Web business management system

Sistema de gestión empresarial por Internet

GONZÁLEZ-RAMÍREZ, Claudia Teresa†*, PATIÑO-BUCIO, Alfha Michel, RUIZ-GARDUÑO, Jhacer Kharen and DELGADO-PICHARDO, Mauricio

Tecnológico Nacional de México campus Zitácuaro

ID 1st Author: *Claudia Teresa, González-Ramírez* / **ORC ID:** 0000-0002-4106-4583, **Researcher ID Thomson:** G-6313-2019

ID 1st Co-author: *Alfha Michel, Patiño-Bucio* / **ORC ID:** 0000-0003-4735-8555

ID 2nd Co-author: *Jhacer Kharen, Ruiz-Garduño* / **ORC ID:** 0000-0003-3353-7966

ID 3rd Co-author: *Mauricio, Delgado-Pichardo /* **ORC ID:** 0000-0003-1129-2128

Abstract

The developed project addresses the existing functional impact of automation and streamlining organizational management systems, through the most ad hoc technological tools for the generation of web systems in an integral way. Organizational Management System on the Web, part of having control of the activities and documents, identified mainly from within the organization's problems, as is the case of Biocenosis A.C. Monarca region, with the purpose of keeping the proper record of the activities to be carried out within the company, in addition to being able to have a space in which they can store and download all the necessary documents to complete said activities, the web system is developed, strengthening with an activity manager application optimizing towards an organization and management of the registration of the different participation activities, calls, monitoring of plans according to the activities of the organization a priori. The web system and application are obtained with technological tools, such as SCRUM, Android

Web system, Comprehensive, Technological tools

Resumen

El proyecto desarrollado   aborda el impacto funcional existente de la automatización y agilizar los sistemas de gestión organizacional, a través de las herramientas tecnológicas más ad hoc para la generación de sistemas web de forma integral. Sistema de Gestión Organizacional en Web, parte de tener un control de las actividades y documentos, identificados principalmente de dentro de problemas de la organización, como es el caso de Biocenosis A.C., región Monarca, con el propósito de llevar el registro adecuado de las actividades a realizar dentro de la empresa, además de poder tener un espacio en el que podrán almacenar y descargar todos los documentos necesarios para completar dichas actividades, se desarrolla el sistema web fortaleciendo con una aplicación gestor de actividades optimizando hacia una organización y gestión del registro de las diferentes actividades de participación, convocatorias, seguimiento de planes de acuerdo a las actividades de la organización a priori. Se obtiene el sistema web y aplicación con herramientas tecnológicas, como SCRUM, Android

Sistema Web, Integral, Herramientas tecnológicas

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* Correspondence to Author (E-mail: claudia.lic@gmail.com)
† Researcher contributing first author.

Introduction

Web systems today are widely used, due to the practicality of the web browser as a client, and in the independence of the operating system, allowing optimization of time and not having to learn to use new programs, as well as their creation, administration, maintenance. and data backups, as well as the core point is being able to work from anywhere. We can say that web systems are easy to use, only with basic computer knowledge you can work with them and be used by several users at the same time.

Organizations have multiple activities to perform daily to achieve the success of objectives and goals set, so it is very difficult to keep track of them if you do not have a system that makes it easy to record and view these tasks to be performed, in time and form. In some companies, the control of appointments and tasks to be carried out is carried out in the traditional way, writing the activity data on a piece of paper or notebook, if there is no electronic system, so sometimes these annotations are lost and the company attends late or does not show up for these activities. Based on the importance and impact, the project was developed in BIOCENOSIS A.C. Monarch region in august 2020 - august 2022.

The advantages of this system are the following:

- Record future activities to be carried out.

- View the progress of activities.

- Be able to upload and download documents in the system.

- Register staff within the organization.

- Create a stable and flexible system to future changes.

- Possibility of incorporating new technologies.

Organizational Management System on the Web was strengthened with the development of an intelligent task manager app, which is based on the same importance of having control of activities and documents, identifying the main problems of the organization, in addition, the management system sends a reminder, which will be programmed with the date and time in which you want to receive the notification, obtaining optimal results for the organization Biocenosis A. C.

What is sought with the web and app system is to maintain:

Relevance: Manage call information

Integrity: Always ensure that you are notified of your activities

The two previous features allow the user notifications, warnings and reminders of activities to be carried out or pending, as well as saving documents in the cloud.

Justification

The BIOCENOSIS association located in the center of Zitácuaro, Michoacán, presents the need to have a better control of the processes that are carried out internally in the organization, one of its activities is to carry out activities in areas of origin communities , just like her presentation of projects in the improvement of various communities, presenting the problem of loss of project management and in USB memories with dates stipulated by federal and private organizations for the acquisition of resources.

Generating the option to improve the processes to be carried out inside and outside the organization from the mobile and on the web, the control of the processes supports the option of developing a WEB system. The A association with this technology can achieve reliability in monitoring the information on current calls or potential, due to the importance and relevance of operations and information management of great sensitivity for the same, and the communities of origin, reducing the percentage of incidents of loss of information. On the one hand, linking the Web system with a mobile application offers the user a friendly, light, brief, fast interface and work anywhere.

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Problem

The paper record of the tasks to be carried out, which sometimes caused the loss or forgetting of these annotations where said record was made, as well as the forgetting of the date and time of the activity. Sometimes scheduled appointments are delayed or there is a delay in the delivery of activities. with a document stored on the office computer from another location, be it from home, another location, or even across the country, and the only way to access these documents was at the office to get the file. Since there is no dedicated space to store your documents, they are often lost between office computers, as it is not known which computer the file is on.

Hypothesis

Implementing the use of a web system allows users to access information in a simpler way, updated from the comfort of a mobile device at the desired time and place, for any type of organization

Variables

Independent variable

Lack of time.

Lack of time.

Updating of information.

Easy to use.

Resource availability.

Dependent variable

Mobile application for consultation and access to documents to be generated.

Web system to store information on different projects in the cloud and collaborate in the development of documents.

Methodology

The project has the character of application, of mixed and transversal type; It is necessary to carry out a satisfaction survey of end users, as well as to obtain their appreciation of use in optimizing their processes and cross-sectionally, since data from the variables must be observed and analyzed over a period of time (after testing the web system and mobile application) on the sample populationSoftware development

Methods and tools

Survey through direct interviews with users. Those involved are 10 employees. The organization is BIOCENOSIS A.C from the eastern region of Michoacán

Technologies used

The tool for the design and development of a web system and mobile application, as well as the development environment and the database manager used in the development of the project.

Scrum is an agile and flexible methodology adapted to manage digital solutions, Mysql is a relational database management system developed under a dual license, for web development environments. PHP code is usually processed on a web server by an interpreter implemented as a module, a daemon, or as a common input interface (CGI) executable. Google's Firebase is a cloud platform for web and mobile app development. Hosting is a hosting service for websites . JavaScript, a dynamic, multi-paradigm, single-readed, prototype-based programming with support for object-oriented, imperative, and declarative programming. jQuery is a JavaScript library that simplifies the way you develop web applications. BOOTSTRAP, open source user interface framework, created for faster and easier web development. AJAX refers to a group of technologies that are used to develop web applications. By combining these technologies, web pages. It refers to a group of technologies that are used to develop web applications. By combining these technologies, web pages appear to be more responsive since small packets of data are exchanged with the server and web pages are not reloaded each time a user makes an input change. Human capital. It has the participation of two young students and three teachers, Technological Zitácuaro, Michoacán all in the formation of computer systems, with necessary and sufficient skills for the achievement of the project.

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Project Engineering

For the development of this project, the Scrum methodology is ideal due to its agile nature.

The sprints developed based on the selected methodology are:

1.Sprint planning

In the first team meeting, the definition of functionality, objectives, sprint risks, delivery deadIn the first team meeting, the definition of functionality, objectives, sprint risks, delivery deadlines, among others, was achieved. Subsequently, a meeting is held between the team to evaluate changes, decision making, improvements and more factors.

2.Sprint backlog

The sprints developed based on the selected methodology are:

1.Creation of the database and user interface.

2: Programming the registration, updating and deletion of users as well as activities.

3: Programming for uploading files to the system as well as downloading them and assigning permissions to users.

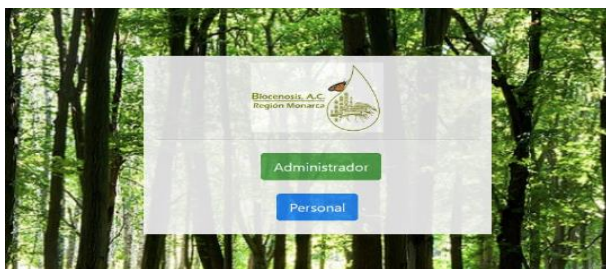4: Choice of host that will store the system and upload it.

Figure 1 SW Login Menu

Figure 2 SW Admin and Staff Login

Show all the actions that a user with the administrator role can carry out in the system, listing them within a vertical drop-down menu as shown in figures 1 and 2, in the WEB system.

When the work of the sprint is in progress, those in charge must guarantee that last minute changes are not generated that could affect the objectives of the sprint. In addition, it ensures compliance with the established deadlines.

Figure 3 Home screen

Show a submenu with the actions related to managing activities that the administrator can do in the WEB system.

Figure 4 Start Menu Screen with Activities Dropdown

All activities will be displayed registered in the database with the different options that can be done about the activities. It is worth mentioning that the administrator was given the permissions to be able to execute the options that are shown below about the activities regardless of whether the record activity or not, in the WEB system

Figure 5 List of activities

The activities that are controlled in the common application that will be relating to the WEB system, the starting screen. See Figure 5.

Figure 6 Imagen inicio app gestor

User management is important, where it is important to provide the password and access key. See Figure 6.

Figure 7 Manager app startup image

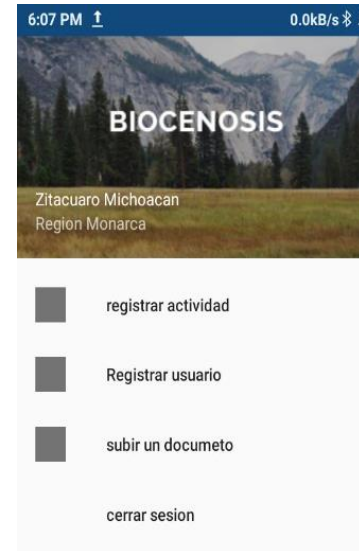Once you have provided the access keys, the application menu is displayed.

Figure 8 Main menu of the app.

This is the main window which has a menuSlider, clicking on the icon of the 3 rectangles displaying the options menu, figure 7.

3. Sprint review

At the end of the interval development, it is possible to analyze and evaluate the results

- Collaboration between teams, supervisors.

- External analytics are supported as a form of complementation.

- The work team answers what has been developed and what shortcomings they have had.

List all activities

This option shows all the activities registered in the database with the different options that can be carried out on the activities. It is worth mentioning that the administrator was given the permissions to be able to execute the options shown below on the activities regardless of whether the activity was registered or not, in the mobile application, as can be seen in illustrations 8 and 9.
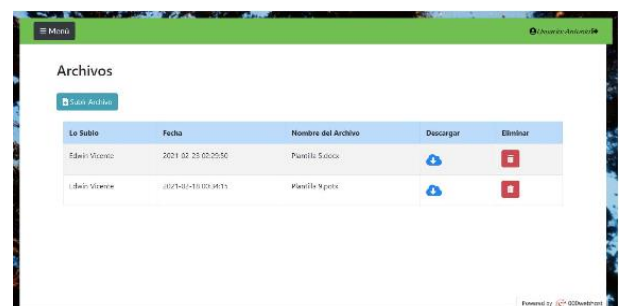

Figure 9 Screen to modify SW activities

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Figure 10 List activities screen finished. SW

Figure 11 View of the activity log window. apps

Feedback

The results are delivered to receive feedback from all those involved in the project. It was considered to add a section of completion of activities. When the finish button is pressed in the activities list, the id is sent by method POST to a file that will take care of doing two queries.

Once verified that the data is unique, they are entered in the corresponding table and at the same time the telephone number, username and password will be obtained, to send the new user through a WhatsApp their username and password with which they can access the system.


Figure 12 WhatsApp message that will be sent with the login data

In accordance with the Scrum methodology, at the end of each sprint the product obtained is evaluated, endorsing its functionality; from there, the client uses it already validated and configured.

There are two developments, one is the web system that is linked to the mobile application to further strengthen the web functionality of the systems. comprehensively.
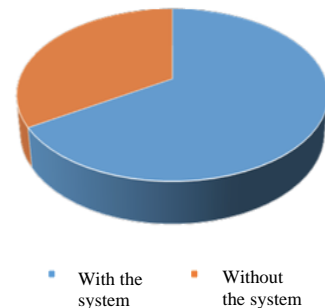
Results

The web system is hosted on an ad hoc host so that the organization could verify the correct operation of the system and the application. In graphic 1, you can see that the loss of documents was greatly reduced, since previously he had no control over his documents. The management of monthly documents is 10, of which there was only control of at least 2, representing 20% control before the SGW, after the system it is 100%.
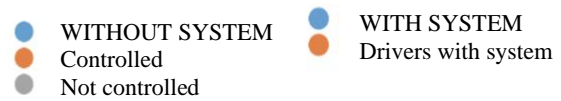
Graphic 1 Reduction of documents loss

In graphic 2, we can see the improvement in terms of the development of the activities, since now with the system they can visualize the progress of each of their activities and manage to respond to the observations of calls.

Development of activities

Graphic 2 Improvement in the development of activities

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Before the system, you only had the opportunity to carry out an activity in a efficient and collaborative of three activities that should be addressed.

Aspects/options	APP	Documents	Percentage of improvement
Event notification	Now from mobile with a notification, which notifies the user of calls.	Forgetting to call, due to omission of registration of the activity.	100% of 10 notifications that were attended. Before, only three out of 10 per month were attended, now with the mobile application and the web system, all calls are covered.
Access to information	Access to information is 24 hours 365 days	Information is only accessible when the office is open, this activity was before the system and the application.	The attention was Face-to-face, having an effectiveness of 20%. With the implementation of the web system and the mobile application, 100% service is provided.
Ease in handling documentation	Documents are available on the server to users at any time	It was attended at times at certain times according to the user or client.	Users took turns using the computer equipment for their use, which generated an effectiveness of 2%, now allowing 90% to be covered, since a project must be handled asynchronously.
hHstories	The database saves all the information at the time the application is accessed	There is a record of the paperwork from the beginning to the end in The organization according to the database in the cloud.	Only 70% of documents correspond to projects. Currently every project has a history, covering 100%.
Job Alerts/ activities	The application notifies the user when there is a new activity	Previously, important dates were forgotten, because the use of the paper agenda was not reviewed and was forgotten in the office.	So far all activities are attended to 100%, previously only 70%.

Table 1 Comparison of application vs. procedure

Web technology with well-designed tools gives certainty to the development of a robust, functional and efficient software product for an organization. BIOCENOSIS A. C. Monarca region is experiencing an integration to digital management.

Gratitude

Conclusions

The use of an agile design methodology in web projects and mobile applications such as Scrum, and software that allows systematic planning, which includes collaborative teamwork, leadership by experts in the area, enriching the developer experience (teachers and students) as the project progresses.

Web technology with well-designed tools, gives certainty to the development of a robust, functional and efficient software product for an organization. BIOCENOCIS AC Monarch region is experiencing an integration to digital management, benefiting the origin communities as in all the region.

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