

University of Hradec Králové
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Department of Computer Science

**Websites Content Management Systems
for Schools**

Diploma Thesis

Author: Bc. Iveta Procházková
Study Program: N7504 Teaching at Secondary Schools
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Thesis Supervisor: doc. RNDr. Štěpán Hubálovský, Ph.D.

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Pedagogická fakulta

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Autor:	Bc. Iveta Procházková
Studijní program:	N7504 Učitelství pro střední školy
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Cíl a metody práce:	Diplomová práce by měla být rozšířením mé bakalářské práce. Měla by popisovat pokračování a zakončení procesu tvorby školního webu. Teoretická část práce by měla rozebírat obecná pravidla a témata v oblasti tvorby systému pro správu obsahu webových stránek se zaměřením na kódování v PHP. Práce by měla také stručně porovnat aktuálně dostupné CMS pro školy a definovat jejich kladné a záporné aspekty. Cílem praktické části je dotvořit určité stránky vybrané školy (z bakalářské práce) skrze kódování CMS přímo pro potřeby dané školy. Také by zde měl být krátký průzkum ohledně zlepšení a zefektivnění těchto stránek.
Garantující pracoviště:	Katedra informatiky, Přírodovědecká fakulta
Vedoucí práce:	doc. RNDr. Štěpán Hubálovský, Ph.D.
Oponent:	Ing. Mgr. Josef Šedivý, Ph.D.
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Prohlášení:

Prohlašuji, že jsem diplomovou práci vypracovala samostatně a že jsem v seznamu použité literatury uvedla všechny prameny, z kterých jsem vycházela.

V Hradci Králové dne 16. 4. 2015

Bc. Iveta Procházková

Poděkování:

Chtěla bych mimo všem, kteří měli s mou prací přímější spojitost, jmenovitě poděkovat své mamce za velikou pomoc a ochotu při komunikaci se školou, za neúnavné testování s hlášením chyb a v neposlední řadě za roznesení dotazníků.

Annotation

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This thesis follows my Bachelor thesis and its aim is to provide comprehensive information about content management systems, emphasizing those designed for managing the content of websites and an implementation of a particular CMS. Theoretical part of the thesis is about describing advantages of websites having CMS implemented, and mutual comparison of existing CMSs chosen on the basis of the frequency of its usage and suitability for managing the content of school websites. Following chapters of the theoretical part of the thesis describe possibilities of own CMS creation, compare individual programs designed for programming websites and describe basic conditions that have to be met for appropriate CMS implementation - as for example recommended web server software and aspects of some programming languages. In the practical part, the thesis applies theoretical knowledge to the particular example of implementing CMS to a web of chosen elementary school that has been created within the Bachelor thesis. Furthermore there is the overall web evaluation through Auto-evaluating Assistant and observing the web attendance development and also an evaluation of the particular CMS through a survey for the school employees.

Keywords

Content, management, system, administration, WordPress

Anotace

PROCHÁZKOVÁ, I. *Administrační systémy webových stránek pro školy*. Hradec Králové, 2015. Diplomová práce na Pedagogické fakultě Univerzity Hradec Králové. Vedoucí práce doc. RNDr. Štěpán Hubálovský, Ph.D. 68 s.

Tato práce navazuje na mou bakalářskou práci a jejím cílem je poskytnout ucelené informace o systémech pro správu obsahu, s důrazem na systémy redakční či administrační pro správu webových stránek a implementace konkrétního CMS. Teoretická část práce se týká popisu výhod stránek s implementovaným CMS, a také vzájemným porovnáním existujících systémů vybraných na základě četnosti jejich využití a vhodnosti pro správu webových stránek škol. Další kapitoly teoretické části práce popisují možnosti tvorby vlastního CMS, porovnávají jednotlivé programy určené pro programování stránek a popisují základní podmínky, které je nutné splnit pro patřičnou implementaci CMS - jako například doporučený software pro webový server a vlastnosti některých programovacích jazyků. V praktické části práce realizuje teoretické poznatky na konkrétním příkladu implementace CMS na web vybrané základní školy, který byl vytvořen v rámci bakalářské práce. Dále web celkově hodnotí pomocí Auto-evaluačního asistenta, pozorování vývoje návštěvnosti webu a také hodnotí přímo konkrétní CMS přes dotazník pro zaměstnance dané školy.

Klíčová slova

Správa, obsah, systém, administrace, WordPress

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Introduction

My Diploma thesis is about creating a suitable content management system, designed particularly for school websites. It follows my Bachelor's thesis that is about creation of a school web. Within the Bachelor's thesis there was created a static website for one particular school. The topic of this Diploma thesis was chosen because of the need of more frequent updates and enabling contributing by all employees of the school, not only one webmaster. Currently, it becomes more and more common to have websites with some CMS, regardless if personal or public. The final product of CMS was mutually beneficial, because of the fact that the chosen institution is a non-profit organisation and so has not much money in its budget, along with the fact that this particular branch of a computer science as a subject is very interesting, attractive and challenging for me as I deal with creating websites since 2001. From the obvious reasons the further focus of this thesis is on CMSs of institutions or companies with lower budget.

The theoretical part of this thesis aims to collecting mainly the theoretical knowledge related to the topic of the thesis gathered from various resources including both, printed and electronic forms. However, there is a clear superiority of electronic sources that is caused by the recentness and rapid development of the chosen topic. Unfortunately, the most of printed sources are obsolete by now and so the procedures they contain are not suitable for current usage. The dominant electronic (and generally less relevant) sources usage tends to be balanced by the greater number of them. Especially in the theoretical part of this thesis I tried to have every essential information unit based on at least two reliable sources.

The practical part of this thesis uses the theoretical findings in practice. Based on the research done within the theoretical part, there was created a particular CMS for a particular school and the practical part contains a detailed description of this process. Eventually, there are listed the results from Ondřej Neumajer's Auto-evaluating Assistant applied on both, the static (within my Bachelor thesis) and new dynamic web. Supplemented by the statistic of web attendance commentary through the years 2013, 2014 and 2015; and the results of survey focused on the work with and benefits arising from the new CMS for the employees.

1 Theoretical part

At its beginning this chapter describes content management system from the very general point of view: where the abbreviation comes from, some history and a basic distribution of different types of CMSs, with a further focus on so called web CMS that the topic of this thesis is most related to. Furthermore there are outlined all possible advantages and disadvantages of web with CMS, or difference between static and dynamic websites and their advantages. There are also briefly introduced the two basic ways of obtaining some CMS in practice: installing existing or coding own one.

After this general outset the theoretical part of this thesis in its third subchapter describes and compares existing particular CMSs selected on the basis of sequentially both, worldwide popularity and focus on the given topic - school websites. Hereafter there is a chapter that deals with the existing CMS picking process further by a collection of some currently available opinions to this problematic.

The notional third part of the thesis theory deals with coding particular CMS on one's own. After an introduction containing advantages and disadvantages of this decision and outlining the right procedure, there is a description and comparison of chosen HTML editors on the basis of their popularity in both, the Czech Republic and abroad. The last chapter of the theoretical part provides a detailed analysis of the nowadays most widely used general web server's componential set emphasizing PHP and MySQL for their important relation with the topic of this thesis and supplemented by JavaScript as the very best and most widely used client's side scripting language.

1.1 Content Management System generally

Content management system or CMS is, according to a group of authors from the internet portal Redakční systémy [1], a computer application that enables creation, adjustment, search and archiving of digital media, or electronic texts. CMSs are usually used for publication of articles, notes, brochures, manuals, and other types of texts. However, it is not necessary to use CMS only on the websites, there exist

both, online and also offline CMSs for publication of texts, pictures, videos, audios and also mentioned websites.

There can be found many various content management systems through the internet. It is generally known that there are two basic ways how to get new CMS - obtain some existing through either ordering from some company or individual installing, or create/code own CMS through various programming languages. According to David Sedláček [2], there are usually three parts of CMS: Front-End (the part of the websites that is seen by ordinary visitor), database and Back-End (administration). The administration contains of several defined permission levels, so called roles that can adjust the content of the web. The main role, according to Stanislav Pecho [3], is an administrator, usually web owner, who has an access to the management of all the dynamic parts of the web (they can change for example articles, pictures, or other users' permissions).

Each CMS supports various properties, according to its purpose, the basic characteristics are identification of individual CMS users and assigning them roles (administrator, editor, corrector, ...), assigning roles on the basis of different categories and types, the definition of workflow (for example some articles written by an author can be published only after an approval of editor and corrector), the ability of managing more versions of one text (for example copying articles and making their corrections), the ability of text archiving and publishing them only for certain category of users.

Obviously there are much more properties depending on the type of CMS. Each type has its own requirements and priorities. The several types of CMSs are, as David Sedláček [2] states, Component CMS, Document MS, Enterprise CMS, Mobile CMS and Web CMS. There follows brief description of each type ending with more extended description of the greatest group that is also the group this thesis covers the most, based on *The UK's Leading guide to CMS* [4].

- Component CMS

This type of content management system, called also CCMS is not as very well-known as the others. It is specialised for storing smaller items or components of the document instead of whole document. The main advantage of this type of CMS

is the possibility of use only once stored content all over again in more documents instead of keeping copying and pasting and so filling up the server storage unnecessarily. The main advantage is an enabling the public to interact with the documents without changing its structure or content (for example filling forms and downloading documents).

- Document MS

DMS is determined mainly for storing and tracking documents, for controlling them since their creation till their archiving. This type of management system is usually considered as a part of CCMS. It is useful mainly for keeping a track of the different versions modified by different users (so called history tracking).

- Enterprise CMS

It is probably the second largest group of content management systems nowadays, after Web CMS. ECMS is a system determined for managing business, organisation or company matters. It serves mainly for managing documents, records, manuals and commands for publishing these documents within an intern network of a company. ECMS also usually can divide these documents taking into an account single departments.

- Mobile CMS

MCMS is a specific type of CMS determined for delivering the content to various mobile devices, such as mobile phones and tablets. This CMS has a specialised set of templates for smaller displays, or displays with different resolutions. They can be also adjusted for lower data flow to lower load of mobile network.

1.1.1 Web CMS

As Bob Boiko [5] wrote: "If your only problem is to create and maintain a large Web site, you have reason enough to desire the strict structure and formal procedures of a CMS. Such a system helps you get and stay organized so that your site can grow and change quickly while maintaining high quality."

According to David Sedláček [2], web content management system, or WCMS, is software usually implemented as a web application for creating and managing HTML content. It is used for controlling the extended dynamical collection of web material (HTML documents and corresponding pictures or videos). It simplifies content creation, its controlling, editing and other maintaining functions in the way that its users do not need much from the knowledge of programming or markup languages for creating web sites by themselves.

The majority of these systems use databases for storing content, metadata and other information files required by the system. The content is also usually saved as XML (or, less usually, as other text or data files) for further possibility of its later presentation. The content of the web is presented to visitors as a template that can be for example XSLT files or smarts. The most of these systems use server side caching as a form of saving data for higher performance. The administration is usually carried out through an internet browser in very user-friendly and intuitive interface so it enables to changing the website content without previous training. The only need of someone qualified is in the first phase of WCMS installation that is necessary for correct setting of system parameters, installation of component and other preparatory work.

There are three main types of WCMS systems, divided due to the way of processing: offline, online and hybrid systems.

- offline processing does not need a web server, because it pre-process all the content before its publication, and this processing is able to export the content in a such format that does not require a server to be displayed with the template and so properly, they are sometimes called "static site generators" (for example: *Bricolage*)
- online processing means a necessity of internet server that does partly the processing, sites are generated through a web browser; this is the most widely used type of web content management systems
- hybrid systems are a combination of both above - the content is possible to create without any web server, or event internet connection, but the final

output can be in some of server-oriented languages (for example PHP or ASP)

1.2 Advantages of websites with and without CMS

Basically, we can divide all websites into two main groups: static and dynamic. The definitions of them, from the server's point of view, are, as it is written in my Bachelor's thesis [6]: "Static websites are the simpler one – usually created through mentioned (X)HTML and CSS. Static means constant, permanent and invariable that means they will contain the given data forever. It also means that these are not from the server's point of view complicated for any calculations. On the other hand, dynamic websites must contain some scripting language, which is a kind of a procedural programming language. The most common of these scripting languages are JavaScript and PHP (which goes hand in hand with databases such as MySQL)."

However, for an owner of websites, it is, instead of how difficult is the displaying websites process for the server, much more important, if the data on the website can be easily changed, or not. As it is obvious from the previous quotation, static websites are kind of permanent - they can be updated, but it is much more complicated, even nearly impossible for a general user. There is a necessity of knowing at least basics in the field of HTML and CSS coding. On the other hand, dynamic websites are usually websites with some content management system implemented which means the websites contain some user-friendly environment, or interface. This environment is determined for adjusting the content of the web for those with only basic knowledge in handling with computer.

The greatest advantage of websites with CMS lies, according to David Sedláček [2], mainly in its multifunctionality: there exist many supplements or templates that modify the design of web presentation, add new functions and improve user interface for clients or target group. Every CMS has its own characteristics and offers both, similar and absolutely different functions that are not implemented in any other CMS. Basically, the main benefits of CMS are, based on David Sedláček [2], Margarette McBride [7] and Wikipedia [8]:

- creation, publication, later adjustment and deleting article through web interface with a possibility of using some WYSIWYG editor (From Free Dictionary [9]: "WYSIWYG = *What You See Is What You Get*, relating to or being a computer system in which the screen displays text and graphics exactly as they will be printed")
- possibility of switching into the Czech language
- simplified multimedia including
- system extension through the use of plugins
- changeability of the design through different templates
- possibility of adding more administrators and their particular rights for the system
- possibility of a cooperation of more people to create one content
- websites frame modification straight in the content management system

On the other hand, there are also some disadvantages of having CMS implemented in websites, but they were much more significant mainly in the past, as from my Bachelor thesis [6]: "According to Vojtěch Bednář [3] in the past the first content management systems were just in an "offline" version which means the related programs had to be installed on manager's computer. This solution was although user-accessible (for example easy contribution and differentiation due to the particular rights) but there remained many problems:

- a need of a big capacity of the server even for just static web pages
- unsatisfying content and graphic design dynamics
- a possibility of a conflict between more than one program accesses
- no possibility of any publication planning
- a high failure rate"

Despite this, the CMS had been used more and more, because of their strong and already mentioned advantages, so now, when there is even the possibility of using content management systems online (means stored on the web-server and shown as a separate private site on the web) instead of former offline programs, there is no doubt about the benefits of CMSs. However, there also remained some

disadvantages, no matter how low the importance of them is, these are, as from David Sedláček [2]:

- systems are developed by volunteers, so the code has not to be always perfect
- CMS runs on the much greater number of web presentations, so the revealing of security mistakes is easier and quicker, so the probability of hacking the websites is higher
- necessity of understanding of whole system - especially while making code adjustments
- greater demands on server and the database
- impure code, more difficult processing SEO (search engine optimization, from Free Dictionary [9]: "the process of adjusting the content, structure, etc., of a website so that it will be displayed prominently by a search engine")
- possible weakening of the system security while using third parties supplements
- necessity of creating own template - while using the download-able ones, the websites are usually too ordinary and plain

Despite all of these disadvantages, still, according to Ondřej Neumajer [10], the updating of (not only school) websites is one of the core things to keep websites interesting for a longer time, so the possibility of continues changing of the content of the web by not only the web creator is one of the biggest advantages that trumps all possible shortcomings of a dynamic web.

1.3 Various existing CMSs for web presentations

In the case of choosing not to code own CMS, there are many possibilities depending on the needs and the budget of the concrete client. As from the paid CMSs, there are companies that offer "complete care" (for example *pecho-it.cz*, *pcsAgency*, *Www pro školy*, etc.) that means they will not only create unique CMS concretely for their clients, but usually they also offer the installation of CMS, creation of websites, hosting and domain included in price. Or the companies that offer only various "modules" such as text processor, forum, survey, photo gallery,

etc. Client can then choose and compose, and so pay only for the desired parts (for example *nowonet.com*). The last group are many CMSs determined for e-shops, but these are not important for this thesis.

The second possibility are free-of-charge management systems, also called Open Source platform based CMS. As it is written in my Bachelor's thesis [6] from 2013: "the top ten free CMS are currently: *WordPress, Joomla!, Drupal, ExpressionEngine, TextPattern, Contao, SilverStripe, Umbraco, concrete5, CushyCMS.*" Despite the fact, that this information is quite outdated, the first three mentioned CMSs are popular nowadays, too. This could be also seen from the Figure 1 below that shows the use of CMS by all websites valid to 1st January 2015. There is also a significant shift from not using CMS to using some CMS (mostly WordPress) through the last few years that shows the Figure 2.

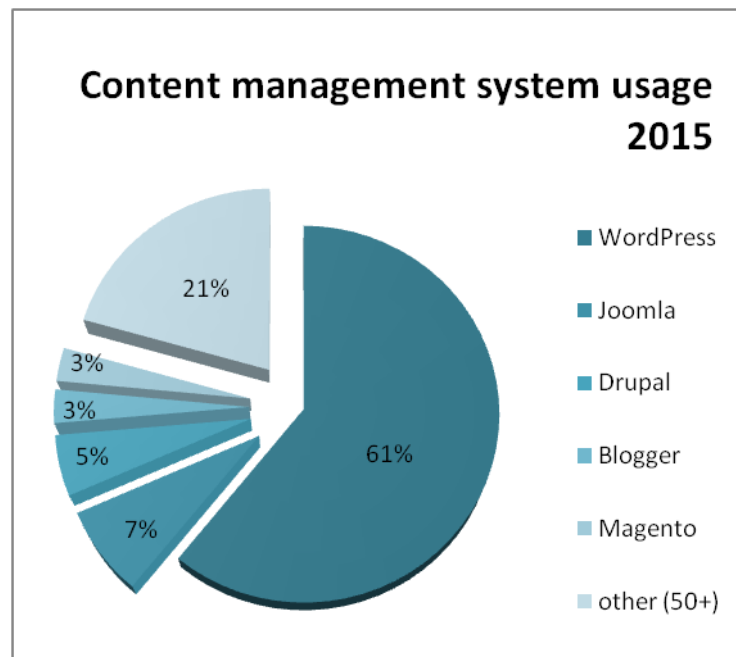


Fig. 1 Graph of the usage of particular CMSs by all websites in 2015 [11]

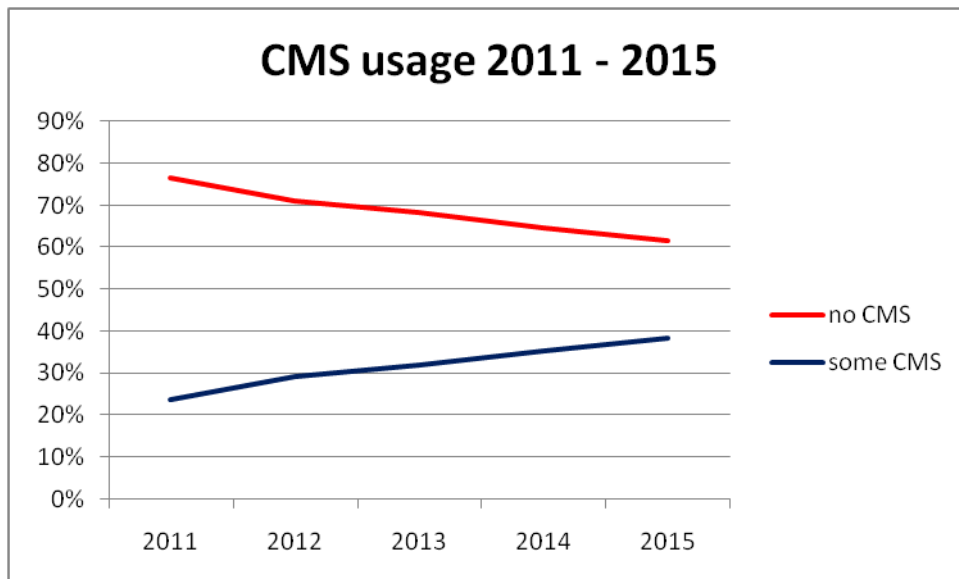


Fig. 2 Graph of the general usage of CMS during years from 2011 to 2015 [11]

As the article written by David Sedláček [2] implies, the main advantage of Open Source CMS is great saving of money - no payments for getting or using CMS. There is only the necessity of installation and some smaller corrections in code, because the main part of the CMS is already written, so it can be processed also by only little more advanced user (not necessary a professional). Besides these two, there is also an advantage in often upgrades by many fan users. Open Source CMS is therefore an ideal solution for everyone, who wants to keep their web presentations up-to-date without greater costs. The basic management can be handled by ordinary user, too.

There are the examples of the usage of CMS, David Sedláček [2]:

- extended company websites
- classical commercial company websites
- e-shops
- intranet and extranet sites
- websites of institutions, schools and communities
- websites of non-profit organizations
- internet magazines, personal websites, blogs, etc.

Management systems are very flexible. It is possible to use them for static websites only for very occasional changes as well. The main precedence of CMS is possibility of changing the content of the web very quickly and easily from almost anywhere.

1.3.1 WordPress

As from their official websites, WordPress [12], this favorite PHP and MySQL based blogging system was created in 2003 as a modification of *b2 cafelog* tool by Matt Mullenweg and Mike Little. Firstly it was desired for enhancing the typography of everyday writing. Nowadays, with its six lead developers: Ryan Boren, Mark Jaquith, Matt Mullenweg, Andrew Nacin, Andrew Ozz and Peter Westwood it has grown to be used on millions of sites and so it became the largest self-hosted blogging tool in the world. One of the proofs of its world-wideness is the fact that there exists full Czech support with a possibility to download whole system in Czech language.

According to David Sedláček [2], WordPress is suitable mainly for creating simple web presentation of a company. The main advantage of this system is the simplicity and pureness of the code preserving XML, XHTML and CSS standards. There is also a great number of well elaborated templates, with a full support of various plugins. As examples: support of friendly URL, labels and brilliant WYSIWYG-based text editor called *Texy*. This editor is developed by David Grudl, Czech developer and it took the second place in CZECH OPEN SOURCE 2007 competition. Great attention is paid on (X)HTML validity that is very important for SEO. Other advantages are simple administration and low level of the server load.

However, the greatest advantage of WordPress could become one of its disadvantages easily - because of its simplicity this system is not determined for much extensive web presentations. According to Michaela Horňáková [13], WordPress is currently used mainly for managing personal blogs, personal and company presentations, small social networks and e-shops.

According to Cameron Chapman [14] the strengths of WordPress are: "huge developer community with plenty of documentation and tutorials available, free and paid plugins and specialized themes make it possible to create virtually any kind of site with WordPress, user-friendly dashboard for managing content," and weaknesses are: "can be overkill for basic sites, a standard installation can have a lot of security issues, and is very vulnerable to attack without additional security

measures, no official support outside of user forums, where you may or may not get an official response."

1.3.2 Joomla!

The second currently most spread CMS is called Joomla!. To the history of this system, as it is stated on the Joomla! Czech community websites JoomlaPortal [15], undoubtedly belongs CMS *Mambo* that was created by Australian company *Miro Corporation* and in 2001 opened for wider community. It was the world's most popular CMS around the Year 2004. In 2005 was *Mambo* modified by the group of developers led by Andrew Eddie and so the first version of Joomla! was created. Since then there was great growth in numbers of Joomla! users, nowadays it has about twenty leading developers and more than two hundred thousand community users and contributors.

According to David Sedláček [2] the system of Joomla! runs on PHP and supports MySQL database. There is a possibility of Czech translations of Front-End and synoptic administration. This elaborated administration enables adjustments of almost everything, even things that are not possible to adjust through other management systems' administrations. Also it is possible to create nice web presentation despite the lack of knowledge in the field of HTML and CSS.

The main advantage of Joomla! is the installation of supplements through administration - adding of a new function is easily and quickly done, in three steps. There is also great community around Joomla! system, so there could be found many extensions and templates on the internet, and support in the case of occurring a problem. There are some examples of modules freely retrievable on the internet: forums, galleries, community sites, advertising servers, e-shops, etc. This system also has brilliant user management and assigning rights system. It is possible to assign group rights to each article or module. Users can be then divided into groups - for example for those writing updates, writing content, webmasters, etc.

As Cameron Chapman [14] states, the main disadvantages of Joomla!, compared with other CMSs, are user unfriendly Back-End, not many themes of a high-quality

and that it can be unnecessarily difficult for server computing in the case of simple sites."

1.3.3 Drupal

Content Management System called Drupal, as it is stated on its Czech official websites Drupal.cz [16], was developed by Dutch student Dries Buytaert in 2001. Although this very first developer remained on its place, besides him there are other leading developers and over four hundred contributors continuously working on this system. However, the greatest benefit is from module developers. Drupal is programmed in PHP and it uses MySQL or PostgreSQL database.

As David Sedláček [2] stated, Drupal has very low system requirements, so it runs on almost every hosting. This system consists of modules. These handle with basic functions, such as creating the content, sites, forums, surveys, etc. Other modules have to be installed, due to the needs of specific clients. The support of Czech translation is present in the basic form of Drupal, but many modules are not translated. Examples of the best modules are: friendly URL, multi-language web with friendly URL support and system of user authorization for assigning rights in desired modules.

The mention worthy function is so called API (application programming interface) for programming own modules separately from the main code, which eliminates errors in whole system if there are some mistakes in programming own modules. The templates are also very easily adjustable in this system. There are some presented in the basic installation, but much more of them could be downloaded from the internet. Then they can be partly adjusted easily through the administration using only internet browser (for example colours, font size, etc.).

The disadvantage of this CMS is quite confusing interface, the understanding and learning how to handle with administration is difficult and it takes time to get used to it. According to Cameron Chapman [14], the main disadvantage is the low number of themes that are really high quality and all the "theming" system was signed as complicated. However, as an advantage Cameron Chapman stated the high extensibility of Drupal, because of more than six thousand modules.

1.4 CMSs for schools

As from my Bachelor thesis [6]: "There exists also some kind of CMS determined directly for schools". Obviously more of them are in English, or other languages and unfortunately without Czech distribution (or localization), as for example *MySchools(CMS)*. The impossibility of Czech language is greater problem, as it could seem. The reason is that for many (mostly older) teachers it is problematic even to handle with using computer, also most of them are not able to understand English. The combination of handling with computer and foreign language becomes for them an unbreakable obstacle.

In this chapter there follow a summary of possibilities for general smaller Czech school that wants CMS on their websites. To make this summary complete there are also described not very suitable options, as for example by Ondřej Neumajer [10] mentioned and now obsolete *ŠkolníWEB*.

1.4.1 Paid CMSs

As it was indicated earlier in this thesis, both, *Www pro školy* and *ŠkolníWEB* are paid projects that include complete care about school web, including everything from web design proposing, coding of the web, implementing CMS determined for the particular school and training personal.

The *ŠkolníWEB* project is an older project, started in 2002 by David Hawiger and Martin Grombiřík. As David Hawiger [17] writes himself this project is now completely "dead" and so its support. In around 2004, *ŠkolníWEB* was with fifty schools using its services on the top of its glory. As from official websites of the project *Skolniweb.cz* [18], it is constructed for schools. The main goal was to enable the possibility of having websites for ordinary users that have no knowledge in HTML, etc. The CMS is friendly and with dynamical functions for effective creation of desired websites. The implemented WYSIWYG editor enables to easily and immediately editing of WWW texts, immediate adding of news, creating galleries (with a function for automatic resizing photos), creating new sites and other subsections, inserting files for downloading, statistics of attendance in all sections, managing users and e-mails, etc. However, as author David Hawiger

[17] himself admits, the CMS is now absolutely obsolete and without a vision of any further updates.

On the other hand, project *Www pro školy* is much more up-to-date. It is a project of *just4web* company that operates on the market since 2005 and, as it is stated on the official websites *Wwwproskoly* [19], they started to develop websites to schools after five years of experiences and cooperation with schools, creating information system *Etřídnice* and web catalogue *www.seznamskol.eu*. They offer modules developed exactly according to the client's needs and continuing developing with frequent updates. Their services promises CMS for schools; modules developed exactly for schools (school cafeteria, studying materials, tests, timetable, dashboard, etc.); a popularity of the web from the students and so high attendance; more effective communication for school employees, students and their parents; consultations during creating websites; modern web presentations that use the most up-to-date features; good price; etc.

By buying paid CMS it is not only getting CMS itself, but also many services that are connected with it. However, it is a question for every individual school, if paying thousands worth it, compared with so many CMSs that are completely free-of-charge.

1.4.2 Website@School

This CMS was developed from CMS *Site@School* that is, according to official web sites *Site@School* [20] free-of-charge content management system determined for schools, especially for creating teachers' and pupils' personal websites. There is also possible to add many extensions (for example guestbook, discussions, news, etc.). The interface of this application is completely in Czech language. However, after the release of newer *Website@School* in 2011 the support has ended for this application and so the Czech distribution. According to official sites of *Website@School* [21] the use of older *Site@School* is not recommended anymore because of the security reasons.

Both, *Site@School* and *Website@School*, are developed by a group of programmers in Netherlands and serves mainly for creating personal sites of teachers and pupils.

Besides CMS it is also a teaching tool for students for obtaining knowledge of HTML, CSS and working with CMS.

According to David Hromada [22] the greatest disadvantage of this CMS is that the Czech localization does not exist anymore for this up-to-date system. Besides this, the administration is confusing and chaotic. Also the design of created websites through this CMS looks completely outdated. Lastly, the support is not very current, because the last version has been released in 2012.

1.4.3 Joomla! as CMS for a school website

According to Jakub Běhouněk [23], the earlier mentioned CMS Joomla! can be very useful for school websites. It is mainly one of the cheapest ways of acquiring dynamic websites. Not only basic installation is free-of-charge: the most of the supplements, templates, plugins and other extensions are completely free.

The content of the school web presentation is usually modified according to the targeted group, or desired visitors of the web. These are: pupils, parents, teachers and potential applicant. Each group searches for different pieces of information that are usually connected in some way. There is also a necessity to pay attention to clarity and an appropriate structuring. School websites usually have both, static and dynamic parts. The static parts (for example Contacts, About School, etc.) are the easiest to make. They can be created through the basic installation of Joomla! and modifying them is also as simple as in for example MS Word. The dynamic, or dynamically generated parts (such as News, Timetables, Eating Menus, Gallery, etc.), can be made in various ways: some of them through basic installation of Joomla!, some of them through some extension.

There follows some examples of useful modules directly for school web presentations picked from more than ten thousand constantly expanding possible ones. As for News the function is already implemented in basic installation (listing of articles); for Gallery there are two possible extensions *JoomGallery*, or *Phoca Gallery*; for Timetables there is very well-known extension *Bakaláři*; and for Eating Menus there is an extension *Phoca Menu*, or a possibility to adjust the particular article straight in Joomla! basic installation.

Websites can be also completed by individual sites of teaching subjects with particular right assigning for desired teachers. Only these teachers then can adjust the sites. Also the menu is very easy to create, and breadcrumb navigation through an implemented module as well. There is no necessity of knowing much from programming to manage websites through Joomla!, because also an orientation in administration is very intuitive in both cases, basic installation and added extensions.

However, for the intrinsic realization of the web some knowledge in early mentioned fields is necessary. There has to be internet server with a support of PHP and MySQL and an empty database. Some installation files have to be uploaded on the server and then, after running it, it is necessary to follow the instructions of the installation. For the desired individuality of the website it is also appropriate to let some professional make an individual template instead of taking one from basic installation for the school web.

1.5 The best existing CMS

David Sedláček [2] finds very difficult to pick up the right CMS even thou he went through installation and working with dozens of content management systems. As he states, the levels of CMSs varies a lot. His article implies, that the most suitable CMS from several supporting Czech language is currently Joomla!, mainly because of the easiness of operating with the administration that can handle even less technically educated users.

On the other hand, team of portal Živě.cz [24] recommends in their article Drupal, as the best CMS of this age. Firstly they state that the Open Source CMS is definitely better than any other paid CMS mainly because of its continuous development, immediate support and the great savings. According to them, for Drupal speaks almost thirty thousand modules that enable practically unending variability for both, simple and very sophisticated websites. In a comparison with other two most widely used CMSs they state that WordPress is suitable only for blogs and Joomla! is not as free-of-charges as it seems for the first time (they mentions a lot of paid modules and paid support for a longer period).

The interesting thing is that despite the professionals' recommendation of Drupal and Joomla! from the previous articles, the most widely used CMS nowadays is still WordPress. It has been proven not only by the graph in Figure 1 included earlier in this thesis, but also in an article from Josef Kraus [25] based on a research made on his portal's official forum. Also in attached survey to the article 51% of more than one thousand respondents marked as the best CMS WordPress. Both, Joomla! and Drupal are with 17% and 9% far behind in popularity. It is a question, if the popularity of WordPress is caused only because of its simplicity, as the article indicates, or there is something more of it (for example professionals may have different scale than ordinary people, or, on the other hand, it could be easier for common people to take the most popular instead of trying something "new").

It is also important, as Jakub Běhounek stated [23], not to forget that CMS is quite useless without as many contributors as possible. In the case of school websites these can be not only teachers, but also pupils or even their parents. They all should be able to fill and update the web content regularly (and as frequently as possible). This process is, especially for pupils, also great education tool and for school often web updates have positive effect to the public.

1.6 Coding own CMS possibility

The main advantage of coding own CMS is the adaptation of the CMS to the particular project with absolutely clear code (without any useless lines). The fact, that coder understands the code completely and so has the absolute control that enables them for example to correct smaller or even bigger problems relatively quickly and effectively, is also beneficial. On the other hand, the obvious and significant disadvantage is the necessity of extended professional knowledge and the great volume of time. Additionally, the whole project mostly depends only on one person that can never be better than a huge team in a case of open-source CMSs.

In the case of deciding not to use existing but to code own CMS it is also necessary for example to think about the focus of CMS (whether the CMS is going to be on general websites, or used for managing surveys, forums, etc.). However, there are some other issues that are necessary to go through before own coding and that is

following chapters are going to be about. As Petr Sříbrný [26] advises in his post, it is also necessary to:

- know some suitable programming languages including those for managing with a database
- consider the use of frameworks
- choose suitable editor

The first one of these items is a very important issue while coding own CMS and this thesis did not deal with it so far. It is a choice of suitable programming languages. In a case of dynamic websites there have to be, besides HTML and CSS, also some scripting languages. There are many options in this topic, but, currently, there is a clear superiority in a use of some, as can be seen in Figures 3 and 4. In the Figure 3, there is a percentage of the server's side programming languages usage on all web servers. With its 82% currently, PHP is definitely a crushing leader of them. In the Figure 4, there is JavaScript as an indubitable leader of client's side programming languages. The more detailed comparison and description of particular web programming languages is in the chapter 1.8 of this thesis.

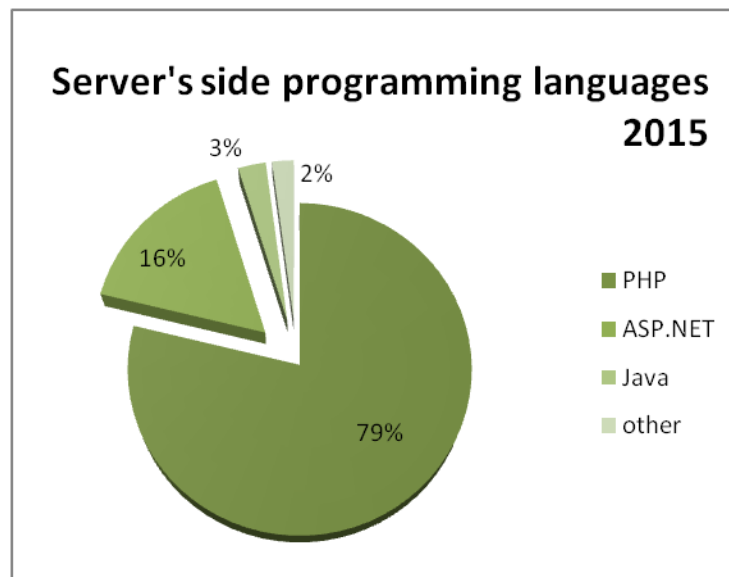


Fig. 3 Graph of server's side programming languages usage [11]

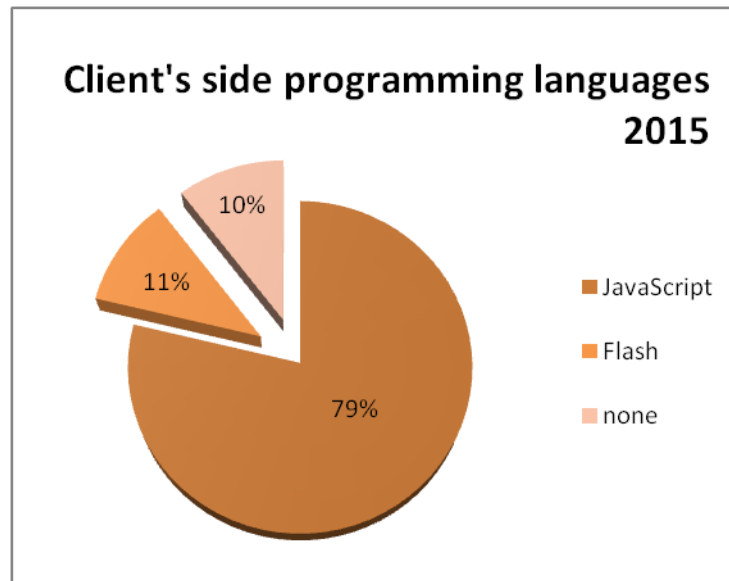


Fig. 4 Graph of client's side programming languages usage [11]

The next significant part of own CMS coding process is the use of framework consideration. It is a great option for simplifying whole programming process and can be a great time saver. Framework is a software structure that helps programmers or web creators to focus only on their tasks through the possibility of using existing applications, programs, libraries, etc. In web creating practice it means a usage of an existing (already written by someone else) part of code on own websites (for example guestbook). Despite the fact that it simplifies the work and so saves time, there is one big disadvantage of this: obtained code usually differs from the rest of the code and there can be also some useless lines of codes for particular project.

Besides choosing particular programming languages for coding websites, considering the use of frameworks and other already analyzed topics, the choosing a good quality editor that meets all necessary requirements is probably the second most important issue while coding own CMS (or anything at all). The following chapter deals with this issue.

1.7 Specialized text editors

Picking the right editor is in the case of dynamic websites much more significant than in the case of only static websites, because for static websites HTML syntax is not usually so complicated and there are not many individual tags, so it is even possible to write a simpler static website in a notepad. On the other hand coding in

languages such as PHP or JavaScript also combined with HTML could be called as programming and the resultant code is much more complex, chaotic and confusing even while following all structural rules. A specialized editor not only differs individual scripts by a different colour, but has also many other helpful functions.

There are two basic groups of text editors specialized on coding websites: already mentioned and defined so called WYSIWYG editors, and these that require writing raw and complete codes also called source code text editors. There follow some of the second group - because it is a group that is relevant to this thesis. They were picked up on the basis of the survey made by Josef Kraus [27], ordered from the most popular to the least and there was also added Aptana Studio as one of the most popular and widely used editor abroad as states for example an article by 1stwebdesigner.com [28].

1.7.1 PSPad

PSPad is a Czech freeware text editor created and developed in Delphi by Jan Fiala. According to Jan Fiala himself [29], PSPad was created in 2001 as a replacement for Notepad (with an extension of highlighting the syntax). Nowadays it is unbeatably most popular editor in the Czech Republic and one of its specific features is that PSPad is developed according to users' wishes posted on the program's official forum. According to official sites [30], the current version of PSPad is 4.5.8. from September 2014. PSPad is designed for three types of tasks:

- working with plain text, because it has many possibilities for its formatting
- creating websites, because it has implemented many unique functions designed especially for web creators
- programming - it is also an integrated development environment (IDE)

The main advantage of this program is its Czech distribution and the possibility of straight interference of its development. On the other hand, this program is designed not only for creating web and so it logically cannot be ever equated to other programs that are designed primarily and only for this.

1.7.2 Adobe Dreamweaver

Adobe Dreamweaver is, as follows from Adobe Creative Team [31], commercial complete integrated development environment for web applications development, it supports HTML(5), XHTML, CSS, PHP, JavaScript and much more. The first version was released by Macromedia Company only for Mac OS in December 1997, and then extended for Microsoft Windows in March 1998 as version 1.2. Adobe Company took over the development of this program in 2007 by releasing version 9.0. Current version of this software is Adobe Dreamweaver Creative Cloud 2014.1 from October 2014.

There are three basic modes in the interface of Adobe Dreamweaver program: design, HTML and split views. Design view is some kind of WYSIWYG editor - on the basis of placing desired elements program generates code automatically. HTML view is much more similar to classical source code text editor - it is necessary to have some knowledge in a field of markup, scripting and/or other programming languages to make websites through this way. Split view combines the two previous modes - it is possible there to make manual changes of the code while watching the demonstration of changes in practice (in other window).

As Petr Pecháček [32] writes, the main advantage of Adobe Dreamweaver is the complete solution of web creator's whole work - not only individual coding. For example it also enables to define local storage of every project and also testing and production servers with their mutual synchronization. On the other hand, this program is not free and so not for everybody.

1.7.3 Aptana Studio

Aptana Studio is an integrated development environment released by Aptana, Inc. Company that is distributed under an open source license. This program is designed for web applications development, it supports HTML, CSS, JavaScript and more (also through various plugins). Aptana Studio has developed from the *Eclipse* development environment primarily design for coding in Java. According to an internet server AfterDawn [33], the first version of Aptana Studio was released in 2009 and the current stable version is 3.6.1 from November 2014.

According to the portal Inيتد.cz [34], Aptana could act a bit robust for the first time, but its functions worth it. One of the best functions of Aptana is the warning and code inaccuracy report that, inter alia, prevents from useless functions, modules and classes implementation and so saves time. There are also various editors for different source codes. Finally, Aptana Studio 3 is a valuable and professional tool that can equal many other but paid programs with a similar focus.

1.8 LAMP technology

Whether coding CMS by programming languages or just using existing CMS, it is necessary to use services of some internet server. The term web server can be either the entire physical computer system (so called server appliance), or a software that handles with client's HTTP requests, as claims the internet portal Web Developers Notes [35]. Currently, on most server appliances, there is used so called LAMP technology that indicates a particular set of software installed, usually Linux OS, Apache HTML Server, MySQL and PHP (the first letters of these programmes' titles are where the abbreviation LAMP came from). Each element, or program, can be replaced by any other with a similar focus according to everyone's preferences. One of the main reasons of using these particular elements is that this whole assembly is completely free of charge.

Application (for example websites)	
Scripting (PHP)	
Web Server (Apache HTML Server)	Database (MySQL)
Operating System (Linux OS)	

Fig. 5 Scheme of the LAMP technology on a server appliance

In the Figure 5, there can be seen the structure of the LAMP technology. The features in brackets are the usual ones being used in practice. There follows the description of individual elements of this structure with an emphasis on PHP and MySQL, completed with JavaScript, because these programming languages and also a database system are a significant part of the topic this thesis focuses on.

1.8.1 Linux OS and Apache HTML Server

The Unix core based operating systems, or Linux OS, are contrary to its competitors (MS Windows, Mac OS, etc.) an open source software that enables it to be freely used, shared and adjusted with a possibility of further (even commercial) distribution. Based on the articles on their official websites [36] and the portal How-To Geek [37] are probably the best distributions of Linux: Ubuntu, Mint, Deepin, Debian, Fedora, etc.

The popularity of Linux as an operating system for a web server can be proven for example by a survey *Most Reliable Hosting Company Sites in January 2015* made by Netcraft [38], where six from the top ten web servers with the most reliable hosting had Linux as an operating system. The other operating systems made only a single appearance. In a total of forty-one servers, the representation of Linux servers was almost 70% that is proven also by the Figure 6 and showing the usage of operating systems by web servers since 2010 till 2015 that holds on almost 70% for Unix (Linux OS).

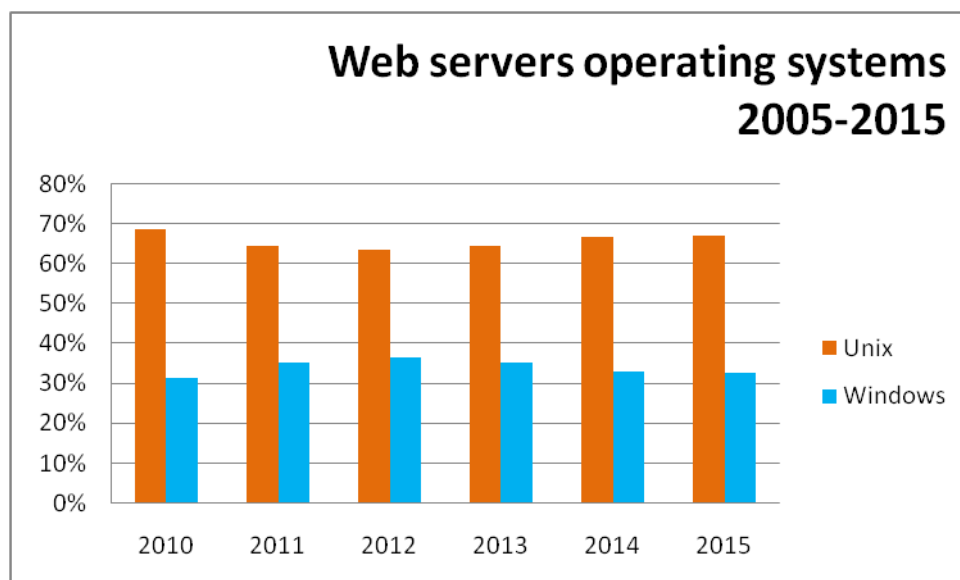


Fig 6 Graph of operating systems used by web servers in years 2005 - 2015 [11]

Apache HTML Server is open-source web server software supporting many operating systems, such as Linux, Microsoft Windows, or Mac OS. It is currently the most widely used web server software, as shows also a second survey made by Netcraft [39] in January 2015 where over eight hundred millions of websites were involved. The second most widely used web server software is from Microsoft that

was even the first one in July 2014, but from an overall perspective Apache is unbeatably most widely used through last twenty years.

According to their official sites [40], the history of Apache reaches to around 1993, when the project called *NCSA HTTPd* started to be developed by a Rob McCool in the National Center for Supercomputing Applications. However, soon after Rob McCool had left from the company and this project stopped in 1998. Meanwhile, thanks to Brian Behlendorf a Cliff Skolnick, this original project developed into a first version of nowadays Apache (with completely rewritten code) and released in 1995. The fact, that Apache has been very popular, is supported also by the percentage of its current usage as it can be seen on a Figure 7 below - almost 60% of all web servers had Apache HTML Server as its software.

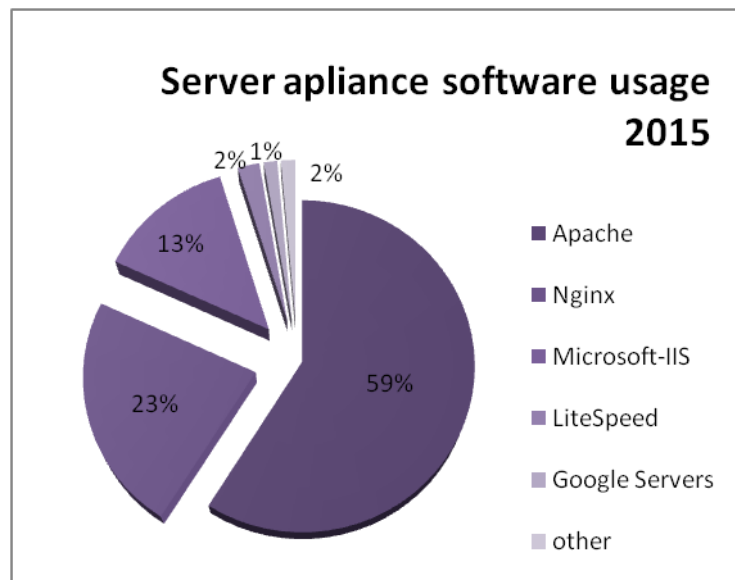


Fig. 7 Graph of server appliance software usage in 2015 [11]

1.8.2 PHP

PHP is a server-side scripting language that means the calculations are processed on the server's side, not client's (such as for example JavaScript). The abbreviation PHP had originally stand for Personal Home Page that was, according to the internet portal Garth [41], created by Rasmus Lerdorf as a tool for making his personal notes about readers of his curriculum vitae. The very first version of PHP was released in 1995, as an Open Source; Rasmus Lerdorf hoped for a help from others to improve whole project. There follows the versions of PHP that show its development.

- PHP/FI - or version two. The abbreviation "FI" stands for "Form Interpreter", because Rasmus Lerdorf added the tool for interpreting forms (concretely inclusion SQL queries and so accessing to databases - MySQL) as a response to increasing requirements for websites to this version.
- PHP3 - this version, started to be developed around 1997 by a group of people (not only Rasmus Lerdorf himself), got a subtitle Hypertext Pre-processor that it has nowadays, too.
- PHP4 - version released in 2000, it has got many improvements, such as adding support for many WWW servers, HTTP sessions, or adding new security issues. It is also much more effective than PHP3.
- PHP5 - the beta of the current version was released in 2003. In this version there is a great shift closer to object-oriented programming languages (as for example Java), also the error service is more sophisticated.

Currently, there is a version PHP 5.6 that was officially released on 28th August 2014. Concretely, as the official web [42] states, there is the latest version from 19th February 2015, known as PHP 5.6.6, that mainly fixes bugs from previous versions and makes slight changes and improvements.

For using PHP (and databases), it is necessary to have a computing device/s with the following things installed: PHP, Apache server, (PHP) editor, MySQL, and also a manual containing a preview of all PHP functions is quite useful and freely accessible through the internet.

According to Jakub Mach [43], the syntax of PHP is quite similar to JavaScript, Java or C++ that is relatively simple. It is also kind of intuitive, because the names of individual functions are often simply shortcuts of English words expressing their meaning. Programming language PHP also enables an automatic obtaining of variables, which means fewer lines of code (and so again greater simplicity).

PHP script is a text file with a suffix in the usual form of *.php. In this file there is a mixture of HTML and PHP codes that is very useful - no switching between HTML and PHP files (as it is for example between HTML and CSS) for editing this. The necessary signs for web browser to differ HTML code from the PHP one are "<?" or "<?php" for the beginning and "?>" for the end of a PHP code. It is important to end

each beginning and it is not possible to insert multiple beginnings and endings into the existing ones. Every PHP command also has to be ended by a semicolon. The priority of operations analyses is logical: usually from right to left, prioritizing multiplication and brackets in calculations as it is customary.

One of the most common commands is "echo" that lists given to the screen. Other basic commands can be divided into two groups: these determined for branching a program and these determined for making a cycle.

The first mentioned group of commands is used for a comparison of variables' values and, according to the result, choosing one of two or more possibilities in continuing with the code processing. These are called *conditions* - in a case of only two resulting possibilities and performed by a command "if" - and *switches* - in a case of choosing from more than two possibilities and performed by a command "switch".

From the commands determined for making a cycle the basic groups are following. A cycle with a condition at the beginning that is performed by a command "while" and it is based on testing a validity of a particular condition (for example a listing of a table with a condition of unread line presence). A cycle with a condition at the end that is performed by commands "do, while" and very similar to previous type of commands determined for making a cycle but with a condition testing process at the very end. A cycle for a set number of processes that is performed by a command "for" and it is the most flexible, but also difficult; there has to be a starting value, a condition and a value for an update of a cycle control variable (so called a cycle counter).

The variables are also very significant part while programming through PHP, where it is identified by the initial symbol "\$". It is a place in computer memory that refers to a named value. Due to this it is possible to save desired value under an arbitrary name and use this value later. The validity of the variable is variable and can last only for the time necessary to process a script or for a whole time some visitor spends on a website.

By declaring a particular data type to a variable, it is given the type of values that can be inserted into the variable. Despite the fact, that it is not necessary to declare

a variable beforehand in PHP, there follows, according to Jakub Mach [43], variables basic data types: *integer* for numbers from -2 147 483 648 to 2 147 483 647, *double* for decimals, *array* for multidimensional variables and *string* for a character string (texts).

There are hundreds of pre-defined functions managing various tasks in PHP programming language. Function is a kind of a subprogram, usually with some input parameter(s) that returns particular data on the basis of processing the input according to the function purpose. In PHP, there are implemented functions for changing to capitals or conversely, getting the number of signs in a string, string reversal, string repetition, generating random numbers, getting actual date and time, etc. The list of all functions can be found in a manual released by the developers and freely accessible (not only) from their official websites [42]. There exist also translated manuals into Czech with particular descriptions to every function. Besides the "built-in" functions that are already presented in PHP and solve mentioned usual, useful and/or basic tasks, there is also possibility to define own functions according to particular needs, of course. Functions are usually as a replacement for repetitive parts of the code.

1.8.3 MySQL database

As Jakub Mach [43] states, the database is a data store that enables browsing, extending or changing stored data. It is a set of tables with data of different formats (numbers, strings, binary files). Using the database for storing data is essential for every considerable website. MySQL is a multiplatform database system communicating through SQL, or Structured Query Language. MySQL was created in 1996 by a Swedish company TcX, later developed by company MySQL AB, nowadays owned by Sun Microsystems Company. It offers both, free GPL (General Public License) and paid commercial license. The main thought of whole project was to create widely accessible database system that MySQL, with the 56% share of all database systems as seen on a Figure 8 from March 2014 below, definitely is. MySQL has also a constant place in top three most popular database systems as follows from the ranking by DB-Engines [44].

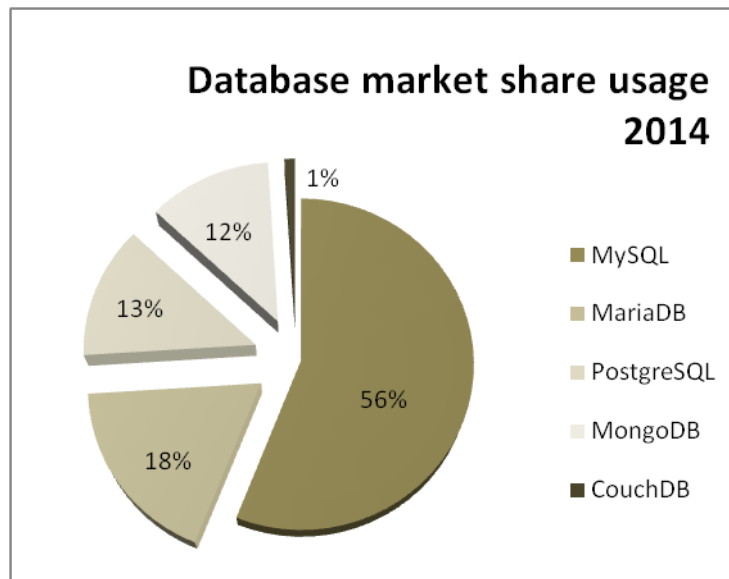


Fig. 8 Graph of database usage in 2014 [45]

According to Oracle Database, the Documentation Library [46] and Luboslav Lacko [47], the history of SQL, used for communication with MySQL database, reaches to 1970's when the Structured English Query Language (SEQUEL) was created as a set of commands with a syntax similar to a natural language for managing relational databases that had been researched during those years. A variant of SEQUEL, renamed to SQL, has been used in the most databases of that age, such as for example Oracle Database, Progress, SyBase, etc. SQL was standardized in 1986 as SQL89, 1992 as SQL2 and 1999 as SQL3 that is still valid. According to [48] there are five main groups of SQL commands. These are commands for data manipulation (for example "select", "insert", "delete"), commands for data definition (such as "create" or "drop"), commands for access rights management, commands for transaction management (such as "start transaction") and other or special commands.

Jakub Mach [43] lists as the basic SQL commands "insert" for inserting the data into the table, "update" for changing table items, "replace" for inserting or changing lines depending on their existence, "delete" for deleting a line and "select" for listing the table data. However, nowadays it is not necessary to know all the SQL commands, because there are user-friendly interfaces, such as *phpMyAdmin* or *Adminer*. These serve for an easier databases management simply by clicking on buttons such as "create new table" or "delete database" instead of writing SQL commands.

MySQL database focuses mainly on a maximal speed (the shortest response frequency as possible) that is a great advantage mostly for smaller internet projects. After creating a database through MySQL it is necessary to fill it with tables for storing required data. Each table has its items that can be declared by various data types. Very important item in every table is a column called ID. This column contains an identification of every single row in the table, it is usually numerical and it has to be unique.

To work with the data in a desired way, it is not enough to use only SQL commands, but it is necessary to use some programming language (PHP). Firstly, for connecting to the database server; then picking up the particular database and specifying a query; processing the result; and finally, for termination the connection with the database server. It is necessary to know the address of database on the server, name of an account and password for connecting to the database. The default address is *localhost*. After making connection with the database server and choosing the database by particular PHP function, it is possible to work with database using SQL through PHP function "MySQL_Query". The result of query is usually processed by PHP function "MySQL_Fetch_Array" for retrieving the data into an array (followed by for example displaying them as a table in the web browser).

1.8.4 JavaScript

Despite JavaScript is not the part of LAMP technology directly, it is definitely and very closely related to HTML, PHP and MySQL, if not even an integral part of these programming languages. An example can be a usage of forms that follows from the mutual link of HTML, PHP, MySQL and JavaScript. On the websites, forms can be used for registrations, searching, sending messages, surveys, etc. Through HTML elements of forms, such as text fields, radio buttons, or check boxes are created; through JavaScript there is processed the check of input data (if blanket places were filled and how) and PHP commands manage the work on server's side, such as sending and/or saving the data to the (MySQL) database.

As follows from Rastislav Škultéty [49], JavaScript is a multiplatform object oriented scripting language that enables evaluating form data, counting, or for

example creating various elements for making better web (for example simple games or flashing texts). It is also used for coding extensions for applications, but its usage through the World Wide Web is much wider. Syntax of JavaScript was developed from C++ and Java and as a creator of this language is considered Brendan Eich, as it is written by Lukáš Masopust [50]. It was firstly standardized by European Computer Manufacturers Association in 1997. Current version of JavaScript is, according to Nicholas C. Zakas [51], Edition 5.1 released in June 2011 with a scheduled update to the Edition Six for the mid of 2015.

One of the basic features of JavaScript is, according to the internet portal Tvorba-webu.cz [52], that it is dependent on internet browsers. All the counting is processed on the client's site, not on the server. This can be an advantage (everything is much faster), but also disadvantage, because it is also possible to easily turn off JavaScript by every user. In practice this means that the same script does not have to work in the same way (or even not at all) in different web browsers (versions) and users' setups and JavaScript also cannot work with files for security reasons.

For using the JavaScript it is necessary to have at least basic knowledge of HTML. Scripts created in any text or HTML editor can be freely added into a HTML file, or linked on files usually ending *.js. There are particular HTML tags for adding a script that should be, according to a script purpose, inserted in either head or body parts. Because of the earlier mentioned fact that JavaScript has not to be allowed always, it is usual to write signs for notes at the beginning and end of script for prevention of displaying the script as a normal text instead of its execution. Also it is necessary to pay attention on capital letters while writing JavaScript, because this scripting language differs them strictly.

2 Practical part

This part of Diploma thesis is a detailed description of the CMS to a particular school websites implementation. It is divided into three main chapters that represent individual stages or phases of this process: the preparation, the realization and the feedback.

In the first subchapter there are stated and described reasons for picking the type of CMS implementation and also for prioritizing one particular CMS over others. The realization part is substantial, because it deals with the implementation of the CMS itself, beginning with its installation, then creation of the particular template, making appropriate settings, adjustments and installing necessary plugins using the virtual offline web server and finally putting whole system online and thereby starting the full operation of new dynamic websites achieved also by necessary school staff training though preparing particular manual.

The feedback part is full of figures, charts and graphs because the chapter contains an evaluating process results comparison between the old static and the new dynamic web by Ondřej Neumajer's Auto-evaluating Assistant. Furthermore, the next chapter comments the web attendance development since its first full operation running in 2013 till now. Finally, there are the results of a feedback directly from the chosen school's employees gained through a survey concerning aspects of working with the particular CMS, its advantages and disadvantages, etc.

2.1 Planning CMS

The idea of adding a CMS to so far static ZŠ Horská websites came up shortly after their release in 2013. Despite the fact that ZŠ Horská is a small organisation and the static websites worked for it as well, it turned out that the issue of as frequent updates as possible is very essential even for smaller institutions. The other reason was to enable the content changes also for the direct school employees (that have no knowledge in a field of creating websites). The updating process was complicated and so lengthy, because it was done only by one person that has not almost any connection with the school order.

The only disadvantage taken into account was the necessity of a paid hosting, because the free ones have certain limitations that are generally not compatible with full-fledged CMS. However, the possibility of a user-friendly environment with a WYSIWYG editor, photographs uploading environment and other content adjustment tools for general people, was worthwhile.

2.1.1 The right CMS

The decision about the most suitable CMS for ZŠ Horská was not simple. As shows the theoretical part of this thesis, the coding of own CMS is definitely the best option from the first point of view. Through own coding it is possible to adjust CMS maximally according to the desired. However, there is one great disadvantage - besides the time and knowledge requirements it is necessary to make particular security elements that have to be continuously updated. On the other hand, some of the better existing CMSs have very sophisticated security methods that are being updated frequently and according to the newest trends.

From the reason that ZŠ Horská is a national organisation, the security is one of the core issues thinking not only about websites. Any hacking activities on the school web would operate very poorly for the institution. Also, ZŠ Horská is a non-profit and small organisation, so the paid CMS was not a possibility. The research done for the theoretical part, in the field of existing CMSs, suggests that currently available most widely used free CMSs are very well made, elaborated and frequently updated that means they offer very high performance. Not only because of these listed reasons, the final decision was for some existing CMS with the greatest possible further individual adjustment.

The question about using general CMS or some of the CMSs designed especially for school webs was quite clear. As the particular chapter in the theoretical part of this thesis suggests, there is currently no school web designed applicable in practice. Those listed have as many disadvantages that they cannot be called as applicable. This obviously does not apply to some school web designed CMSs in English, but the Czech distribution is very important for ZŠ Horská, because not every teacher understands English well.

Finally, the last decision was between the three currently most widely used CMSs: WordPress, Joomla! and Drupal. After the research done for the theoretical part, the WordPress was picked up as the best choice for ZŠ Horská websites, mainly for its simplicity (enabling further adjustment directly through code changes), wide use, security and frequent updates.

2.2 Coding CMS

While the type of CMS was chosen, the time for its implementation to ZŠ Horská websites came. During this process it was important to preserve as much data as possible from the old web, but also as much of the original or default WordPress code. From this reason, the usage of WordPress was mainly for its internal interface and security, which means the visual part of new websites, from the visitor's point of view, should be the same, or almost the same as the older web.

On the assumption of putting together the administration environment of WordPress and the design of the original web, which is the topic this chapter deals with, the main coder's work consisted of programming individual template properly. For this it was very helpful that WordPress has its own codex put online. This codex contains all default WordPress functions, structures and commands with detailed descriptions and suggestions of their possible modifications.

Next core thing while using WordPress is the use of various plugins. There are many weaknesses of the basic installation that can be easily solved by some suitable plugin. Also the timing is quite important while re-creating websites. It is better to make whole new web and test it before its release. And the last but not least issue that came up during coding new WordPress based ZŠ Horská websites and this chapter is dealing with is the staff training necessary for the full and proper use of new CMS.

2.2.1 Preparation

While using PHP and database it is very useful to have some virtual server installed, because there is not necessary to keep copying the data on the internet server and even it is not necessary to be connected to the internet at all. One of the well-known and used in this particular case program for creating an "offline

server" is WampServer. It is a development environment for Windows that enables creating web applications through Apache, PHP and MySQL database. There is also PhpMyAdmin, SQLiteManager and an intuitive interface with a possibility of adding an unlimited number of Apache, MySQL and PHP versions.

The next step in implementing particular WordPress based CMS to ZŠ Horská websites was to install the WordPress on the virtual server and to get some knowledge about this CMS. The installation process was very easy - it is made also for general users with only a basic computer literacy. Also the user interface of WordPress is very intuitive and becoming acquainted with the basic functions, utilities, settings possibilities and hierarchy did not take much time.

However, the understanding of the code and the hierarchy of the individual parts (or sites) processing and displaying procedure was much more time consuming. Obviously, WordPress has some functions file and other internal and core files that should not be modified at all, but there are also folders that are designed to be changed, for example the one with the name "templates". There are some default templates, but to reach some individuality it is almost an obligation to make own personal template. This can be made on different levels, from adding several basic files in HTML and CSS to rewrite core WordPress PHP functions. There follows the description of making ZŠ Horská template that was created with an attention to a maximal adjustment for the particular websites requirements.

2.2.2 The template

As Vladislav Musílek [53] suggests in his article, for the full-fledged template there is recommended to create around fifteen files. These include the core ones, such as index.php, header.php, footer.php, style.css and functions.php; and others ensuring for example listing articles history, sidebar implementation, showing the detail of the post, or the "page not found" site. WordPress based websites works as follows. The system loads functions.php and listed functions are proceeded or registered, then header.php (containing mostly a logo, menu, or slider), index.php (or other file with the appropriate content according to the template hierarchy) and footer.php are called. The content files are called progressively according to their name relevance, ending by index.php, if more relevant is not found.

For the ZŠ Horská template, there are following files, ordered alphabetically: 404.php, category.php, comments.php, footer.php, functions.php, header.php, index.php, page.php, reset.php, sidebar.php, single.php and style.css. Header, footer, and cascading style sheet files are very similar to existing ones in the static version of the web. There are only some smaller adjustments. In the index file there is added a function listing all new articles from all categories and their formatting. The 404 file is only a static site announcing that there is no site meeting specified criteria and offering alternatives. Page, category and single are the templates for displaying page, the list of posts in a particular category and a single post with desired formatting. Sidebar is empty, because ZŠ Horská template does not have any sidebar, but it is necessary to include this file for displaying the template in administration interface as an option.

In functions file there is specified the number of menus that can be chosen in the administration and their names (locations are specified in header.php). There are also two functions for specifying the maximal length of a post while listing more of them and the formatting of displaying single post. Finally, the comments file is the most interesting one, because it is adjusted especially for a guestbook. It contains functions for a comment form, listing comments and their formatting; these functions are slightly modified in the system core comment-template file.

2.2.3 Plugins and other adjustments

There is an incredible amount of plugins for WordPress, but there is also one great disadvantage along them. Mostly they are not from the WordPress developers and so they can have bugs and they globally do not fit in the administration interface faultlessly. Their development is different, which means they are updated on a different basis (and it is necessary to keep updating them manually). These all are the reasons why it is not very comfortable to use them at all.

On ZŠ Horská websites, there is only one plugin. It is for displaying the photo gallery, because basic WordPress installation does not enable to sort the pictures into various folders. The chosen plugin is called *NextGEN Gallery* and it was chosen mainly because of its great usage and overall popularity. This plugin adds a button into the both, administration interface and WYSIWYG editor. It is possible to

upload images into particular folders, called galleries, and superior albums (groups of more galleries). Then it is possible to display individual galleries, or list them through displaying a specific album in both, posts and pages.

In a case of ZŠ Horská, the photo gallery was created through individual pages for each school year filled with the particular album containing galleries from various school actions. From the coding point of view, there were made modifications mainly in the formatting and styling of displayed photos and galleries.

Within making template it was also necessary to make particular modifications and settings in an administration environment that was not much difficult and did not take much time, because whole interface is very user friendly with many help possibilities and so there was no need of extended computer literacy or further studying.

2.2.4 Running full operation

The next step after creating the template and making additional adjustments was putting the websites online. For this it is necessary to have some domain and hosting with a full support of databases. Unfortunately, the most of free hostings do not support everything that is required by WordPress, which means the paid hosting is needed. For ZŠ Horská the hosting from *Wedos* was chosen that is currently the most widely used and mostly described as the best. After getting the hosting, the WordPress could be installed there. To avoid any bugs and other problems accompanying the creation of the websites, the domain remained to the old hosting and web in the meantime.

After installing the WordPress, making necessary settings, uploading and activating prepared template, the websites were prepared to be filled by proper content. On ZŠ Horská websites there are twelve static pages and seven categories (lists of assigned posts) divided in three menus with a total of fourteen items. Three of the static pages are subpages of the photo album page containing galleries showing albums from various events in three past school years (each page is for one school year). There is also a page that has comments allowed and so serves as a guestbook for visitors with a possibility of simple individual posts administration

through the WordPress interface. One category, called news, is a news feed - a list of all new contributions to all categories or also without a category and it is displayed on the index page of the web.

The most of the static pages content was taken from the old websites and modified to fit to the style of prepared template paying attention to the smallest possible differentiation from the original web. The greatest changes experienced the sections photo album and guestbook that have currently completely different technical background than in the previous web. As it is written earlier in the practical part of this thesis, the photo album is solved through the *NextGEN Gallery* plugin and the guestbook is coded through the modification of default comments function in the basic WordPress installation.

As the dynamic categories they were chosen mostly individual parts of organisation listed in the third menu with a thought of contributing by all employees according to their affiliation. In practice, there are categories for Horská Elementary School, Horská Nursery School, Lesní Elementary School, Lesní Nursery School and Dělnická Nursery School. There is also a category for ZŠ Horská organisation as a whole for publishing events involving all its parts.

The final step in running new WordPress based websites in a full operation was, after filling it, the domain transfer. This was carried by changing settings and properties on the domain provider's side, through their official websites and it took about one day before the changes took effect. After this, there was uploaded a short announcement about the web transfer to the old hosting's free domain.

2.2.5 Manual for staff and user permission levels

From the reason that the computer literacy is very low through ZŠ Horská employees, there was prepared also a manual for them to help with the first steps in WordPress administration interface within this thesis. The manual in Czech is included as Appendix 1. It contains following chapters: registration, login, personal information and authorization, posts and photos. In these chapters there is a detailed description of the particular steps completed by graphic illustrations with suitable highlights on appropriate places.

The main focus of first part of the manual (the first three chapters) is on registering, its e-mail confirmation, followed by login, changing password and filling other important personal information such as full name and the type of its displaying. The second part of the manual is focused on the web contribution, it explains how to add, write, edit or delete a post, how to assign right category to it and how to work with the WYSIWYG editor. There is also indicated the basic *NextGEN Gallery* hierarchy with a description of adding, editing or deleting possibilities through both, button in WYSIWYG and the one direct in the administration.

Unfortunately, there are no instructions for managing comments in the manual. It is because the basic WordPress installation does not enable managing comments belonging to pages created by someone else. Generally, the user permission levels system is not very sophisticated, but still complicated. Whereas the system is implemented only for a short period so far and so there is not a sufficient amount of data necessary for concrete user permission levels modification particularly for ZŠ Horská organisation, there was kept the default structure in the meantime that is as follows.

There is only one main administrator that is also the creator of the web and has all permissions. Each new user starts with a subscriber permission level. This level is able just to see some unimportant parts of the administration interface. After manual authorization (identity check by the main administrator), every teacher, or other organisation employee, gets the author permission level that is able to add, edit and delete posts and media files (such as photos or text files). After some shorter probation, the headmaster is going to have an editor permission level that means she will be able to change also the static content of the web and contributions of others.

2.3 Final evaluation and other results

Unfortunately, this chapter is influenced by the lack of time the CMS is currently running on the websites. There can be only a very small amount of data gathered up to now. However, there follows the comparison of the current Auto-evaluating Assistant results and those got two years earlier. Interesting is also the

development of web attendance through past two years, analysed and commented in this chapter, too. And the last issue is the results of a survey focused directly on the handling with CMS WordPress by particular employees of organisation ZŠ Horská.

2.3.1 Auto-evaluating Assistant previously and now

As from my Bachelor's thesis [6], ZŠ Horská websites got sixty points as a static web two years ago that was a web above an average, marked as a "helpful school-web". Its main strengths were from the area of contact information on the index page, important school year's dates, photos, communication, interactivity and feedback, frequency of revisions and information validity, usability, accessibility, security and copyright. On the other hand, the main weaknesses were about school introduction, school educational program, school evaluation results, subscriptions and free access to information.

The current dynamic web got, according to the Auto-evaluating Assistant [54], seventy-one points and so it is marked as a "good school web" with an assignment to the better part of school websites found through the Czech internet. It should play a significant role in a communication with school clients and it should also be built by enthusiasts that realize the importance and possibilities of an electronic communication.

Compared with the results from the previous evaluation made two years ago, there was an improvement mainly in the area of editorial board and content publishing. This effect was predictable, because the most significant change made on the web was the transformation from statics to dynamics and so enabling the web contribution share for more people than just one administrator. The second improvement lies in addition of information about school, including school educational program, that made two items from the web's weaknesses disappear. There remain only three areas as negatives: school evaluation results, subscription and free access to information.

2.3.2 Visitors

The development of the statistic of attendance, according to Toplist [55], is as follows from the Figure 9 below. By April 2015, the websites visited approximately 3550 visitors in total with 220 visitors per a month or seven per a day as an average, but the number of visitors varies a lot with months changing.

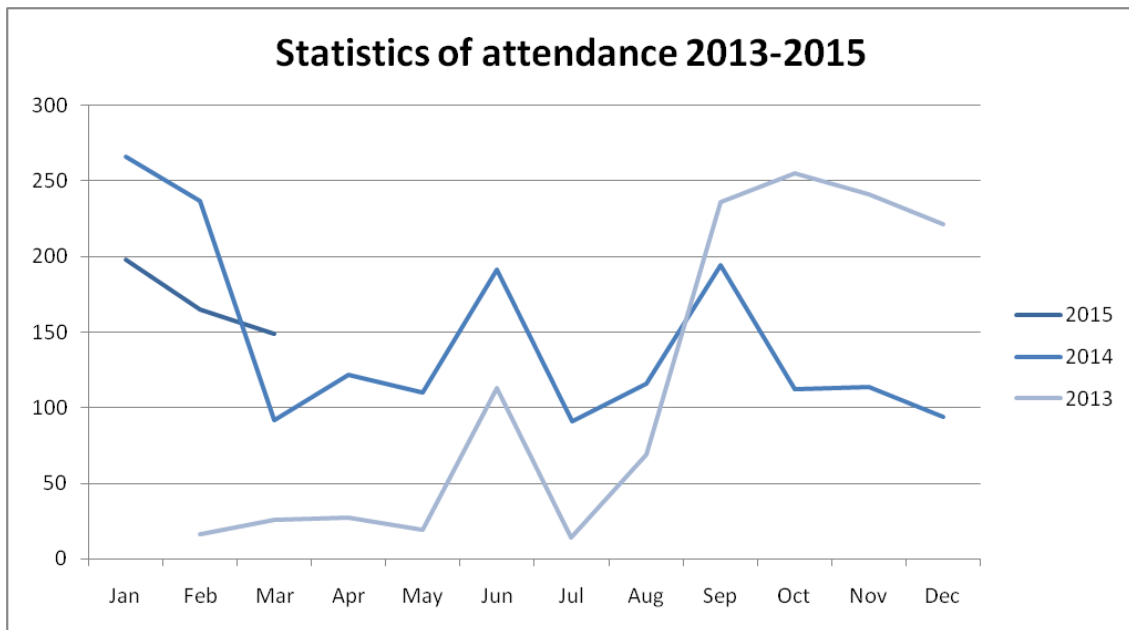


Fig. 9 Graph of visitors numbers on web ZŠ Horská through years 2013-2015 [55]

Firstly, it is necessary to count with the influences by a web start-up through 2013 and only a short period measured in 2015. Therefore, the most relevant data can be taken into an account from year 2014. Probably the most important fact is the significant increase in months June and September that is logical, because in September the school year starts and in June it ends. The busiest month is definitely January so far that can be caused by the fact that school year is in its half. Currently there is a constant drop in attendance, but the CMS is implemented for a very short period, so this will probably take an effect after a much longer time.

2.3.3 Survey

The survey made for teachers about handling with new CMS based on manual that is further described in chapter 2.2.5 of this thesis has the following results. A total number of teachers within ZŠ Horská organisation was involved in this survey; which means nine respondents. The other employees were not involved due to

organizational reasons. There follows the set of figures representing the results of each question stated as the figure name followed by a final conclusion.

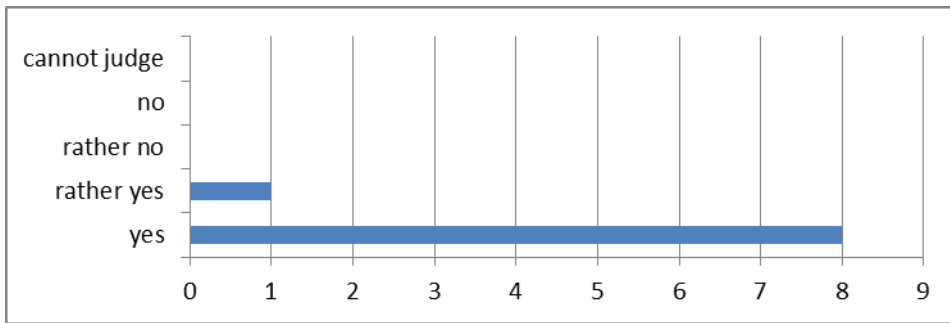


Fig. 10 Do you consider CMS implementation as a good progress for the web?

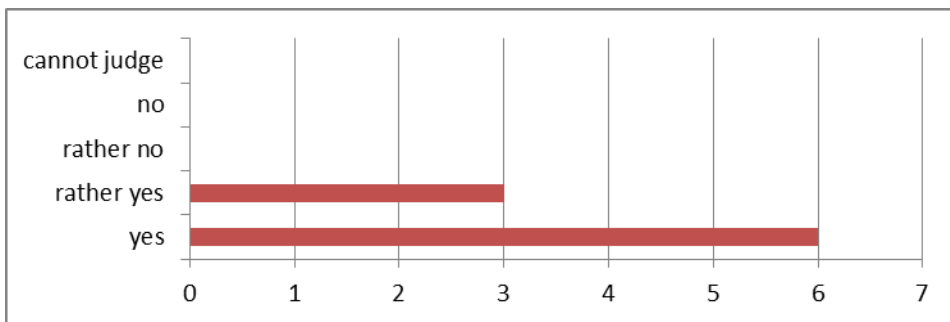


Fig. 11 Do you consider the UI as simple and synoptic?

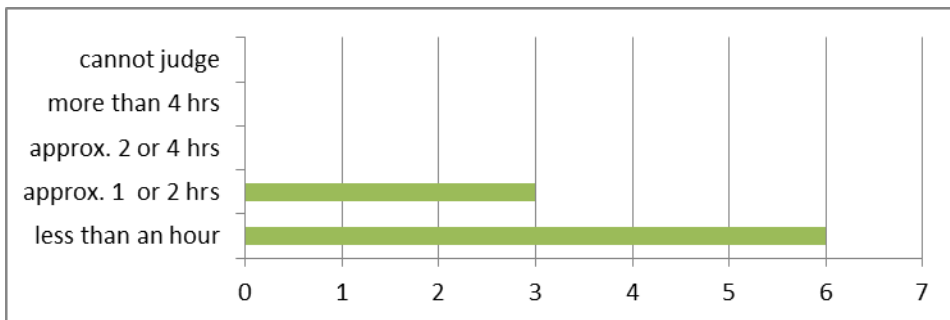


Fig. 12 How long did you take to orientate yourself throughout the CMS?

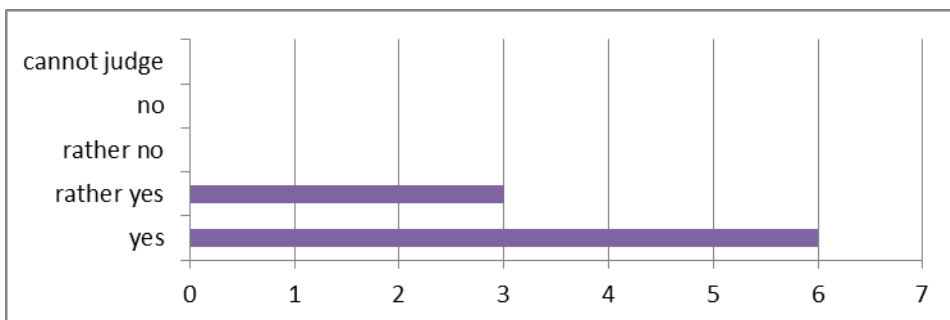


Fig. 13 Are you satisfied with the functions of the CMS?

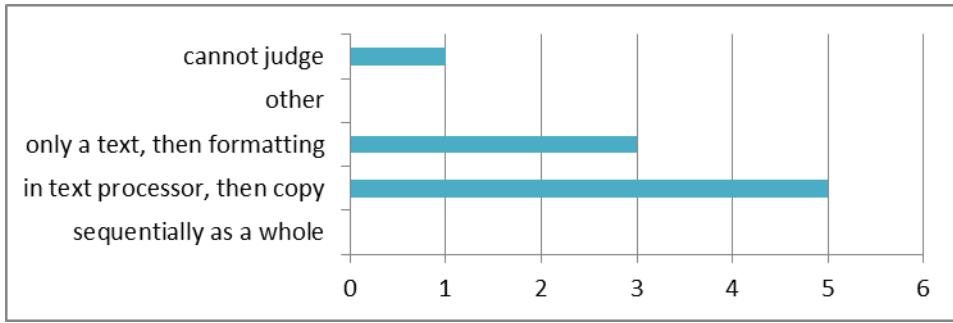


Fig. 14 How do you proceed in writing a new post?

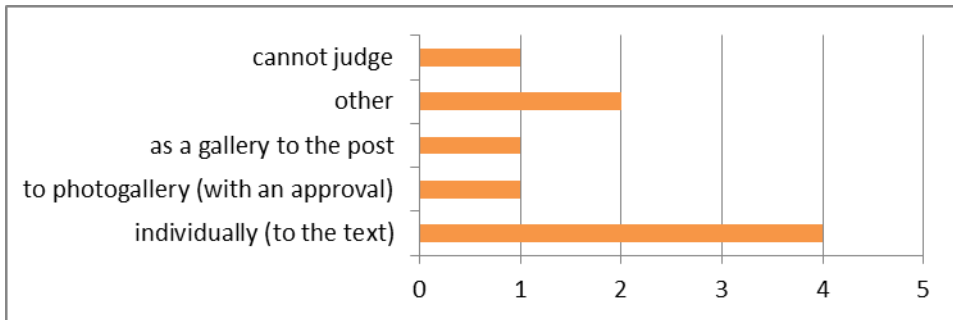


Fig. 15 You prefer inserting photos:

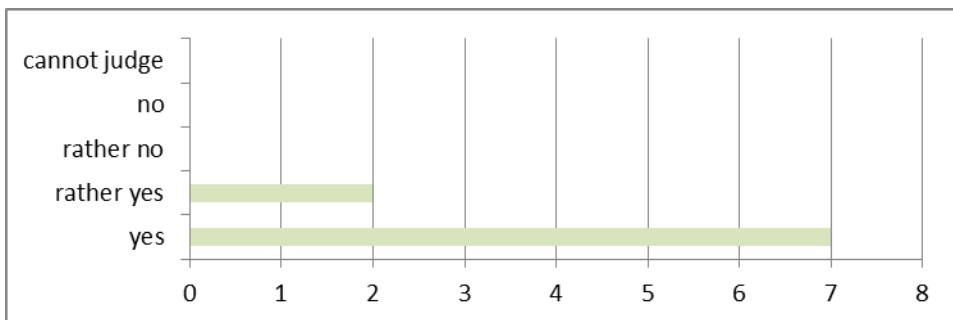


Fig. 16 Is the commentary system in Guestbook clear, understandable and simple?

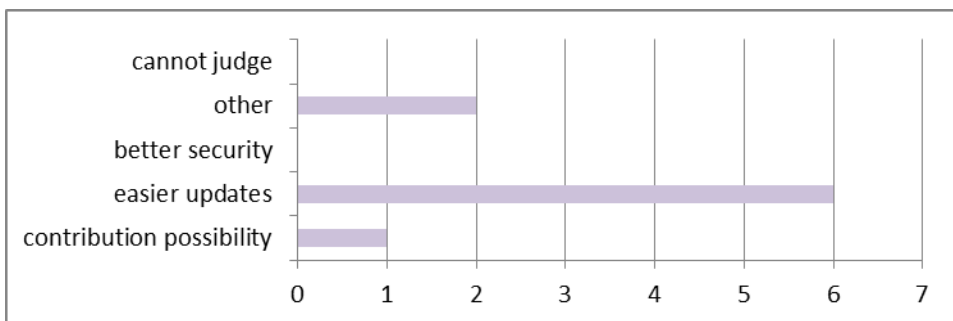


Fig. 17 What is the biggest benefit of the CMS?

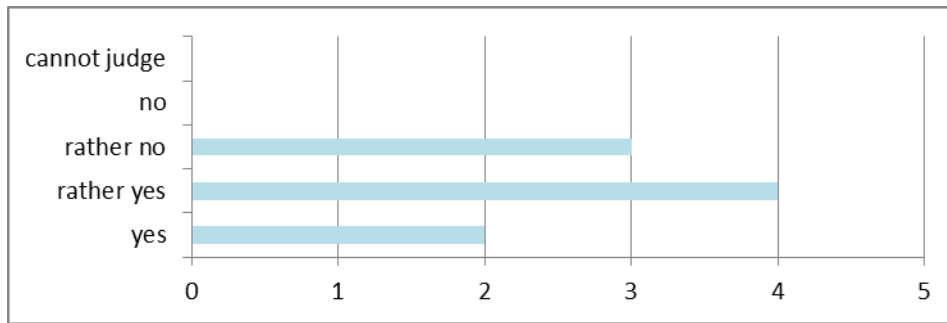


Fig. 18 Will you use the CMS for the web contribution by yourself?

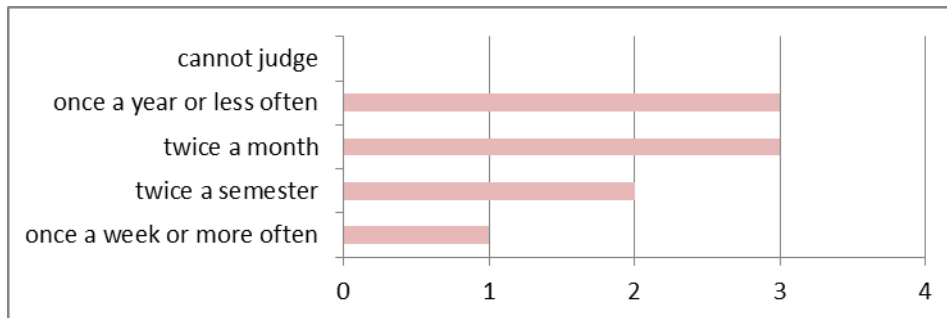


Fig. 19 How often do you plan to contribute/are you contributing?

The first question is also the one with the clearest answer. All respondents think that implementing the CMS to the web was a positive progress for the web. The user interface was also accepted positively - definitely by six respondents and rather yes by the remaining three of all. This same (very positive) ratio is also in the case of questions four and seven - respondents agree with the simplicity and clarity of Guestbook comments system and they are satisfied with the functions of new CMS in general.

Only two questions got one "cannot judge" answer and in both cases they concern single functions of the CMS that indicates the questions in survey are clear. The "other" option was chosen two times by only two respondents (four answers in total). One of these additional answers was to the question number six that is about inserting photos. The filled answer was "I would rather not insert photos" that is negatively interesting while the website with photo gallery is the one usually with the biggest attendance. The question six is also the one most inconsistent - as the only one it has all possible answers chosen by at least one respondent (other questions have at least one answer remained unselected).

The most inconsistent question is the final one that is very interesting, because despite the fact that respondents agreed in the importance, simplicity, convenience

and overall positive influence of the new CMS, they are not so united in its usage and so the frequency of their own contributing. The most of them share is the plan of contributing twice a month and once a year or less often, two of them twice a semester and only one of them wants to contribute once a week or more often.

Conclusion

As the conclusion I would like firstly summarize whole thesis. The main goal of this thesis was to collect data about various ways of implementing CMS with an intension to make CMS for particular school. For the theoretical part I have studied many sources, mainly electronic, but I also get some information from printed ones. I tried to withdraw the most important issues from all these sources that are related to the topic and assignment of the thesis. As it had concluded from all of these theoretical studies, the best choice of CMS for ZŠ Horská was to install existing CMS WordPress and adjust it as much as possible. This issue is further described in the practical part of this thesis and so shows the second of this thesis' greatest benefits - the real CMS on real websites implementation.

In the future, I would like to develop the CMS much further. For example, the roles and their competences will be nice to be adjusted more, because this needs some more time to show the particular needs in this matter. Also the plugin NextGEN Gallery is not absolutely perfect in many ways: new galleries do not appear in the news feed and there are only names of albums instead of individual galleries in particular sites. For the future, it will be suitable to find other plugin, or adjust core codes of the existing one. Also, after some more time, there is a plan to make regular backups of the web for the case of problems with hosting storage.

It is also planned to eliminate at least some of the remaining negatives from Auto-Evaluating Assistant that were previously described in my Bachelor's thesis [6]: "school evaluation results – on the web there should be accessible the results of school's educational process mainly by the Czech school inspection; subscription – there should be a possibility of subscribing for example RSS channel for getting news by interested people; free access to information – all the published information should be actual and in a publically accessible form – for example (X)HTML or an OpenDocument".

These are actually not such a problem for the type of school ZŠ Horská is. There should be definitely the results from school inspection, but it is only a matter of time to fulfil this, because it is nothing complicated from the coding point of view. The possibility of subscription RSS channel is quite useless for such a small

organisation, I think, so it is not even planned to enable this yet. Actually, the only real problem remaining is the free information access issue. Unfortunately, it depends mainly on web contributors to eliminate this. However, the WYSIWYG editor that is included in WordPress basic installation and supports copying from MS Word could help to fix this problem a lot in the future.

To sum up, the practical use of my work is a fact that the base of right, successful and appropriate web has been created. For ZŠ Horská it means a significant progress in the way of their internet presentation. It is only the matter of time when the contributors take their opportunity, spread this to the wider range of ZŠ Horská employees and contribute often. If succeed in this, the vision of perfect school web will be fulfilled.

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Appendices

Appendix 1 - Manual for ZŠ Horská employees

Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

Obsah:

1. Registrace
2. Přihlášení
3. Osobní informace a autorizace
4. Příspěvky
5. Fotografie

Vítám vás u návodu k obsluze administračního systému WordPress nově implementovaného do webových stránek Základní a mateřské školy Horská 256, Vrchlabí. Tento návod by měl provést i málo zkušené uživatele registrací, přihlášením a základní orientací v uživatelském prostředí WordPressu. Měl by uživatele naučit přidávat příspěvky, fotografie a komentáře spolu s jejich základní správou.

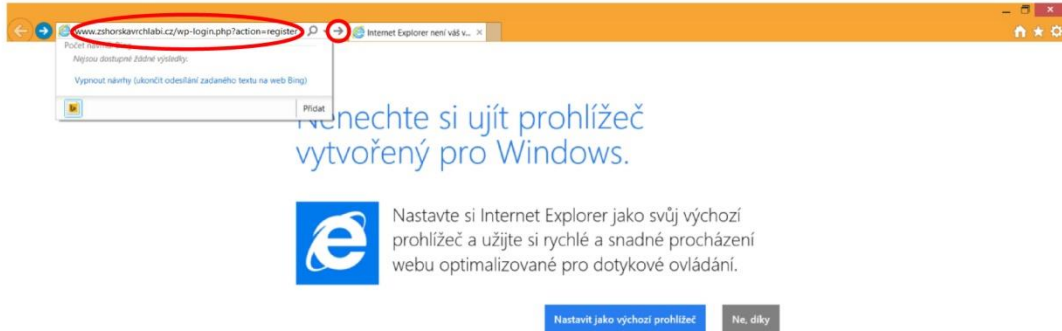
Další užitečné informace lze nalézt na webu www.pressio.cz, je zde mnoho dalších a i pokročilejších postupů a návodů pro práci s WordPressem. Vzhledem k tomu, že jsem pro potřeby webu systém upravila, není zcela jisté, že budou všechny tamější postupy fungovat. V případě jakýchkoliv dotazů mě kontaktujte e-mailem na adresu atewi@email.cz.

Iveta Procházková, webmaster

Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

1a. Registrace: Do prohlížeče zadejte adresu www.zshorskavrchlabi.cz/wp-login.php?action=register a potvrďte (klávesa Enter, nebo šipka vedle adresy "Přejít").

Pokud to nefunguje: Pečlivě si překontrolujte správnost zadaných znaků, každý jeden je důležitý.



1b.

Uživatelské jméno
prezdivka

Email
mail@email.cz

Heslo vám bude automaticky zasláno emailem.

Registrace

1b. Nyní si zvolte své uživatelské jméno, což je jméno, které budete zadávat vždy při přihlášení a zadejte ho do příslušného pole. Dále je třeba zadat e-mailovou adresu, ke které máte přístup - obratem Vám na něj bude zasláno automaticky vygenerované heslo.

- stiskněte tlačítko "Registrace"

2. Přihlášení: do tabulky zadáte své uživatelské jméno a heslo (z e-mailu ho do tabulky překopírujete nebo přepíšete). Je nutné rozlišit velká a malá písmena.

- rozhodně nezaškrtněte tlačítko "Pamatovat si mě" (heslo budete měnit hned v následujícím kroku) a stiskněte tlačítko "Přihlásit se"

2.

Uživatelské jméno
prezdivka

Heslo
.....

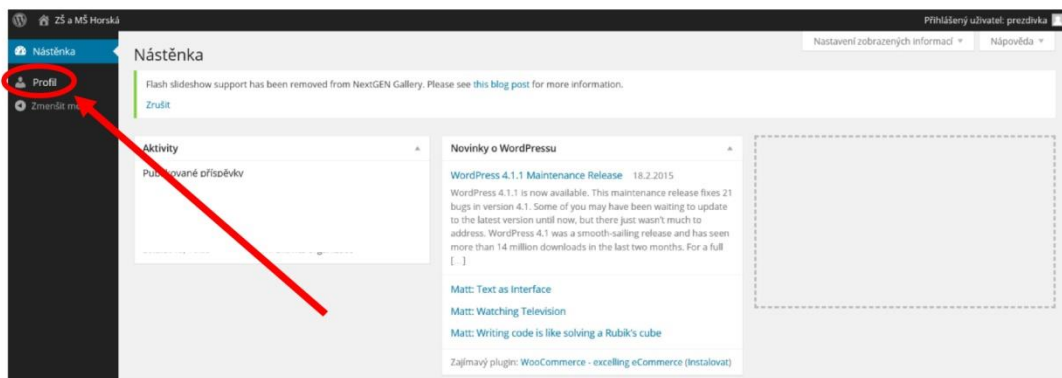
Pamatovat si mě

Přihlásit se

3a. Osobní informace a autorizace: pokud jste všechny předchozí kroky dodrželi, mělo by dojít k úspěšnému přihlášení do systému.

- jako první je nutné vyplnit základní informace o sobě a také důrazně doporučuji změnit heslo

- v levé části obrazovky se nachází černé menu, ve kterém kliknete na položku "Profil"



Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

3b. V záložce "Profil" nás zajímá střední část obrazovky, ve které je potřeba vyplnit hlavně jméno a příjmení (z důvodu identifikace pro autorizaci).

- dále doporučuji nastavit pole "Veřejně zobrazovat jako" na konkrétní jméno a příjmení (takto bude zobrazeno např. autorství u příspěvku)

Profil

Flash slideshow support has been removed from NextGEN Gallery. Please see [this blog post](#) for more information.

Zůstaťe

Osobní nastavení

Barevné schéma administrace

Základní Světlé Modré Káva

Ektoplazma Půlnoc Oceán Svítání

Navigační lišta

Zobrazovat navigační lištu při přihlášení webu

Jméno

Uživatelské jméno prezdivka Uživatelské jméno nelze měnit.

Jméno Iveta

Příjmení Procházková

Přezdívka (vyžadováno) prezdivka

Veřejně zobrazovat jako Iveta Procházková

3c. Jako poslední opravdu doporučuji změnit heslo na nějaké vlastní, snadněji zapamatovatelné, které se zadá do dvou polí - viz níže.

- heslo je třeba zvolit takové, aby dolní indikátor hlásil něco jiného, než "Velmi slabé", jinak vás systém nepustí dál - pokud toto indikátor hlásí, zkuste např. přidat číslo, nebo nějaký symbol

3d. Nakonec je třeba kliknout na tlačítko "Aktualizovat profil" a tím všechny změny potvrdit. Po tomto kroku je nutné počkat, dokud nebude účet autorizován, což je zpravidla do 24h.

- že byl účet autorizován poznáte podle toho, že se po přihlášení v levém černém menu zobrazí podstatně více položek (viz obrázky níže)

Profil

Webová stránka

O vás

Osobní informace

Zde můžete napsat základní informace o sobě (co děláte, co máte rádi atd.), které mohou být veřejné.

Nové heslo

Pokud chcete změnit aktuálně používané heslo, zadejte prosím nové, jinak můžete nechat toto pole prázdné.

Potvrdit nové heslo

Zadejte nové heslo pro kontrolu ještě jednou.

Slabé Nápověda: Zvolené heslo by mělo mít alespoň 7 znaků. Bezpečnější heslo získáte použitím velkých a malých písmen, číslic a symbolů jako např. ! ? \$ % ^ & ;

Odhlásit ostatní aktivní relace

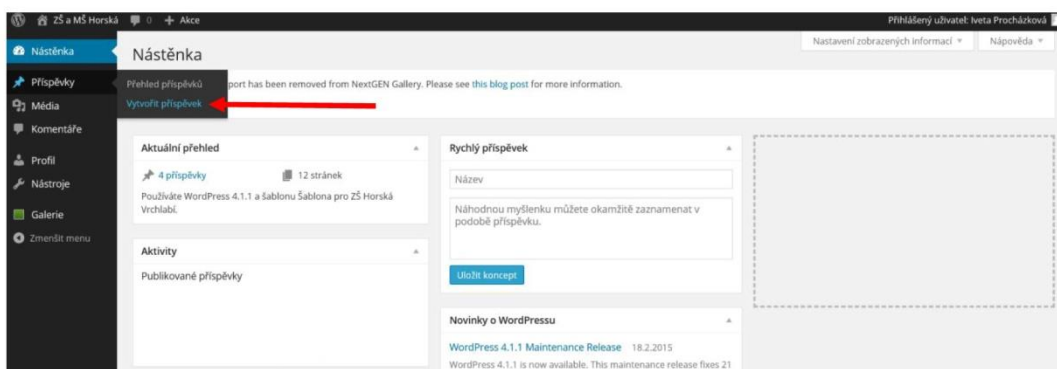
Jste přihlášení pouze v rámci aktuální relace.

Aktualizovat profil

Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

Administrace WordPress na webu ZŠ Horská je založena na možnosti práce se třemi základními typy modulů: příspěvky (rubriky), fotografie (galerie, alba) a komentáře. Tyto moduly lze do webu libovolně vkládat, dále editovat (upravovat), nebo mazat. V následujících řádcích jsou postupně popsány podrobněji.

4a. **Příspěvky:** Nejdůležitější modul, který spolu s fotografiemi využijete asi nejvíce. Příspěvky lze vkládat do rubrik. Na webu ZŠ Horská jsou následující rubriky: Aktuality (na hlavní stránce), Aktivity organizace, ZŠ Horská, MŠ Horská, ZŠ Lesní, MŠ Lesní a MŠ Dělnická. Pro vložení příspěvku je třeba najet myší na záložku "Příspěvky" a následně kliknout na "Vytvořit příspěvek".

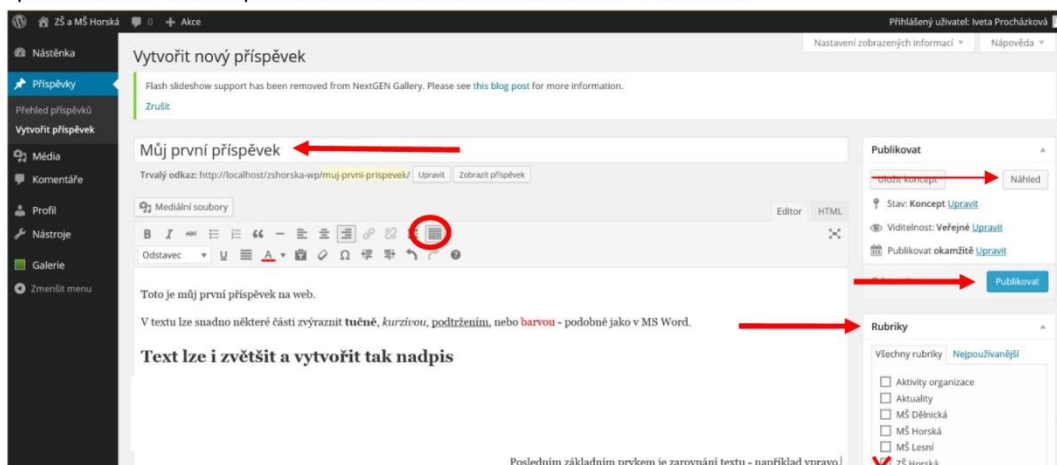


4b. Do prvního malého pole vložíme nadpis příspěvku (v příkladu *Můj první příspěvek*) a do druhého většího píšeme obsah příspěvku. Textový editor je podobný např. programu MS Word, doporučuji rozkliknout "rozšířené možnosti" viz kroužek na obrázku.

- ať již během psaní, nebo po dokončení příspěvku, doporučuji nejprve zobrazit náhled příspěvku tlačítkem "Náhled" a celý ho překontrolovat - tak bude příspěvek zobrazen na webu

- ještě před odesláním příspěvku na web je nutno v pravé dolní části zvolit příslušnou rubriku, do které má být článek zařazen (podle toho bude mít umístění na webu, zvolíme-li tedy rubriku "ZŠ Horská" bude k nalezení po kliknutí na položku menu ZŠ Horská); pokud žádnou rubriku nezvolíme, článek se automaticky publikuje pod rubrikou "Aktuality" a zobrazí se na hlavní stránce, kde je zároveň zobrazen i každý nový článek publikovaný pod jinou rubrikou

- po dokončení všech úprav stačí kliknout na modré tlačítko "Publikovat"

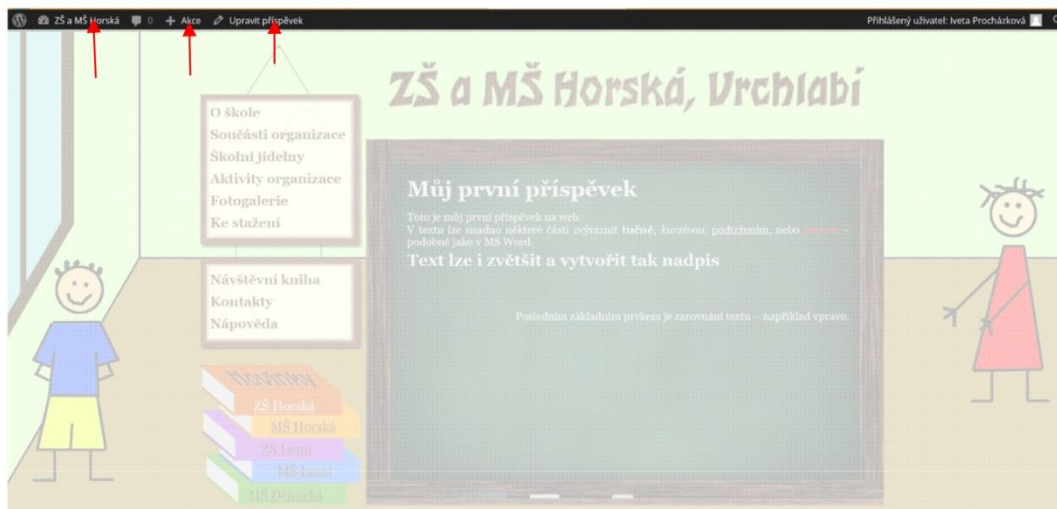


Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

4c. Abychom si mohli právě publikovaný článek prohlédnout, klikneme buď na již zmiňovaný "Náhled", nebo nově objevený odkaz "Zobrazit příspěvek" v horní části stránky.

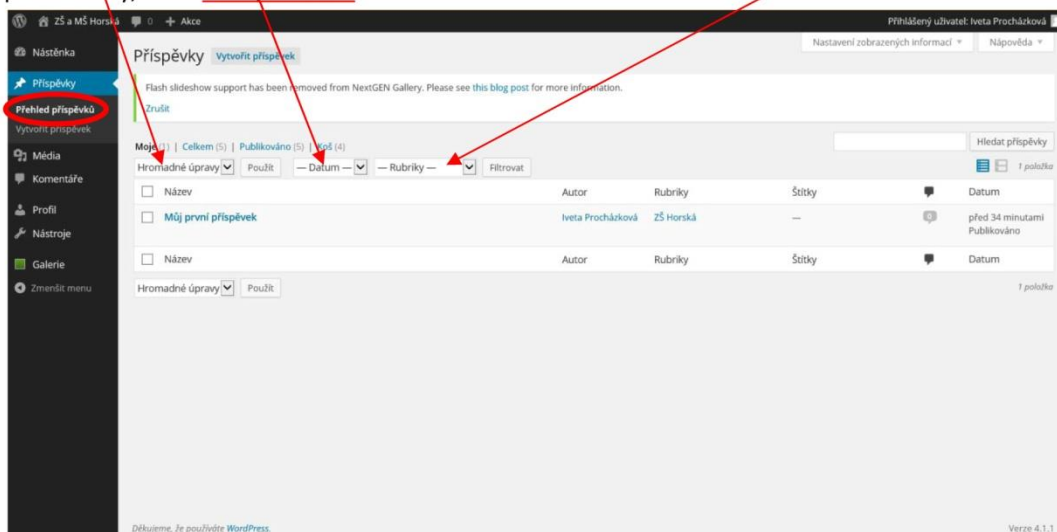
- jak je vidět na obrázku, nahoře zůstal černý proužek, což indikuje to, že jsme přihlášení

- skrze tento proužek lze nejnadhěji příspěvek dále upravit (tlačítko "Upravit příspěvek"), případně vytvořit nový příspěvek, nebo nahrát soubor (tlačítko "Akce") a nebo se dostat zpět do uživatelského prostředí administrace (tlačítko "ZŠ a MŠ Horská")



4d. V případě úpravy příspěvku je vše prakticky stejné, jako při jeho tvorbě; pouze se modré publikační tlačítko změní z "Publikovat" na "Aktualizovat". Chceme-li příspěvek odstranit, poslouží nám tlačítko "Smazat" nalevo od modrého tlačítka pro publikaci.

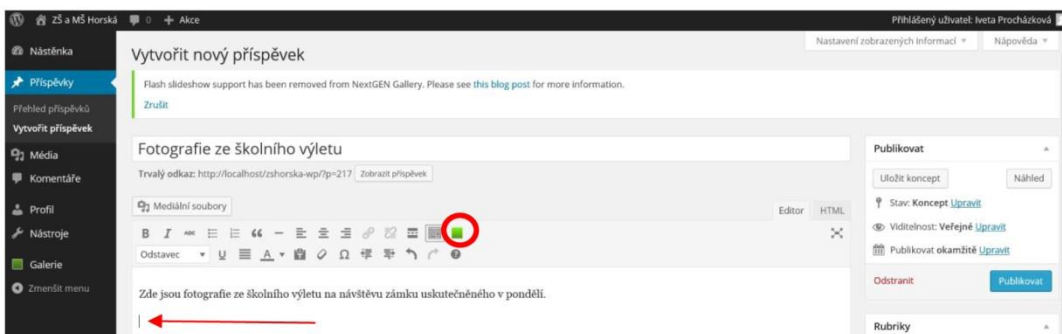
4e. Poslední možností práce s příspěvků je položka menu administrace "Přehled příspěvků". Zde jsou k vidění všechny námi publikované příspěvky, které zde mohou být hromadně odstraněny, nebo jim lze hromadně změnit rubriku. Zobrazení příspěvků lze filtrovat podle rubriky, pod kterou jsou publikovány, nebo data publikace.



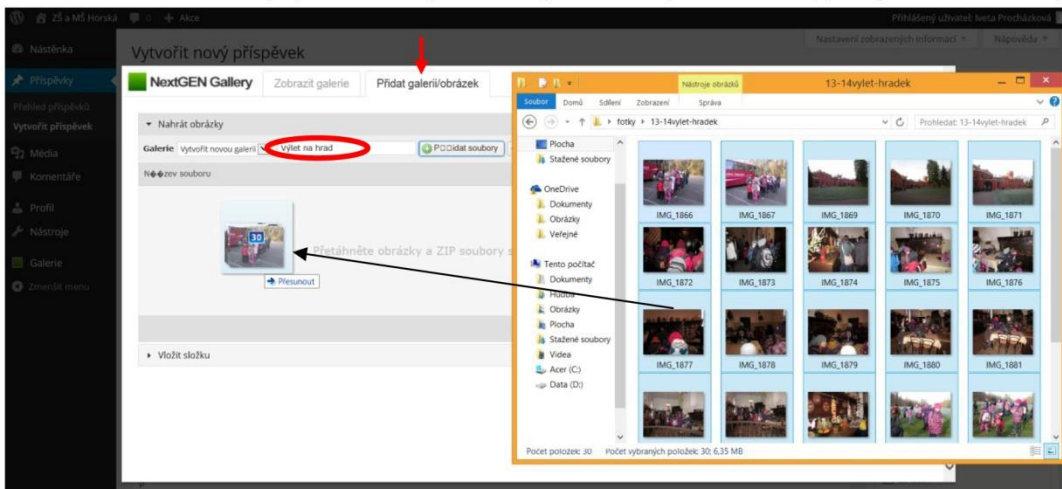
Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

5a. **Fotografie:** Chcete-li vložit na web fotografie, máte dvě možnosti. Buď vložení fotografií v rámci svého příspěvku, nebo vložení fotografií do fotoalba školy (kde je však nutnost schválení šéfredaktorem). Postup je však velmi podobný: vždy je potřeba vytvořit galerii nahráním sady fotek.

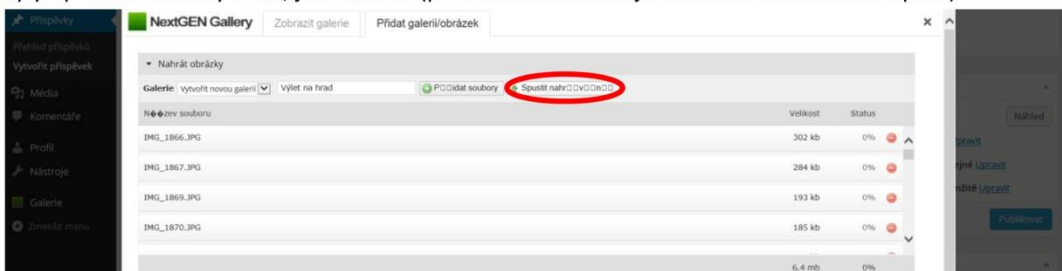
5b. V případě vložení fotografií přímo do příspěvku si otevřeme známou záložku "Vytvořit příspěvek". Napíšeme příspěvek, který potřebujeme a v místě, kde chceme mít fotografie, klikneme myší, aby se nám tam objevil kurzor. Poté klikneme na zelený čtvereček v panelu úprav textu.



5c. V otevřeném okně klikneme na záložku "Přidat galerii/obrázek". Vedle pole "Vytvořit novou galerii" napíšeme výstižný název naší galerie. Poté otevřeme umístění daných fotografií, všechny fotografie označíme a myší přesuneme do prostoru označeného "Přetáhněte obrázky a ZIP sem, nebo klikněte na Přidat soubory" (alternativně je samozřejmě možné přidat soubory přes příslušné tlačítko).



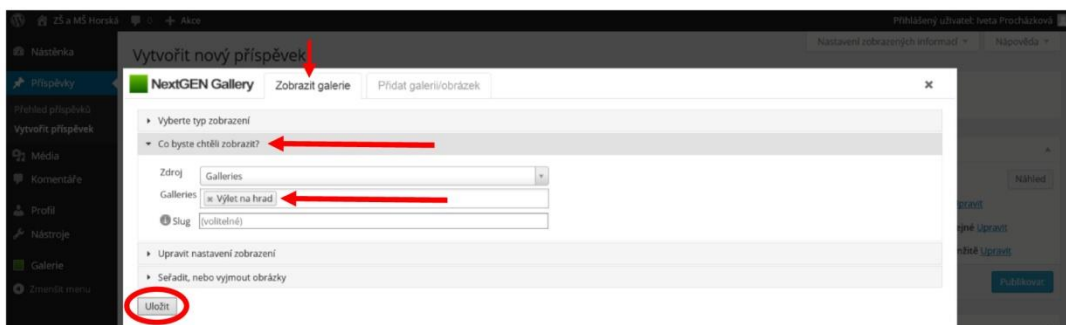
- před stisknutím tlačítka "Spustit nahrávání" soubory s fotkami ještě pečlivě zkontrolujeme, aby tam byly opravdu všechny a tak, jak chceme (po stisknutí tlačítka již není možnost dalších úprav)



Návod k obsluze nového administračního systému na webu www.zshorskavrchlabi.cz

5d. Po úspěšném nahrání fotografií překlikneme zpět na záložku "Zobrazit galerie" a po rozkliknutí odrážky "Co byste chtěli zobrazit" v položce "Galleries" vybereme název naší vytvořené galerie a klikneme na tlačítko "Uložit".

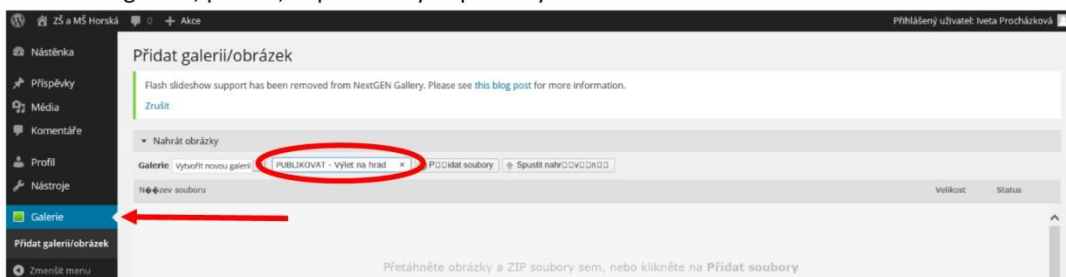
- v případě, že bychom ještě chtěli některé fotky z konečného zobrazení dodatečně vyřadit, je možné tak učinit v odrážce "Seřadit, nebo vyjmout obrázky"



5e. V příspěvku se nám v místě, kde jsme měli kurzor, objeví jedna z fotografií, jako zástupce celé galerie (všech fotek). Poté nezapomeneme kliknout na tlačítko "Náhled" a přesvědčit se, že je vše v pořádku. Článek můžeme publikovat a podívat se, jak vypadá výše popsaným způsobem.



5f. Chcete-li publikovat svou galerii ve Fotogalerii webu, je třeba galerii vytvořit podobným způsobem, tentokrát však přes záložku "Galerie" v levém černém menu v uživatelském prostředí administrace. Před název galerie, prosím, napište velkými písmeny slovo "PUBLIKOVAT".



- po nahrání fotografií je poté potřeba čekat na schválení Šéfredaktorem, který galerii také vhodně umístí

Appendix 2 - CD-ROM

There follow the names of files stored on attached CD-ROM on the last page of this thesis. These are the ones created for the particular ZŠ Horská template and some that have been only adjusted. All of them are currently on the webhosting.

Template files

Images

bck_class.png

body.png

header.png

menu.png

menu2.png

menu3.png

nggallery

album-compact-zshorska.php

404.php

category.php

comments.php

favicon.ico

footer.php

functions.php

header.php

index.php

page.php

reset.css

sidebar.php

single.php

style.css

Core (adjusted) files

comment.php

favicon.ico

nggallery.css

wp-comments-post.php