USING THE DATABASE MANAGEMENT SYSTEM OF THE FINANCIAL STATEMENTS SUBMISSION

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ABSTRACT: *In administration, information technology represents a field with major implications in its functioning and the re-configuration of the computer infrastructure is responsible for a series of efficient changes concerning the development of the administrative process. Thus, our paper tries to determine the importance of Business to Government relation in increasing the flexibility of IT solutions used at the level of companies and especially in the financial accounting activity, starting from the necessity to implement the e-Government system in Romania. While revealing the company's IT system and the financial accounting subsystem we also pointed out the stages of the accounting activities regarding the filling out of statistical reports such as fiscal declarations and annual financial statements.*

KEY WORDS: *e-Finance; secure transactions; financial statements; PHP; MySQL.*

JEL CLASSIFICATION: *M 48; C81.*

1. INTRODUCTION

Electronic communication services go beyond the personal and the business side of communication and they represent an important tool for supplying all types of information, goods and services to the public both by the government (social services, education or health) and by the private sector. Those without access to electronic communication services are likely to be outcast from the 21st century society. All over the world there is an increasing interest in new information technologies and particularly in electronic applications over the Internet. These instruments have gradually become effective tools to improve services for individuals and businesses, so that Romania currently benefits by various electronic services used in administration

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such as: sites for the presidency, senate, parliament, ministries, prefectures, municipalities, public institutions and portals: e-government, e-democracy, pay points, e-auction etc.

Thus, portals have replaced and completed the sites due to the increased volume of information required to be published, to its dynamics and to the ease with which it can be processed automatically by internal applications. Governmental or administrative portals are the most visited of many portals and they provide "the ease of communication among different departments and citizens".

2. METHODOLOGY. CHOOSING THE DATABASE MANAGEMENT SYSTEM

The process of choosing a database management system (DBMS) includes the following phases:
o determining the criteria required by the user of the system and their analysis in terms of: types of data structures, response time; methods of access, privacy issues, application type, etc..
o existing DBMS inventory and establishing the correspondence between the user's demands and the characteristics of systems in order to be able to meet the defined requirements;
o choosing a DBMS based on predetermined criteria.

Given these steps, the criteria taken into consideration when choosing a type of DBMS are:
o portability of DBMS's, namely the possibility of using a DBMS from a computer to another allowing for the actual software portability and data portability.
o the cost of the system that takes into account elements regarding the employment time of CPU; system maintenance and development costs; necessary hardware resources; documentation costs; adaptation costs and costs with the transition to a new computer system;
o the implementation facilities, the maintenance and operation of database are reflected by: how data is described, data organization techniques, techniques for easy access to any information, reduced time for updating information and responding to information requests; the possibility to add applications, data validation programs, updating programs, etc.;
o management of complex data structures (eg. the tree or network type).
o choosing access methods based on application characteristics, queries or updates etc.;
o basic data protection and security;
o utility of the application according to the field of activity (eg production scheduling, purchasing, sales, etc.);
o training of DBMS operators;
o maintainability of the system and quality of documentation.

The possibility of free use as well as meeting the criteria set out above by made me choose MySQL as a database management system for the e-Finance

electronic application of on-line submission and tracking of semi-annual and annual financial statements and fiscal declarations.

MySQL is a relational database management system, developed by the Swedish company MySQL AB and distributed under GNU General Public License. MySQL is a free of charge relational database, available for both Windows and Linux and it is used in small and medium applications. Currently, it is the most popular open-source DBMS and it is a key component of the LAMP bundle (Linux, Apache, MySQL, PHP). PHP comes from "PHP Hypertext Preprocessor". PHP is a popular 'server side' language used by half of the existing Apache servers. PHP was developed by Rasmus Lerdorf in 1994 in order to monitor his CV online. Rasmus has distributed his 'software tool', originally called Personal Home Page, free of charge. PHP has become a powerful server-side, open-source and multi-platform scripting language. MySQL is part of LAMP or WAMP integrated platforms (Linux / Windows-Apache-MySQL-PHP / Perl / Python). Its popularity as a web application is closely related to that of PHP which is often combined with MySQL and called the Dynamic Duo. MySQL can be run on many existing software platforms: AIX, FreeBSD, GNU / Linux, Mac OS X, NetBSD, Solaris, SunOS, Windows 9x/NT/2000/XP/Vista

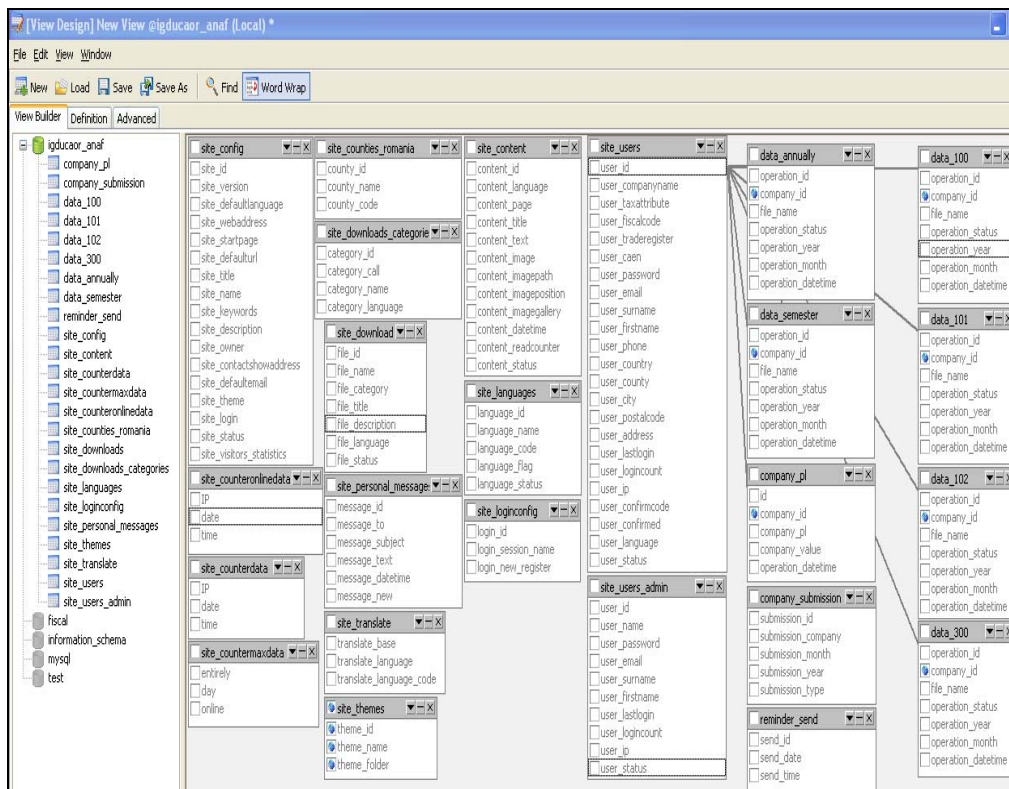Using MySQL and its elements I designed the igducaor_anaf database, shown in Figure 1.

Figure 1. e-Finance tables

This data base consists of 24 tables:
- ➢ Company_pl;
- ➢ Company_submission;
- ➢ data_100;
- ➢ data_101;
- ➢ data_102;
- ➢ data_300;
- ➢ data_annually;
- ➢ data_semester;
- ➢ reminder_send;
- ➢ site_config;
- ➢ site_content;
- ➢ site_counterdata;
- ➢ site_countermaxdata;
- ➢ site_counteronlinedata;
- ➢ site_countries_romania;
- ➢ site_downloads;
- ➢ site_downloads_categories;
- ➢ site_languages;
- ➢ site_loginconfig;
- ➢ site_personal_messages;
- ➢ site_themes;
- ➢ site_translate;
- ➢ site_users;
- ➢ site_users_admin;

3. ACCESS TO MYSQL DATABASE ON THE WEB THROUGH PHP

Starting from the general criteria for choosing a database management system, the benefits of using PHP scripting language instead of ASP technology in order to implement a virtual business, a virtual shop respectively, one can identify:
- *The price* as PHP is cheaper to implement than ASP;
- *Additional advantages* offered by PHP as compared to ASP;
- PHP is an *open source* programming system. The software in this category are the result of a collective effort made by a community of volunteer programmers worldwide who are passionate about science. These communities include people of different specialties and experience in different sectors working together to solve problems in new ways, thus resulting better software. Open-source software is free of charge, free to copy and modify, which means an advantageous choice for customers.
- PHP is a *highly flexible language,* it can be extended and customized according to customers' requirements. Programmers who are beginning to develop a project, are offered great support since there is a huge amount of software written in PHP and its source code is available free of charge. Whenever possible, programmers can reuse the code written by them, and when facing a new type of application they can

browse what they have already developed, they may add new functions to it and customize it. This would not be possible if the software would be the property of a person, company, etc.

PHP is the most popular web programming language in the world today. This language is more popular than ASP, Cold Fusion, Perl or any other web programming language. Using PHP does not involve commercial license or payments for repeated upgrades. For example, uploading and downloading files via HTTP or FTP, encryption, sending emails from a web page, require the purchase of auxiliary software in the case of ASP. With PHP, all these are free.

PHP is independent from the bundle: it can run equally well on operating systems such as: Linux, Solaris, Windows and others. ASP runs only on Web servers with Microsoft Windows systems. In this case it will be difficult to the web hosting provider with a better one, in case the latter uses Linux. PHP is much faster than ASP. ASP supports multiple programming languages and this architecture is inherently slower and more memory intensive than the PHP model because each ASP compiler runs in its own process. Thus, when ASP detects an ASP tag will produce a change in the context of an HTML parser. PHP is secure. IIS Server is well known for its security holes. From our point of view programming in PHP is better than ASP because the same functionality can be written with fewer codes than ASP. This is possible because HTTP GET and POST variables are created automatically by PHP as global variables, so it eliminates the stage of extracting them by using the ASP Request object. HTTP header manipulation is made easier with PHP than ASP. It is considered that the ASP is a good and useful technology but in the long run, PHP will prove superior both in terms of technology and its popularity. This statement is based on a number of reasons drawn from specialized literature.

In PHP there are functions for all operations performed on MySQL database. The idea underlying the interaction PHP - MySQL and generally, the interaction between PHP and a database is that it allows all the data that the programmer wishes to post on the site to be present in the database. Thus, information can easily be updated and presented in a 'dynamic' form on the site. MySQL management can be done using the command line or the browser and accessing an application called PHPMyAdmin written in PHP.

In order to manage MySQL databases one can use the command line mode or by downloading a graphical interface from the Internet: MySQL Administrator and MySQL Query Browser.

The operation of the Web database architecture involves the following steps:
➢ the Web browser sends a HTTP request to a specific web page. The page with the results of the search is called results.php;
➢ the Web server receives the request for results.php, retrieves the file and transfers it to the PHP engine for processing;
➢ PHP engine starts exploring the script. Within the script there is a command in order to connect to the database and perform an inquiry. PHP opens a connection to MySQL server and sends the query in question;
➢ MySQL server receives a database query which needs to be processed and then it sends the results back to the PHP engine;

➢ PHP engine ends the script, which usually involves formatting the results of the inquiry in HTML code. Then, the resulting HTML code is returned to the Web server;

➢ The Web Server transfers the HTML code back to the browser, where users can view the results of the search.

PHP supports libraries for connecting to a large number of databases including Oracle, Microsoft SQL Server and PostgreSQL. The principles of connecting to and searching these databases are generally the same. Function names may vary, and some databases have slightly different features, but if you can connect to MySQL it should be able to easily adapt the information to any of the other databases.

The main areas where PHP scripts can be used are:

➢ *server-side scripting language*, which is the core of PHP and requires the existence of three elements, such as PHP parser (CGI or server module), a web server and a web browser;

➢ *command line scripting* which allows a PHP script to run without a server and a web browser and it is ideal for scripts regularly executed using cron (on * nix or Linux) or Task Scheduler (on Windows);

➢ *writing desktop applications* allows you to write applications that will run on multiple platforms. PHP-GTK is an extension of PHP, which is not available in the main distribution.

4. IMPLEMENTATION OF SECURE TRANSACTIONS WITH PHP AND MYSQL

Providing secure transactions using the Internet is a matter of examining the information flow and the certainty that user's information is secure in all locations.

Based on network security, I consider that no system is impenetrable because of information flows. The user's information flow in a typical application, written using PHP and MySQL, is shown in Figure 2.
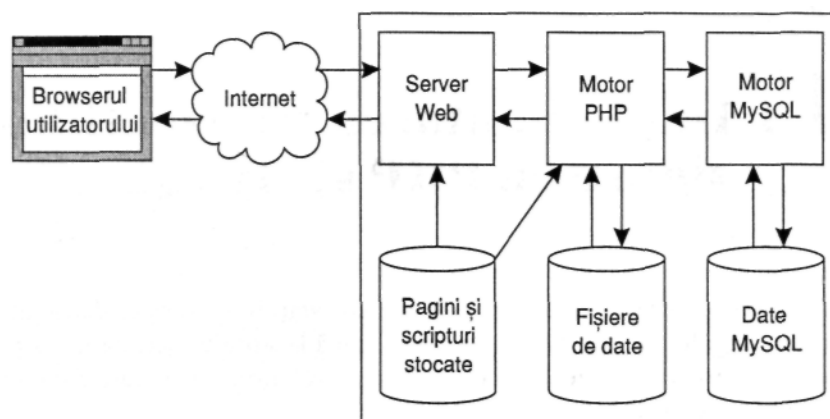

Figure 2. The user's information flow

The details of each transaction that appears in the user's system will differ, depending on the design of the system, on the information and the actions that triggered the transaction.

All these can be analyzed almost the same way. Each transaction between a user and a Web application begins by sending a request by the user's browser through the Internet, to the Web server.

If the page is a PHP script, the web server will delegate the processing of the page to the PHP engine. This script can read or write data to disk, it can use other PHP or HTML files, it can send SQL queries to MySQL daemon and it can receive answers.

MySQL engine is responsible for reading and writing data to disk and it includes some main parts: the user's system; the Internet network; the beneficiary.

The user's system runs a Web browser and the information is stored or processed according to the elements of a Web application. Due to the fact that different browsers are available, one may take into account only the most recent versions of the two most popular browsers.

Even if most of the differences between versions will affect only the processing method and the display of HTML code, there are security features or functionality elements that need to be taken into consideration when designing complex applications.

The functionality of the application offered by PHP can be compatible with the user's browser since the final result is an HTML page.

However, in terms of safety, there are reasons to keep as little information as possible on the user's system, even if most information that is stored should be on the Web server. There is the possibility to not have control over data stored outside the web server, over their safety and the user cannot be stopped from modifying this information.

The Internet, in addition to the many useful features, is an insecure network because when transmitting new information each user can see or modify the data transmitted. In order to eliminate these disadvantages, the following stages should be completed:

- Transparent transfer of information, knowing that it is possible to modify it during transmission, thus it is not confidential;
- Digital signature or encrypting the information before sending it in order to prevent forgery;
- Selecting the information that is too important to risk interception and finding another means of sending it.

Actually, in order to secure information entering and leaving the Web server through the Internet one can use the following technologies: SSL (Secure Sockets Layer); S-HTTP (Secure Hypertext Transfer Protocol).

5. CONCLUSIONS

Both of the technologies offer confidential messages and authentication and they are resistant to corruption, however SSL is already available and widely used, while S-HTTP is attempting to recover lost ground. When implementing the e-Finance

application we used the SSL technology. The user's access is based on the tax identification code and the password chosen at the registration of the company in the database. It also uses protection against the introduction of source codes in the login fields.

As far as the storing of passwords is concerned, we used MD5 encryption algorithm (Message Digest Algorithm 5) which is a one-way hash cryptographic function that yields a fixed value result of 128 bytes in length. The MD5 function was developed by Ronald L. Rivest in 1991, published in 1992 by RFC 1321 and it is used as a component of some electronic signature schemes.

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