;
           background: transparent;
           text-decoration: none;
           outline: none;
}
.pill_m {
           width: 900px;
           text-align: center;
           height: 30px;
           margin: 0 auto;
           background: #95c5f2;
}
#pillmenu {
           float: left;
           width: 900px;
#pillmenu ul {
           margin: 0;
           padding: 0;
           list-style: none;
#pillmenu li {
align:left;
           float: right;
           margin: 0 10px 0 0;
           padding: 0;
           height: 30px;
#pillmenu li:hover {
#pillmenu li a {
           font-family: Verdana, sans-serif;
           font-size: 13px;
           float: right;
           display: block;
           line-height: normal;
```

```
padding: 8px 34px 8px 33px;
           color: #762136;
           text-decoration: none;
}
#pillmenu li a#active_menu-nav {
           text-decoration: underline;
#pillmenu li a:hover {
          background: #FFF;
           color: #000000;
}
#pathway {
           height: 22px;
           text-align: left;
           background: url(../images/main top.gif) top center no-
repeat;
           padding: 8px 0 0 10px;
           float: left;
           width: 630px;
}
span.pathway {
           color: #000000;
           display: block;
           font-size: 12px;
           overflow: hidden;
           text-transform: lowercase;
}
span a.pathway {
           text-decoration: underline;
           color: #000000;
           text-transform: lowercase;
}
#search {
           float: right;
           width: 90px;
           margin: 20px 0 0 0;
           height: 15px;
           overflow: hidden;
           text-align: right;
}
#area {
           padding: 0;
           margin: 0;
}
#leftcolumn ,#rightcolumn {
          margin: 0;
           width: 200px;
        height: 1000px;
           float: left;
```

```
padding: 14px 15px 0 10px;
          text-align: left;
          background: #eff5ea;
}
div#maincolumn {
       text-align:justify;
         float: left;
         width: 650px;
          margin: 0;
}
div.nopad {
          margin: 10px 0 0 0;
          padding: 10px;
}
div.nopad ul {
          clear: both;
}
td.middle_pad {
          width: 20px;
}
#banner_l {
          text-align: left;
          padding: 0 0 0 24px;
#footer {
          background: #95C5F2;
          margin: 0 auto;
          width: 900px;
          height: 30px;
          text-align: center;
          vertical-align: top;
}
#footer p {
          height: 30px;
          text-align: left;
          padding: 10px 0 0 50px;
}
/*************/
/*** Joomla! specific content elements ***/
/************/
div.offline {
          background: #fffebb;
          width: 100%;
          position: absolute;
          top: 0;
          left: 0;
          font-size: 1.2em;
          padding: 5px;
}
```

```
/* headers */
div.componentheading {
}
h1 {
           padding: 0;
           font-family: Verdana, Arial, Tahoma, sans-serif;
           font-size: 1.3em;
           font-weight: bold;
           vertical-align: bottom;
           color: #333;
           text-align: left;
           width: 100%;
}
h2, .contentheading {
           padding: 0;
           font-family: Verdana, Arial, Tahoma, sans-serif;
           font-size: 14px;
           vertical-align: middle;
           color: #ff6603;
           text-align: left;
           font-weight: bold;
}
table.contentpaneopen h3 {
           margin-top: 25px;
}
h4 {
           font-family: Verdana, Arial, Tahoma, sans-serif;
           color: #333;
}
h3, .componentheading, table.moduletable th, legend {
           margin: 0;
           font-weight: bold;
           font-family: Verdana, Arial, Tahoma, sans-serif;
           font-size: 16px;
           text-align: left;
           color: #ff6603;
/* small text */
.small {
           font-size: 10px;
           color: #ff6603;
           font-weight: normal;
           text-align: left;
}
.modifydate {
           height: 20px;
           vertical-align: bottom;
           font-size: 10px;
           color: #000000;
           font-weight: normal;
           text-align: right;
```

```
}
.createdate {
          height: 20px;
           vertical-align: top;
           font-size: 10px;
           color: #ff6603;
           font-weight: normal;
           vertical-align: top;
           padding-bottom: 5px;
           padding-top: 0px;
}
a.readon {
           display: block;
           float: right;
           line-height: 14px;
           font-size: 10px;
           text-decoration: none;
           padding: 1px 2px 1px 2px;
a.readon:hover {
           background: #000000;
           color: #FFF;
}
/* form validation */
.invalid { border-color: #ff0000; }
label.invalid { color: #ff0000; }
/** overlib **/
.ol-foreground {
           background-color: #f1f1f1;
           color: #333;
}
.ol-background {
           background-color: #f1f1f1;
           color: #333;
}
.ol-textfont {
           font-family: Verdana, Arial, Tahoma, sans-serif;
           font-size: 10px;
}
.ol-captionfont {
           font-family: Verdana, Arial, Tahoma, sans-serif;
           font-size: 12px;
           color: #f6f6f6;
           font-weight: bold;
.ol-captionfont a {
           background-color: #f1f1f1;
           color: #333;
           text-decoration: none;
           font-size: 12px;
```

```
}
.ol-closefont {}
/* menu links */
a.mainlevel:link, a.mainlevel:visited {
          padding-left: 5px;
a.mainlevel:hover {
/* spacers */
span.article separator {
          display: block;
           height: 20px;
}
.article column {
           padding-right: 5px;
.column_separator {
          padding-left: 10px;
td.buttonheading {
          text-align: right;
           width: 0;
}
.clr {er
          clear: both;
div#maindivider {
 border-top: 1px solid #000000;
 margin-bottom: 10px;
 overflow: hidden;
 height: 1px;
table.blog span.article_separator {
           display: block;
height: 20px;
}
/* table of contents */
table.contenttoc {
 margin: 5px;
 border: 1px solid #ccc;
 padding: 5px;
table.contenttoc td {
 padding: 0 5px;
```

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```
/* content tables */
td.sectiontableheader {
 color: #000000;
 font-weight: bold;
 padding: 4px;
 border-bottom: 1px solid #999;
}
tr.sectiontableentry0 td,
tr.sectiontableentry1 td,
tr.sectiontableentry2 td {
 padding: 4px;
}
td.sectiontableentry0,
td.sectiontableentry1,
td.sectiontableentry2 {
 padding: 3px;
 color: #000000;
}
/* content styles */
.contentpaneopen, table.contentpane {
          margin: 0;
          padding: 0;
}
table.contentpane td{
           text-align: left;
}
table.contentpane td.contentdescription {
           width: 100%;
}
table.contentpane {
          text-align: left;
           float: left;
          width: 100%;
}
table.contentpane ul li a .category {
           color: #FF8800;
table.contentpane ul li {
          color: #666;
table.contentpaneopen {
           margin: 5px 0 0 0;
}
table.contentpaneopen li {
          margin-bottom: 5px;
}
```

```
table.contentpaneopen fieldset {
          border: 0;
          border-top: 1px solid #000000;
}
table.contentpaneopen h3 {
          margin-top: 25px;
table.contentpaneopen h4 {
          font-family: Verdana, Arial, Tahoma, sans-serif;
          color: #000000;
}
.highlight {
          background-color: #fffebb;
/* module control elements */
table.user1user2 div.moduletable {
          margin-bottom: 0px;
div.moduletable, div.module {
 margin-bottom: 25px;
div.module menu, div.module {
          margin: 0;
          padding: 0;
          margin-bottom: 26px;
div.module_menu div div, div.module div div {
          margin: 0;
          padding: 0;
}
div.module menu div div div, div.module div div div{
           padding: 0 0 10px 0;
          width: auto;
div.module menu div div div, div.module div div div {
          background: none;
          padding: 0;
}
div.module_menu ul {
           list-style: none;
}
div.module menu ul li{
          margin: 0;
          padding: 0;
}
div.module_menu ul li a:link, div.module_menu ul li a:visited {
          font-weight: bold;
```

```
background: transparent url(../images/blue/bullet2.jpg) top
left no-repeat;
           padding: 2px 0 2px 25px;
           line-height: 24px;
}
#leftcolumn div.module table ,#rightcolumn div.module table {
           width: 180px;
}
#leftcolumn div.module table.poll {
/* LEFT COL H3 */
#leftcolumn h3, #rightcolumn h3 {
          color: #000000;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          font-size: 16px;
           line-height: 30px;
           text-align: left;
          height: 43px;
          width: 200px;
          text-decoration: none;
          padding: 4px 0 0 10px;
          background: url(../images/h3.jpg) top center no-repeat;
}
#leftcolumn .moduletable menu, #leftcolumn .moduletable, #leftcolumn
.moduletable text, #leftcolumn .c,
#rightcolumn .moduletable_menu, #rightcolumn .moduletable,
#rightcolumn .moduletable_text, #rightcolumn .c {
          margin: 0 0 16px 0;
          padding: 0 0 8px 0;
}
#leftcolumn ul.menu, #rightcolumn ul.menu {
          margin: 0;
           padding: 0;
           list-style: none;
           width: 170px;
}
#leftcolumn ul.menu li, #rightcolumn ul.menu li {
           margin: 0;
          padding: 0;
}
#leftcolumn ul.menu li:hover, #rightcolumn ul.menu li:hover {
          margin:0;
          padding:0;
}
/*LEFT COL LINK*/
#leftcolumn ul.menu li a, #leftcolumn ul.menu li a:link,
#rightcolumn ul.menu li a, #rightcolumn ul.menu li a:link {
           display: block;
           line-height: 20px;
           width: 170px;
           padding: 0 0 0 14px;
```

```
text-decoration: none;
           color: 07009a;
           font-weight: normal;
           font-size: 12px;
          background: url(../images/menu row.jpg) center left no-
repeat;
          margin: 0 0 0 10px;
}
#leftcolumn ul.menu li a:hover, #rightcolumn ul.menu li a:hover {
          color: #FFF;
          width: 170px;
          padding: 0 0 0 14px;
           background: #FD8E01 url(../images/menu row.jpg) center left
no-repeat;
/*LEFT COL CURRENT LINK*/
#leftcolumn ul.menu li#current a, #leftcolumn ul.menu li#current
#rightcolumn ul.menu li#current a, #rightcolumn ul.menu li#current
a:link {
           display: block;
          line-height: 20px;
          width: 170px;
          padding: 0 0 0 14px;
          text-decoration: underline;
           font-size: 12px;
           color: #000000;
          background: #95C5F2 url(../images/menu_row_cur.jpg) center
left no-repeat;
           font-weight: bold;
}
#leftcolumn ul.menu li#current a:hover, #rightcolumn ul.menu
li#current a:hover {
/*LEFT COL SUB LINK*/
#leftcolumn ul.menu li#current ul li a, #leftcolumn ul.menu li#current
ul li a:link {
           text-decoration: none;
           color: #000000;
          margin: 0;
           padding: 0;
           font-size: 12px;
          background: url(../images/menu row.jpg) center left no-
repeat;
           font-weight: normal;
           width: 140px;
           display: block;
           line-height: 20px;
           padding: 0 0 0 14px;
}
#leftcolumn ul.menu li ul li#current a, #leftcolumn ul.menu li ul
li#current a:link, #leftcolumn ul.menu li ul li#current a:visited,
#leftcolumn ul.menu li ul li#current a:hover {
```

```
font-size: 12px;
          margin: 0;
          padding: 0 0 0 14px;
           font-weight: bold;
          background: url(../images/menu_row_cur.jpg) center left no-
repeat;
/*SUBMENU POSITION*/
#leftcolumn ul.menu li#current ul {
          margin: 0;
          padding: 0 0 0 24px;
}
/*CURRENT SUBMENU POSITION*/
#leftcolumn ul.menu li ul {
          margin: 0;
          padding: 0 0 0 24px;
}
#leftcolumn ul.menu li#current ul li a:hover {
          color: #000000;
          text-decoration: underline;
}
#leftcolumn ul.menu li ul, #rightcolumn ul.menu li ul {
           list-style: none;
}
/* forms */
#leftcolumn .moduletable ul, #rightcolumn .moduletable ul {
          margin:6px 0;
          padding:0;
           list-style:none;
#leftcolumn .moduletable ul li, #rightcolumn .moduletable ul li {
          margin:0;
          padding:0 2px;
}
table.adminform textarea {
  width: 540px;
 height: 400px;
 font-size: 1em;
 color: #000099;
div.search input {
          width: 90px;
          border: 0;
          height: 15px;
}
form#form-login fieldset {
          border: 0 none;
          margin: 0;
form#form-login ul li{
          padding: 0;
```

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```
}
form#form-login ul li a {
          text-align: left;
          padding: 0;
          font-size: 10px;
          color: #000000;
}
/* thumbnails */
div.mosimage
                  { margin: 5px; }
div.mosimage_caption { font-size: .90em; color: #333; }
                  { padding: 0 10px 0 10px; }
div.caption img { border: 1px solid #CCC; }
div.caption p
                 { font-size: .90em; color: #333; text-align: center;
}
/* Parameter Table */
table.paramlist {
          margin-top: 5px;
table.paramlist td.paramlist_key {
          width: 128px;
          text-align: left;
          height: 30px;
}
table.paramlist td.paramlist_value {
div.message {
          font-family: Verdana, Arial, Tahoma, sans-serif;
          font-weight: bold;
          font-size : 14px;
           color : #c30;
           text-align: center;
          width: auto;
          background-color: #f9f9f9;
          border: solid 1px #d5d5d5;
          margin: 3px 0px 10px;
          padding: 3px 20px;
}
/* Banners module */
/* Default skyscraper style */
.bannergroup {
.banneritem {
/* Text advert style */
.banneritem_text {
          padding: 4px;
          font-size: 11px;
```

```
}
.bannerfooter_text {
          padding: 4px;
           font-size: 11px;
           text-align: right;
}
/* System Messages */
/* see system general.css */
.pagination span { padding: 2px; }
.pagination a
              { padding: 2px; }
/* Polls */
.pollstableborder td {
           text-align: left;
/* Frontend Editing*/
fieldset {
           border: 1px solid #ccc;
           margin-top: 15px;
           padding: 15px;
}
legend {
           margin: 0;
           padding: 0 10px;
}
td.key {
           border-bottom:1px solid #eee;
           color: #333;
}
/* Tooltips */
.tool-tip {
           float: left;
           background: #ffc;
           border: 1px solid #D4D5AA;
           padding: 5px;
           max-width: 200px;
}
.tool-title {
           padding: 0;
           margin: 0;
           font-size: 100%;
           font-weight: bold;
           margin-top: -15px;
           padding-top: 15px;
           padding-bottom: 5px;
           background: url(../../system/images/selector-arrow.png) no-
repeat;
.tool-text {
          font-size: 100%;
```

```
margin: 0;
}
/* System Standard Messages */
#system-message dd.message ul {
         background: #C3D2E5;
          padding: 0;
          margin: 0;
}
/* System Error Messages */
#system-message dd.error ul {
          color: #c00;
          background: #E6C0C0;
          border-top: 3px solid #DE7A7B;
          border-bottom: 3px solid #DE7A7B;
          padding: 0;
          margin: 0;
}
/* System Notice Messages */
#system-message dd.notice ul {
          color: #c00;
          background: #EFE7B8;
          border-top: 3px solid #F0DC7E;
          border-bottom: 3px solid #F0DC7E;
          padding: 0;
          margin: 0;
}
******************
****** */
/* blue */
input, button {
/* blue */
input[type="checkbox"], input[type="radio"]{
  background: transparent;
  border: none;
/* ----- */
a.sgfooter:link, a.sgfooter:visited {
          color: #000000;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          text-decoration: none;
}
a.sgfooter:hover {
          color: #000000;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          text-decoration: none;
#sgf {
          font-size: 11px;
          text-align: center;
          width: 100%;
          margin: 0 auto;
```

```
color: #000000;
          font-family: Verdana, Arial, Tahoma, sans-serif;
}
.sgf {
          text-align: right;
          font-size: 11px;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          color: #000000;
          text-decoration: none;
}
.sgf1 {
          font-size: 11px;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          color: #000000;
          text-align: left;
}
a.sglink:link, a.sglink:visited {
          color: #000000;
          font-size: 11px;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          text-decoration: none;
a.sglink:hover {
          color: #000000;
          font-family: Verdana, Arial, Tahoma, sans-serif;
          text-decoration: none;
```

Apoll component code - default.php

```
// no direct access
defined('_JEXEC') or die('Restricted access'); ?>
<form action="index.php" method="post" name="form2">
align="center" class="apol1<?php echo $params->get('moduleclass_sfx');
?>">
<thead>
                                     <?php echo $apoll->title; ?>
                                                                          </thead>
                                     <?php
                                                                          //if user has not voted for this poll show the
poll options
                                                                         if (!$voted) { ?>
                                                                                                               echo $params->get('moduleclass sfx'); ?>" cellspacing="0"
cellpadding="0" border="0" width="100%">
                                                                                                               <?php for ($i = 0, $n = ])
count($options); $i < $n; $i ++) : ?>
                                                                                                                                                    <td class="<?php
echo $tabclass arr[$tabcnt]; ?><?php echo $params-
>get('moduleclass sfx'); ?>" valign="top">
                                     <input style="float:left;" type="radio" name="voteid"</pre>
id="voteid<?php echo $options[$i]->id;?>" value="<?php echo</pre>
\phi(s) = 1-\sin(s) - \sin(s) - \cos(s) 
                                     <label for="voteid<?php echo $options[$i]->id;?>">
                                     <?php echo $options[$i]->text; ?>
                                     </label>
                                                                                                                                                                                         <?php
                                                                                                                                                                                         tabcnt = 1 -
$tabcnt;
                                                                                                                                                     ?>
                                                                                                               <?php endfor; ?>
                                                                                                               <div align="center">
```

```
<?php if ($params-</pre>
>get('only registered')) {
                                            if($guest) { ?>
                                                <?php echo
JText:: ('Please register to vote'); ?> <?php</pre>
                                            } else {
                                                        <input
type="submit" name="task button" class="button" value="<?php echo
JText:: ('Голосовать'); ?>" />
                                  <?php }
                                 } else { ?>
                                            <input type="submit"</pre>
name="task button" class="button" value="<?php echo</pre>
JText:: ('Голосовать'); ?>" />
                                 <?php } ?>
                                            <input type="button"</pre>
name="option" class="button" value="<?php echo JText:: ('Результаты');
?>" onclick="document.location.href='<?php echo</pre>
JRoute:: ("index.php?option=com apoll&task=view&view=apoll&id=$apoll-
>slug".$itemid); ?>'" />
                                 </div>
                      <?php }
                      // if user has already voted in this poll
                      else {
                                 if ($params->get('already voted')) {
2>
                       <?php echo $params->get('post_text'); ?> 
                      <?php } else {</pre>
                                 // if user has chosen to show poll
options
                                 ?>
                                 <table class="apollstableborder<?php
echo $params->get('moduleclass sfx'); ?>" cellspacing="0"
cellpadding="0" border="0" width="100%">
                                 <?php for ($i = 0, $n =</pre>
count($options); $i < $n; $i ++) : ?>
                                            <td class="<?php
echo $tabclass arr[$tabcnt]; ?><?php echo $params-
>get('moduleclass sfx'); ?>" valign="top">
           <input style="float:left;" type="radio"</pre>
disabled="disabled" name="voteid" id="voteid<?php echo $options[$i]-
>id;?>"/>
           <label><?php echo $options[$i]->text; ?></label>
                                            <?php
                                                        tabcnt = 1 -
$tabcnt;
                                            ?>
                                 <?php endfor; ?>
```

```
<?php } ?>
                     <div align="center">
                     <input type="button" name="option" class="button"</pre>
value="<?php echo JText::_('Результаты'); ?>"
onclick="document.location.href='<?php echo</pre>
JRoute:: ("index.php?option=com apoll&task=view&view=apoll&id=$apoll-
>slug".$itemid); ?>'" />
                     </div>
                     <?php } ?>
          <input type="hidden" name="option" value="com apoll" />
          <input type="hidden" name="task" value="vote" />
          <input type="hidden" name="id" value="<?php echo $apoll-</pre>
          <?php echo JHTML::_( 'form.token' ); ?>
</form>
```

Apoll module code - default.php

```
<?php
// no direct access
defined(' JEXEC') or die('Restricted access'); ?>
<form action="index.php" method="post" name="form2">
align="center" class="apoll<?php echo $params->get('moduleclass sfx');
?>">
<thead>
         <?php echo $apoll->title; ?>
                  </thead>
         <?php
                  //if user has not voted for this poll show the
poll options
                  if (!$voted) { ?>
                           echo $params->get('moduleclass sfx'); ?>" cellspacing="0"
cellpadding="0" border="0" width="100%">
                           <?php for ($i = 0, $n = ])
count($options); $i < $n; $i ++) : ?>
                                     <td class="<?php
echo $tabclass arr[$tabcnt]; ?><?php echo $params-
>get('moduleclass sfx'); ?>" valign="top">
         <input style="float:left;" type="radio" name="voteid"</pre>
id="voteid<?php echo $options[$i]->id;?>" value="<?php echo</pre>
$options[$i]->id;?>" alt="<?php echo $options[$i]->id;?>" />
         <label for="voteid<?php echo $options[$i]->id;?>">
         <?php echo $options[$i]->text; ?>
         </label>
                                              <?php
                                              tabcnt = 1 -
$tabcnt;
                                     ?>
                           <?php endfor; ?>
```

```
<div align="center">
                                <?php if ($params-</pre>
>get('only registered')) {
                                           if($guest) { ?>
                                               <?php echo
JText:: ('Please register to vote'); ?> <?php</pre>
                                           } else {
                                                    ?>
                                                      <input
type="submit" name="task button" class="button" value="<?php echo
JText:: ('Голосовать'); ?>" />
                                 <?php }
                                } else { ?>
                                           <input type="submit"</pre>
name="task button" class="button" value="<?php echo</pre>
JText:: ('Голосовать'); ?>" />
                                <?php } ?>
                                           <input type="button"</pre>
name="option" class="button" value="<?php echo JText:: ('Результаты');
?>" onclick="document.location.href='<?php echo</pre>
JRoute:: ("index.php?option=com apoll&task=view&view=apoll&id=$apoll-
>slug".$itemid); ?>'" />
                                </div>
                     <?php }
                     // if user has already voted in this poll
                     else {
                                if ($params->get('already voted')) {
2>
                     <?php echo $params->get('post text'); ?> 
                     <?php } else {</pre>
                                // if user has chosen to show poll
options
                                ?>
                                echo $params->get('moduleclass_sfx'); ?>" cellspacing="0"
cellpadding="0" border="0" width="100%">
                                <?php for ($i = 0, $n =</pre>
count($options); $i < $n; $i ++) : ?>
                                           <td class="<?php
echo $tabclass arr[$tabcnt]; ?><?php echo $params-
>get('moduleclass sfx'); ?>" valign="top">
          <input style="float:left;" type="radio"</pre>
disabled="disabled" name="voteid" id="voteid<?php echo $options[$i]-
>id;?>"/>
          <label><?php echo $options[$i]->text; ?></label>
                                                      <?php
                                                      tabcnt = 1 -
$tabcnt;
                                           ?>
```

```
<?php endfor; ?>
                                 <?php } ?>
                      <div align="center">
                      <input type="button" name="option" class="button"</pre>
value="<?php echo JText:: ('Результаты'); ?>"
onclick="document.location.href='<?php echo</pre>
JRoute:: ("index.php?option=com apoll&task=view&view=apoll&id=$apoll-
>slug".$\(\bar{i}\) temid); ?>\'\' />
                      </div>
                      <?php } ?>
           <input type="hidden" name="option" value="com apoll" />
           <input type="hidden" name="task" value="vote" />
           <input type="hidden" name="id" value="<?php echo $apoll-</pre>
>id;?>" />
          <?php echo JHTML::_( 'form.token' ); ?>
</form>
```

Phocaguestbook component code - default.php

```
<?php // no direct access</pre>
defined(' JEXEC') or die('Restricted access');
jimport('joomla.utilities.date');
jimport('joomla.html.pane');
require once( JPATH COMPONENT.DS.'helpers'.DS.'phocaguestbook.php' );
?><script language="javascript" type="text/javascript">
<!--
                      function submitbutton() {
                                 var novalues='';
                                 var form = document.saveForm;
                                 var text = tinyMCE.getContent();
                                 if (novalues!=''){}
                                  <?php
                                  if ($this->require['title']== 1) {?>
                                  else if ( form.title.value == "" ) {
                                             alert("<?php echo JText:: (</pre>
'Phoca Guestbook No Title', true); ?>");return false;} <?php }
                                  if ($this->require['username']== 1){?>
                                  else if( form.pgusername.value == "" )
{
                                             alert("<?php echo JText:: (</pre>
'Phoca Guestbook No Username', true); ?>");return false;}<?php }
CONTINUE OF THE APPENDIX 1
                                  if ($this->require['email']== 1){?>
                                  else if( form.email.value == "" ) {
                                            alert("<?php echo JText:: (</pre>
'Phoca Guestbook No Email', true); ?>");return false;}<?php }
                                  if ($this->require['content'] == 1) {?>
                                  else if( text == "" ) {
                                            alert("<?php echo JText:: (</pre>
'Phoca Guestbook No Content', true); ?>");return false;}<?php } ?>
                      --></script><?php
if ( $this->params->get( 'show page title' ) ) :
           ?><div class="componentheading<?php echo $this->params-
>get( 'pageclass sfx' ); ?>">
                      <?php echo $this->params->get( 'page title' );?>
           </div><?php
endif;
?><div class="contentpane<?php echo $this->params->get(
'pageclass sfx' ); ?>"><?php
if (@$this->image || @$this->questbooks->description ) :
           ?><div class="contentdescription<?php echo $this->params-
>get( 'pageclass sfx' ); ?>"><?php</pre>
                      if ( isset($this->image) ) : echo $this->image;
endif;
                      echo $this->questbooks->description;
           ?></div><?php
           endif;
?></div><div id="phocaquestbook"><?php // <div</pre>
style="clear:both"></div>
```

```
//Form 2
$form2 = ' <div><form action="'.$this->action.'"
method="post" name="adminForm" id="pgbadminForm">';
if (count($this->items)) {
          $form2 .='<center>';
          if ($this->params->get('show pagination limit')) {
                     $form2 .= '<span style="margin:0 10px 0</pre>
10px">'.JText:: ('Отображать по') .' '.$this->pagination-
>getLimitBox(). '/span>';
          }
          if ($this->params->get('show pagination')) {
                     $form2 .= '<span style="margin:0 10px 0 10px"</pre>
class="sectiontablefooter'.$this->params->get( 'pageclass sfx' ).""
>'.$this->pagination->getPagesLinks().'</span><span style="margin:0</pre>
10px 0 10px" class="pagecounter">'.$this->pagination-
>getPagesCounter().'</span>';
          $form2 .='</center>';
// Create and correct Messages (Posts, Items) -----------
$msgpg = '';//Messages (Posts, Items)
foreach ($this->items as $key => $values) {
          //Maximum of links in the message
          $rand
                                                    = '%phoca' .
mt_rand(0,1000) * time() . 'phoca%';
          $ahref replace
                                          = "<a ".$rand."=";
          $ahref search
                                          = "/<a ".$rand."=/";</pre>
          $values->content = preg replace ("/<a href=/",
$ahref replace, $values->content, $this->config['maxurl']);
          href=.*?>(.*?)<//a>/",
                            = preg replace ($ahref search, "<a
          $values->content
href=", $values->content);
          //Forbidden Word Filter
          foreach ($this->fwfa as $key2 => $values2) {
                     if (function exists('str ireplace')) {
                               $values->username = str ireplace
(trim($values2), '***', $values->username);
                               $values->title
str_ireplace (trim($values2), '***', $values->title);
                               $values->content = str_ireplace
(trim($values2), '***', $values->content);
                               $values->email
str ireplace (trim($values2), '***', $values->email);
                     } else {
                               $values->username = str replace
(trim($values2), '***', $values->username);
                               $values->title
str replace (trim($values2), '***', $values->title);
                               $values->content = str_replace
(trim($values2), '***', $values->content);
```

```
$values->email
str_replace (trim($values2), '***', $values->email);
                      }
           }
           //Forbidden Whole Word Filter
           foreach ($this->fwwfa as $key3 => $values3) {
                      if ($values3 !='') {
                                 //$values3
"/([\. ])".$values3."([\. ])/";
                                 $values3
"/(^{[^a-zA-z0-9]}){1}(".preg quote(($values3),"/").")($|[^a-zA-z0-y])
9 ]){1}/i";
                                 $values->username
                                                       = preg replace
(values3, "\\1***\\3", values->username);// \\2
                                 $values->title
preg replace ($values3, "\\1***\\3", $values->title);
                                 $values->content
                                                       = preg replace
(values3, "\\1***\\3", values->content);
                                 $values->email
preg replace ($values3, "\\1***\\3", $values->email);
           }
           //Hack, because Joomla add some bad code to src and href
           if (function exists('str ireplace')) {
                                 $values->content
                                                      = str ireplace
('../plugins/editors/tinymce/', 'plugins/editors/tinymce/', $values-
>content);
                      } else {
                                 $values->content
                                                      = str replace
('../plugins/editors/tinymce/', 'plugins/editors/tinymce/', $values-
>content);
           $msgpg .= '<div style="border:1px solid '.$this-</pre>
>css['bordercolor'].';color:'.$this->css['fontcolor'].';margin:10px
0px;">';
           $msgpg .= '<h4 style="background:'.$this-</pre>
>css['backgroundcolor'].';color:'.$this-
>css['fontcolor'].';padding:8px;margin:2px;">';
           //!!! username saved in database can be username or name
           $sep = 0;
           if ($this->display['username'] != 0) {
                      if ($values->username != '') {
                                 $msgpg .=
PhocaquestbookHelper::wordDelete($values->username, 25, '...');
                                 sep = 1;
                      }
           }
           if ($this->display['email'] != 0) {
                      if ($values->email != '') {
                                 if ($sep == 1) {
                                            $msgpg .= ' ';
                                            $msgpg .= '( '. JHTML:: (
'email.cloak', PhocaguestbookHelper::wordDelete($values-
>email,35,'...') ).')';
                                            sep = 1;
```

```
} else {
                                            $msgpg .= JHTML:: (
'email.cloak', PhocaguestbookHelper::wordDelete($values-
>email,35,'...') );
                                           sep = 1;
                                 }
                      }
           }
           if ($values->title != '') {
                      if ($values->title != '') {
                                 if ($sep == 1) {$msqpq .= ': ';}
                                 $msqpq .=
PhocaquestbookHelper::wordDelete($values->title,40,'...');
                     }
           // SECURITY
           // Open a tag protection
           $a count
                                = substr count(strtolower($values-
>content), "<a");</pre>
           $a end count
                                = substr count(strtolower($values-
>content), "<\overline{/}a>");
           $quote count
                                = substr count(strtolower($values-
>content), "\"");
           if ($quote count%2!=0) {
                      $end quote = "\""; // close the " if it is open
           } else {
                      $end quote = "";
           }
           if ($a_count > $a_end_count) {
                      $end a = "></a>"; // close the a tag if there is
a open a tag
                                                                    //
in case <a href> ... <a href ></a>
                                                                    //
in case <a ... <a href >></a>
           } else {
                      $end a = "";
           }
           msgpg = '</h4>';
           $msgpg .= '<div style="overflow:auto; border-left:5px solid</pre>
'.$this->css['backgroundcolor'].'; padding-left:5px;margin:10px;">'.
$values->content . $end_quote .$end_a. '</div>';
           $msgpg .= '
right:10px;"><small style="color:'.$this->css['secondfontcolor'].'">'
. JHTML::_('date', $values->date, JText::_( $this-
>tmpl['date format'] ) ) . '</small>';
           if ($this->administrator != 0) {
                      $msgpg.='<a
href="'.JRoute::_('index.php?option=com_phocaguestbook&view=phocaguest
book&id='.$this->id.'&Itemid='.$this-
>itemid.'&controller=phocaguestbook&task=delete&mid='.$values-
```

```
>id.'&limitstart='.$this->pagination->limitstart).'" onclick="return
confirm(\''.JText:: ( 'Delete Message' ).'\');">'.JHTML:: ('image',
'components/com phocaguestbook/assets/images/icon-trash.gif',
JText:: ( 'Delete' )).'</a>';
                     $msgpg.='<a</pre>
href="'.JRoute:: ('index.php?option=com phocaguestbook&view=phocaguest
book&id='.$this->id.'&Itemid='.$this-
>itemid.'&controller=phocaguestbook&task=unpublish&mid='.$values-
>id.'&limitstart='.$this->pagination-
>limitstart).'">'.JHTML:: ('image',
'components/com phocaquestbook/assets/images/icon-unpublish.gif',
JText:: ( 'Unpublish' )).'</a>';
          $msqpq.='</div>';
}
//--Messages (Posts, Items) ------
// Form 1
// Display Messages (Posts, Items) -----
// Forms (If position = 1 --> Form is bottom, Messages top, if
position = 0 --> Form is top, Messages bottom
if ($this->config['position'] == 1) {
          echo $msgpg;
// Display or not to display the form - only for registered user, IP
Ban-----
$show form = 1;// Display it
if ($this->ipa == 0) {$show form = 0;$ipa msg = JText:: ('Phoca
Guestbook IP Ban No Access');}
                                                     { \{ \text{sipa msg} = ''; \} }
if ($this->reguser == 0) {$show form = 0;$reguser msg = JText:: ('Phoca
Guestbook Reg User Only No Access');}
else
                                                     {\text{sreguser msg}} =
'';}
if ($show form == 1) {
          // Display Pane or not
          if ($this->tmpl['displayform'] == 0 ) {
                    $pane = &JPane::getInstance('sliders',
array('allowAllClose' => true));
                     echo $pane->startPane("phocaguestbook-pane");
                     // if user posted a message and get some error
warning (captcha, ...) the form should be open
                    if ($this->error_msg_captcha == '' && $this-
>error msg top == '') {
                               echo '<div
style="display:none">';//because of IE
                               echo $pane->startPanel( '',
'phocaguestbook-jpane-none');
                               echo $pane->endPanel();
                               echo '</div>';
                     }
```

```
echo $pane->startPanel( JText:: ('Post message'),
'phocaguestbook jpane-toggler-down' );
         }
         ?><div><form action="<?php echo $this->action; ?>"
method="post" name="saveForm" id="pgbSaveForm" onsubmit="return
submitbutton();">
         tmpl['tablewidth'];
?>"><?php
                   if ($this->error msg top !='') {
                            ?>
                                        
                                      <?php
                                                //-- Server side
checking
                                                echo $this-
>error msg top;
                                                //-- Server side
checking
                                                ?> 
                   <?php
                   ?>
                            <b><?php echo
JText:: ('Заголовок'); ?>: </b>
                            <input type="text"
name="title" id="pgbtitle" value="<?php echo $this->formdata->title
?>" size="32" maxlength="200" style="border:1px solid #ccccc" />
                   <?php
                   if ($this->display['formusername']){
                            ?>
                                      <to><
JText:: ('Имя'); ?>: </b>
                                      <input
type="text" name="pgusername" id="pgbusername" value="<?php echo
$this->formdata->username ?>" size="32" maxlength="100"
style="border:1px solid #cccccc" />
                            <?php
                   if ($this->display['formemail']) {
                            ?>
                                      <to><
JText:: ('Email'); ?>: </b>
                                      <input
type="text" name="email" id="pgbemail" value="<?php echo $this-
>formdata->email ?>" size="32" maxlength="100" style="border:1px solid
#cccccc" />
                            <?php
                   }
                   ?>
```

```
<b><?php echo
JText:: ('Сообщение'); ?>: </b>
                               <?php echo $this-
>editor; ?>
                     <?php if ($this->enablecaptcha > 0) {
                                // Server side checking CAPTCHA
                               echo $this->error msg captcha;
                                //-- Server side checking CAPTCHA
                                // Set fix height because of pane
slider
                               $imageHeight = 'style="height:105px"';
                                ?>
                                          <b><?php echo
JText:: ('Image Verification'); ?>: </b>
                                          <td width="5" align="left"
valign="middle" <?php echo $imageHeight ?>><?php</pre>
                                          if ($this-
>tmpl['captchamethod'] == 1) {
                                                     ?>
                                                     <img src="<?php</pre>
echo
JRoute::_('index.php?option=com_phocaguestbook&view=phocaguestbooki&id
='.$this->id.'&Itemid='.$this->itemid.'&phocasid='.
md5(uniqid(time()))) ; ?>" alt="<?php JText::_('Captcha Image'); ?>"
id="phocacaptcha" /><?php</pre>
                                          } else {
                                                     echo JHTML:: (
'image.site','index.php?option=com phocaguestbook&view=phocaguestb
ooki&id='.$this->id.'&Itemid='.$this->itemid.'&phocasid='.
md5(uniqid(time())), '', '','',JText::_('Captcha Image'), array('id'
=> 'phocacaptcha'));
                                          ?>
                                          <td width="5" align="left"
valign="middle"><input type="text" id="pgbcaptcha" name="captcha"
size="6" maxlength="6" style="border:1px solid #cccccc"/>
                                          <td align="center"
width="50" valign="middle"><a <?php //Remove because of IE6 -</pre>
href="javascript:void(0)" onclick="javascript:reloadCaptcha();" ?>
href="javascript:reloadCaptcha();" title="<?php echo JText:: ('Reload
Image'); ?>" ><?php echo</pre>
JHTML:: ( 'image.site',
'components/com phocaguestbook/assets/images/icon-reload.gif', '',
'','',JText::_('Reload Image')); ?></a>
```

```
<?php
                    }
                    ?>
                                 
                               <input type="submit"
name="save" value="<?php echo JText:: ('Отправить'); ?>" />
 <input type="reset" name="reset" value="<?php echo</pre>
JText:: ('Очистить форму'); ?>" />
                    <input type="hidden" name="cid" value="<?php echo $this->id
?>" />
          <input type="hidden" name="option"</pre>
value="com phocaquestbook" />
          <input type="hidden" name="view" value="phocaguestbook" />
          <input type="hidden" name="controller"</pre>
value="phocaguestbook" />
          <input type="hidden" name="task" value="submit" />
          <input type="hidden" name="<?php echo JUtility::getToken();</pre>
?>" value="1" />
          </form></div><div style="clear:both;">&nbsp;</div><?php
          // Display Pane or not
          if ($this->tmpl['displayform'] == 0 ) {
                    echo $pane->endPanel();
                    echo $pane->endPane();
          }
^{-} Display or not to display Form, Registered user only, IP Ban
else {
          // Show messages (Only registered user, IP Ban)
          if ($ipa msg !='')
                                         {echo ''. $ipa msg .
'';}
          if ($reguser msg !='')
                                        {echo ''. $reguser msg .
'';}
_____
//Forms (If position = 1 --> Form is bottom, Messages top, if position
= 0 --> Form is top, Messages bottom
if ($this->config['position'] == 0) {
          echo $msqpq;
//--Form 1
// Form2
echo $form2;
?></div>
```