System for the administrative control of an EJIDAL commissioner

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Abstract

This article presents the system that is developed for the administrative needs of an ejidal commissary, in the specific case of the San Lucas Atoyatenco, municipality of San Martín Texmelucan, Puebla. Because all the information in relation to ejidatarios, ejidos, works done by the representative of the comissary, among others, had them in a physical way, without having registered in some physical or digital format. So the system was developed with the objective of having an efficient control of the information that is administered in the ejidal commissary, and the problem is not present in every change of representatives of the commissioner begins with an almost total ignorance of what was done in the previous management of the commissioner. The system allows access to information automatically and generates reports. The security that is implemented is for the care to the personal data, therefore the access to the same is validated as well as contemplating other security mechanisms for the database. The tools that were used for the development are of free license so no payment will be realized in terms of licenses.

Ejidal Commissary, XP Methodology, Security, Computer System

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Introduction

In Mexico there are ejidal commissariats, which represent agrarian nuclei, they carry out different activities, with the objective of benefiting their members and obtaining a better use in production, no matter the turn to which each ejido is dedicated. The municipality of San Martín Texmelucan, Puebla, has 12 police stations and one of these is that of San Lucas Atoyatenco. In this commissary the information is currently in a physical manner and is not organized, therefore, it is only known to the current representatives and those who are benefited by a support program, or those who are affected by any of the activities that the commissioner proposes to carry out.

Due to the above, a system was made to control the information of the ejidal commissioner, which allows access to updated and relevant information. It offers easy-to-use graphical user interfaces, friendly to users, as well as record data using a database manager that is efficient and quick to generate queries of information. The access to the system and the information is done in a secure way, by the protection of personal data of the ejidatarios and ejidos, also generates reports according to the needs of each module of the same.

Literature review

Commissioner Ejidal

FIFONAFE (2010), defines that an ejidal commissioner is the body in charge of executing and enforcing the agreements taken by the Assembly, as well as the representation and administration of the ejido, has the legal representation of the agrarian nucleus before third parties based on the agreements taken by the Assembly legally constituted.

The Ejidal Commissariat or Communal Property is composed of: President, Secretary and Treasurer, owners and their respective substitutes

The Supervisory Board is the body in charge of overseeing that the acts of the ejidal commission conform to the agrarian legislation, to the agreements of the Assembly and to what the Internal Regulations of the ejido establish. The Vigilance Council is a collegiate body, the ejidatarios in Assembly have the right to elect the Supervisory Board.

Methodology XP

The methodology of software development used was Extreme Programming XP (Extreme Programming), which includes the phases: Exploration, Planning, iterations, production and maintenance.

The roles that are played in the methodology are: programmer, client, test manager (tester), tracking manager (tracker), coach (coach), consultant and manager (big boss)

Development tools

The software tools for the development of the system are free license with the objective of not generating license fees to the commissioner. To manage the database, XAMPP was used, which is a completely free and easy to install Apache distribution that contains MariaDB, PHP and Perl. The XAMPP installation package has been designed to be incredibly easy to install and use.

The basic packages included, are:

− Apache, the most famous Web server.

− MySQL, an excellent free code database.

− PHP and Perl: programming languages.

– ProFTPD: an FTP server.

The Sublime Text editor is one of the most popular tools today for both web developers and layout designers.

Material Design is a design language that combines the classic principles of successful design along with innovation and technology. The goal of Google is to develop a design system that allows a unified user experience across all its products on any platform.

Development of the system

To carry out the system, we worked in collaboration with the President of the commission to identify the actual functional requirements for the system. The project was carried out according to the needs of the presindent who performs his functions as established by the Agrarian Procurator, these were handled during the development as functionalities. Therefore, the five phases considered in the XP methodology mentioned above are briefly described.

Phase 1. Exploration

In this phase, work meetings with the client were planned to define the functionalities of the system and identify user needs, as well as the physical characteristics of the equipment in which the system was implemented, which allowed to define the technologies for the project development. In figure 1, an image of an interview that was made is shown.

Figure 1 Meeting with the President of the Commissioner. Source: self made.

The exploration of the tools was done. The software used was: For the database XAMPP was used and for the development of the application we used MUI, php, Material Design.
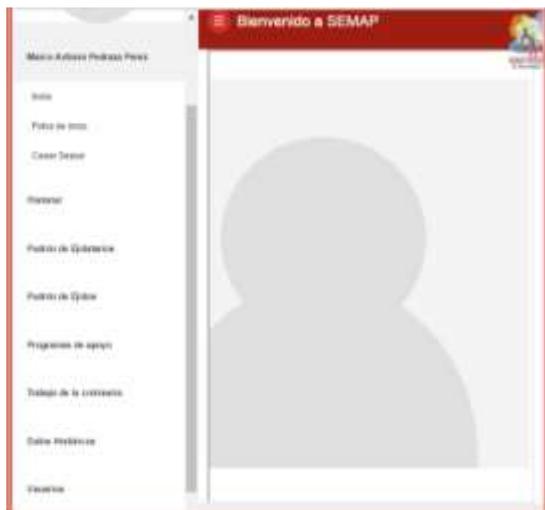
Phase 2. Planning

The priorities of the user's functionalities were configured. The effort that was required for the programming of each functionality was estimated and a schedule was made according to the time estimate. The modules that developed were felt and are:

– Users

– Ejidatario Register

– Census of ejidos

– Historical facts

– Support Programs

– Commission work

– Record

For each module user logs and low fidelity screens were created, within each one of these the basic operations are considered (High, low, queries, modifications and generation of reports). Which were presented to the client for their authorization.

Figure 2 presents the interface where you can see the modules to which the user with administrator privileges has access, given that the system presents different options depending on the privileges that each of the users who access this account have.

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Figure 2 System modules

Source: self made.

Figure 3 illustrates the system login and can be identified as one of the security measures included in the system.

Figure 3 Login

Source: self made.

Phase 3. Iterations

During this phase, the necessary iterations were carried out before delivering the project to detect possible errors and define the reports that the system would generate.

Figure 4 presents a photograph of the revisions that were made in collaboration with the users of the system for the possible identification of errors in it. In figure 5, one of the reports that allows generating the system is presented.

Figure 4 Review of the system with the user

Source: self made.

Figure 5 Report

Source: self made.

Phase 4. Production

In this phase it is in which all the knowledge of users, analysts and developers is included to implement the computational technologies to solve a need that one has in the daily life of one of the most important sectors in the agricultural country. In addition to this phase requires extra testing, reviews and validation, before it is delivered to the client. Therefore, for the successful completion of the system was presented with the representatives of the ejidal commissioner, the vigilance committee and even with the general assembly of the ejido, so that they had the confidence that using this tool will allow them to streamline the processes that performs the commissary.

Phase 5. Maintenance

In this phase, in addition to conducting training courses for users, it allows for the delivery of the necessary manuals for the optimal functioning of the system, in addition to coupling with the different real scenarios that arise when implementing it.

Results

The Ejidal System allows the control of information automatically and easily for users, provides the benefit of generating reports of the information requested in each of the modules that comprise it. In addition, users have the security that not any user of the team can access this given that the database and the entry into the system were programmed to avoid unwanted access.

The results obtained from the system are relevant, given that users express that their work is performed optimally and efficiently at a time that they considered they could not do, given that most of the representatives of the commissary are people with levels of basic preparation and that with the use of the system they see results of their work instantly to continue their activities in less time than they previously occupied.

Conclusions

The elaboration of the Ejidal System will allow to have the control of the information and that is of fast access, also it impacts at the moment of generating reports, delivery in time of the requests for supports before the different secretariats. As well as having an updated ejidal census and with data that is relevant to the work carried out by the commissioner, in addition to having historical data that in many cases are unknown by the inhabitants, the region itself, the municipality, and therefore society in general.

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