Creación de un odontograma con aplicaciones Web

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Criando um odontograma aplicação Web

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Resumen

La administración de las citas de los pacientes en los consultorios dentales suele generar problemas cuando se hace de manera manual. Algo similar sucede con el registro de las visitas, que se almacena en una hoja de cálculo e incluso en hojas de papel, ocasionando demoras al momento de buscar el historial de algún paciente.

La creación de una interfaz con ayuda de programación JavaScript, AJAX, y PHP, permite una administración más integral y, por lo tanto, el beneficio de brindar una atención más rápida, eficaz y competitiva.

Palabras clave: administración, Java, PHP, odontograma.

Abstract

The administration of appointments for patients in dental clinics often create problems when done manually. Something similar happens with the registration of visits, which is stored in a worksheet and even sheets of paper, causing delays at the time of search a patient's history.

The creation of an interface with the help of JavaScript, AJAX, and PHP programming, allows a more comprehensive management and, therefore, the benefit of providing a faster, more efficient and more competitive care.

Key Words: administration, Java, PHP, odontogram..

Resumo

A gestão das consultas dos pacientes em consultórios odontológicos muitas vezes leva a problemas quando feito manualmente. Algo semelhante acontece com o registro de visitas, que é armazenado em uma planilha e até mesmo folhas de papel, causando atrasos quando procuram a história de um paciente.

Criando uma interface usando JavaScript, AJAX e programação PHP, permite uma gestão mais abrangente e, portanto, o benefício de fornecer um atendimento mais rápido, eficiente e competitivo.

Palavras-chave: administração, Java, PHP, odontograma.

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Introduction

The doctor's office, object of this research study, does not have any system of information allowing the doctor to administer the medical consultations quickly. It should be noted that in the market there are several computer systems that can help in this activity, however, doctors just starting their professional work are difficult to acquire this software because of the high cost of their office equipment.

The objective of this analysis is to assess the scheme of work on web for the manipulation of dental records. Generally, dentists not to produce complete records of their patients, which sometimes prevents having a reliable and understandable document when the situation warrants to identify each patient's history.

Web applications

Today it is important to recognize the importance and the boom that have web sites to promote all types of companies in and out of the city where it resides, in order to attract more customers and compete within the labour market.

As medium of communication, them web sites are similar to the movies, the television or them magazines, that also create and manipulate images digital and text. The main difference between a web site and traditional media is that the first is inside a computer network (Internet) and has been coded in such a way that users can interact with it.

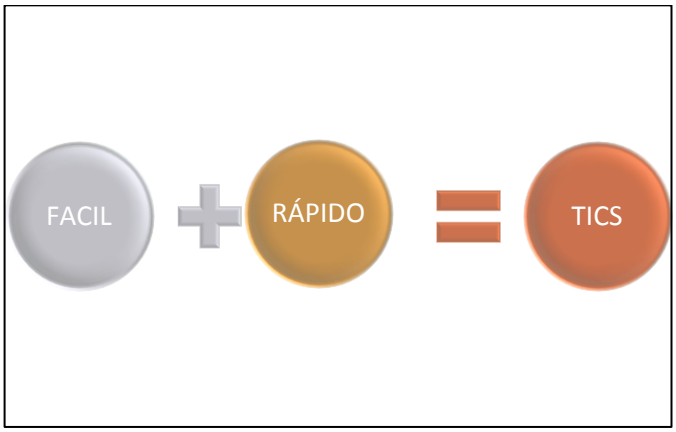
Society changes constantly and quickly. Such changes are not only supported by the quantitative increase of the available information due to the advance of "new" technologies and the immediacy with which such information can reach the recipients, but they are also directly related to cultural modifications, in other words, changes that are reflected in the way they are as we communicate, we work, we have fun, learn, etc.

The numerous social changes that are taking place are largely due to the advance of new technologies. At this point we must avoid falling into the error of thinking that the information and communication technologies will create a model society; on the contrary, both aspects, society and technology, is will affect each other (Cabero, 1999).

Today, ICTs are a determining factor of the companies productivity, no matter their size. Small and medium-sized enterprises (SMEs) can improve the efficiency of the different business processes —production, sales and administration—, reduce costs and increase their competitiveness through the use of Information and Communication Technologies (ICT).

In addition to improving efficiency and productivity, the use of ICT has special importance for marketing and sales, search and communication with suppliers and customers, and to the continuous learning of the entrepreneur and of the staff. When we speak of ICT almost always we associate the term with computers.

Figure 1. Features of ICT



AJAX

AJAX stands for Asynchronous JavaScript and XML is not a new technology but a combination of several technologies: Javascript programming language, XML for data exchange, DOM for handling objects on the page and an asynchronous model communication for data exchange.

The main idea of AJAX is to load and render a page, which achieved based on scripts that communicate asynchronously with the server to bring data and then change parts of this without having to reload the page. (Oxlaj, 2008).

Among the largest companies using AJAX are Google, Yahoo, Amazon and Microsoft. Applications range from complete some fields automatically to an office suite with word

processing and spreadsheets. Among the benefits of AJAX we are: rapid response, user interfaces graphically rich, lower consumption of bandwidth and interactivity. But all is not perfect with AJAX because it presents major problems if not used properly.

Ajax is a web development technique that allows to implement an asynchronous communication between the client and the server. With Ajax, many of the tasks normally done from the server side (eg database queries) can partially be made from the client side, avoiding reload the page and providing a smoother navigation experience.

Figure 2. Benefits of using AJAX

JAVASCRIPT

Javascript is a script programming language developed by Netscape, whose main purpose was to modify HTML tags and make validation tasks. The code you write this language is interpreted by the browser. In addition, Javascript can not create standalone programs, it needs to be included in an HTML page so it can be used. One advantage of this language is that it is easy to learn and use because it is not as complex as a general purpose language like Java and C #.

PHP

In recent years many new programmers say that PHP is bad, even if they claim that they never had any direct experience with PHP. And this is repeated again and again because they heard that a friend of a friend said the same.

PHP is the language most widely used web programming, and has no rival. For every 10 Java Web applications is a C # and Ruby or NodeJ, say. Java has the same problem, Java is undoubtedly the language most widely used PC, phones, televisions and even toasters. Java is an institution, and perhaps that is why some programmers who have never used give bad references about it. Although there have been failures, these are not of importance.

PHP (acronym originally meant Personal Home Page) was written by Rasmus Lerdorf initially as a simple set of Perl scripts to guide users on their pages. Then, to satisfy similar concerns of other people, he rewrote but this time as a scripting language and added, among other features, support for forms. Seeing that language's popularity increased, a group of developers created an API for it, becoming PHP3. It was at that moment when the parser was completely rewritten scripts PHP (Zend Engine), giving rise to PHP4, much faster, as it is known today.

Additional advantages of PHP

PHP runs on (almost) any platform using the same source code can be compiled and run in something like 25 platforms, including different versions of Unix, Windows (95,98, NT, ME, 2000, XP, blah, bla) and Macs. As in all the same code base is used, scripts can be executed independently of the OS way.

PHP syntax is similar to C, so anyone with experience in C style languages can quickly understand PHP. Among the languages of type C we include the Java and Javascript, in fact much of the functionality of PHP due to the C functions such as fread () or srtlen (), so many programmers will feel at home.

PHP is completely expandable. It consists of a main system (written by Zend), a set of modules and a variety of code extensions.

There are many different interfaces for each type of server. PHP currently run under Apache, IIS, AOLServer, Roxen and THTTPD, although other alternative is to set it as CGI module.

You can also interact with many database engines such as MySQL, MS SQL, Oracle, Informix, PostgreSQL, among many others. You can always have ODBC when situations warrant.

There are a variety of modules available. When a PHP programmer need an interface for a particular library, you can easily create an API for this. Some of which are already implemented enable management of graphics, PDF, Flash, Cybercash, calendars, XML, IMAP, POP, etc. files.

Speed

PHP is generally used as an Apache module, making it extremely fast. It is completely written in C and running quickly using little memory.

PHP is Open Source, which means the user does not depend on a specific company to fix things that do not work well is not forced to pay annual updates to have a working version. Many of us who have waited for Allaire fix this, we appreciate it.

JavaScript and Java

JavaScript is a programming language that arose due to the need to expand the capabilities of HTML. Indeed, soon it became after the Web appeared, clear that it was necessary more than the limited benefits of basic language, as HTML only provides elements that act exclusively on the text and style, but does not allow for example, even opening a new window or issue a warning message. The early appearance of this language, is possibly the cause that has become a supported by all current browsers, unlike others who only work in browsers of their creative signature standard.

DEVELOPMENT

Do you know why it is important odontogram?

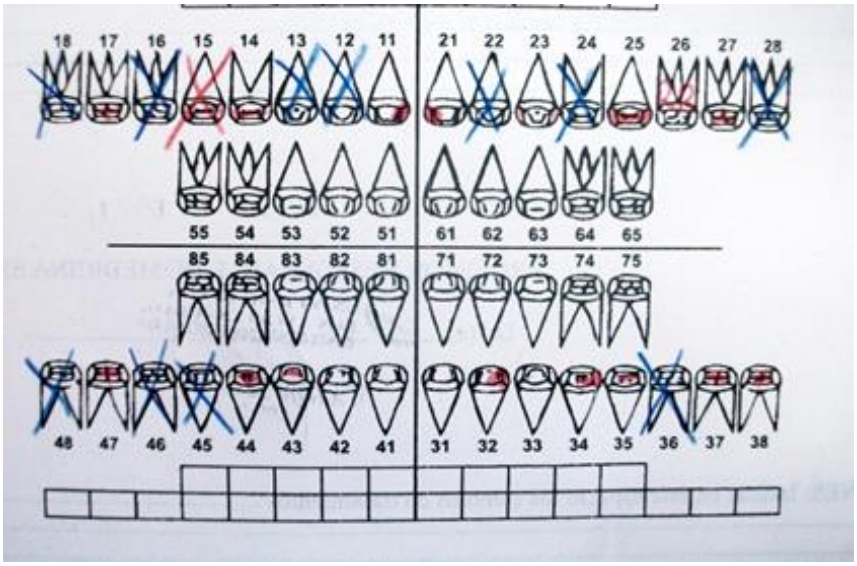
A odontogram is a scheme used by dentists to record information about a person's mouth. In this graph, the professional detailing how much permanent teeth have patient, which have been restored, among other important data. Thus, the odontogram is a record of the medical history of the individual. Therefore, it is a tool identification. The dentist, in analyzing a patient's dental chart, can know what jobs were performed in the mouth of the person concerned and comparisons between the current oral condition and registered in the previous visit.

Moreover, odontographs can be used for identification of unacknowledged bodies. When the police found a corpse in poor condition and can not determine its identity, you can investigate various odontographs to try to recognize the deceased through his teeth, which are pieces of great resistance and do not decompose, which does not happen with organs.

The scheme odontogram can have different formats. There are versions that identify teeth with numbers, others with capital letters and even some pairs of numbers. It all depends on the preference of the dentist to choose one or the other format.

Whether it is used for the dentist bear in mind the work done in the mouth of his patient, to identify a person or to facilitate the exchange of medical information between professionals, odontogram is a history of great importance that should be updated frequently.

Figure 3. Example of a filled manually odontogram



Let's look at some general provisions of odontogram:

- It is considered part of the medical history and odontostomatological Sheet
- Capturing data to fill the odontogram must be performed by a dentist
- Your registration must be made beyond all doubt, clear and precise, to avoid any confusion when reading.
- Its development is individual for each patient and should take place in the first appointment with the dentist, without any possibility to modify, amend it or cross it off.
- The location, shape and size of the phenomena and pieces that are during the dental examination should be reflected in the odontogram as accurately as possible.

There are many other issues that include health standards, such as the color of the ink to be used for recording each data type and in each section of odontogram, or what steps to take when a tooth has more than one finding. On the other hand, it is important to note that after making any changes must produce a second odontogram without the first affected since it

must be part of patient history. The average time for development provided a odontogram is 10 minutes.

In a odontogram you must specify the fixed teeth, indicating their health and integrity, and removable with an enclosed straight line between square with a plus sign inside and a zigzag line, respectively. Other data to be recorded are the presence of caries, definitive crowns (which may be complete, metal or ceramic part, among other types), temporary crowns, diastema, missing teeth, teeth erupt, extruded teeth or instruction, fractures, implants, prostheses and bolts (which can be fixed, removable or full rate).

the decision to use PHP, AJAX JAVASCRITP and development of the interface, which has the function to minimize and streamline administrative processes within the office was taken.

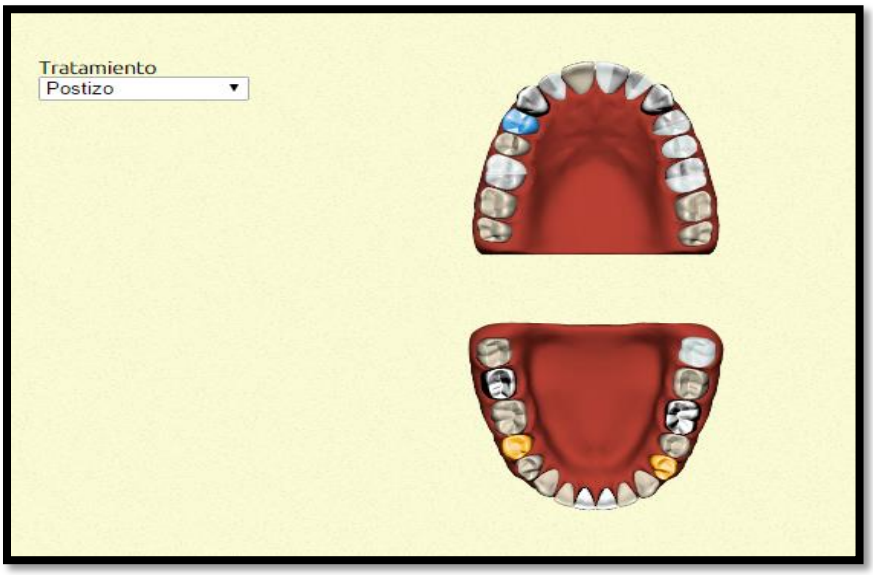
To encode this application began to create the database that will contain the information needed to manage data.

The most important module of this development is included in the dental form, which are shown graphically all the teeth of an adult. Simply select the treatment contained in the combo box and click on the tooth with which we worked, which may be false, have amalgam, resin, bridge, and so on. In addition, every move that is made in the odontogram is stored in a database, updating the history of each patient to be useful for future reference.

As already mentioned, the odontogram is important because it is a tool that identifies each patient. Each time you go to see and you make the dental treatment, which can be consulted at any time updated.

The creation of this screen was a challenge due to the complexity representing handle multiple languages, however, after considering the needs of the user in this case the odontólogo-, it reached the target.

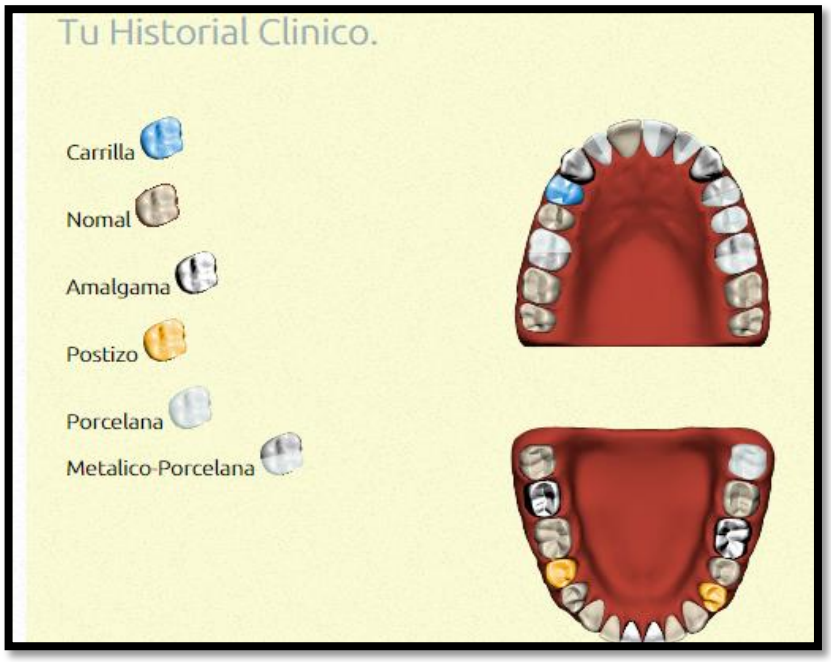
Figure 4. Graphical interface that allows recording dental treatments at each appointment



AJAX programming was used because of its ease of handling objects found within the form and easy shipping-receiving information in the database contained and created in MYSQL.

The following image shows the history or treatments that the dentist has practiced also offers a section for the user to schedule your appointment.

Figure 5. Screen with the clinical history of each patient



Conclusion

Finally the application that stores all patient information in a database according to the needs of the dentist for future visits was obtained. That way you can see clearly in the form created with PHP each of the teeth of their patients and the different works he has done.

The use of this application reduces the use of paper in control of treatments performed and improved management. Its low cost compared to other applications, benefits doctors dentists who are just starting their professional work.

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