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VISUAL FOX PRO AND ITS PRESENCE IN A HOTEL INFORMATION SYSTEM

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Abstract Information and communication technologies, ICT, have acquired great importance for tourism companies from the end of the 20th century to the present day. The emergence of hotel management systems has opened new channels for information, promotion and distribution of services. Since ancient times, as technology advances, companies seek to go hand in hand with them, since they contribute to business development (Joaquim Martínez, 2006).

Using the Visual Fox Pro tool, a complete development of a hotel information system was carried out taking into account the needs of a hotel in Mexico.

Key words: Check-in, Check-Out, Information , PMS.

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Through the use of the Visual Fox Pro tool, the complete development of a hotel information system was carried out taking into account the needs of a hotel in Mexico.

Key words - Check.in, Check-Out, Information System, PMS

INTRODUCTION

Tourism in the city of Puebla attracts thousands of tourists annually to the state capital. The main attraction is religious tourism [11].
As a result of the pandemic, tourism in entity fell drastically, placing it in third place nationally in terms of loss of tourist flow.[12] The hotel industry has become a dynamic, solid and fast-growing sector, which in Mexico is consolidated as an activity that generates foreign exchange, employment and investment," to Miguel Torruco Marqués, head of the Ministry of Tourism (Sectur).
With the information system it is intended to provide the necessary tools to the employees of a hotel, and thus make a quick and efficient care, this would be improving the security of information within a hotel. With the model of the management system is intended to control operations that would handle the workers of the hotel entity, using a customized software tool, which will improve the security of information, and reports of this at the time requested, and also aims to save time in the processes of check - in, check - out. In this way the hotel entity would be improving its services.

PROBLEM STATEMENT

Currently, Mexico does not have an information system for the management and administration of hotel processes, there are some systems; however, these do not have a good interface design, in addition to having functionalities and options that are unnecessary for the administration of a hotel in Mexico. Web systems for lodging businesses are a good option, but most of them are focused on Europe, also, the internet connection in the country is unstable unlike other countries.

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countries, so working in the cloud with this type of internet applications would not be the best decision. Therefore, it is desired to develop a system that is focused on national requirements and that can be adapted to the resources of any company dedicated to hosting.

GENERAL OBJECTIVE

To develop the "Room Management" module for the hotel information system, which controls and streamlines administrative tasks through Visual Fox Pro.

SPECIFIC OBJECTIVES

- Analyze operational and administrative management requirements in the hotel sector.
- Design of diagrams for the management module for the hotel software.
- Build the room management module using the Visual Fox Pro development environment.
- Implement and test the module integrated to the general hotel system.

JUSTIFICATION

Visual Fox Pro, is a data and file management system compatible with different operating systems [8], acquired by Microsoft for 2.5 million dollars, its most recent version 9.0 offers a free version, information from Yira [10]. It currently works as a procedural programming properly ordered for operation on different object-oriented platforms [7]. Since version 7, Visual Fox Pro has been available as a stand-alone application [10] Applications for for desktop, client/server environments, Tablet, PC or for web because of its powerful object-oriented programming language, it can connect to Oracle, Microsoft SQL Server or MySQL database servers [10].

For its powerful handling of views, cursors and complete control of relational structures [6]. Its version 9.0 provides extensive XML support for XML-based web services such as reports in XML format [6], as well as support for Microsoft's IntelliSense technology, facilitating data entry from Excel, which is still used for desktop computing solutions [5], and its ease of graphing [9]. The construction of a hotel management system is nowadays very necessary in order to manage in an efficient and effective way.

The correct way to manage and operate a hotel in an efficient, agile and automated way. A hotel system not only helps the hotel manager, it helps all employees in general. One of its main advantages is that it allows us to automate different processes, thus reducing the risk of errors, in addition to having the information fully updated and available for future decision making. Having a hotel management system that offers the services that a hotel wants and needs is key to manage a hotel effectively. The development of this project is mainly to help Mexican hotel companies to manage their hotel efficiently and thus reduce the use of paper logs or agendas, automating their activities and processes.

THEORETICAL FRAMEWORK

Information system (IS) A formal set of processes that, operating on a set of structured data according to the needs of a company, collects, elaborates and distributes the information necessary for the operation of this company and for the corresponding management and control activities, supporting, at least in part, the decision making necessary to carry out the company's business functions and processes in accordance with its strategy. (Andreu et al. 1996) Each information system will use different information and communication technologies. But the information system is not only the technologies it uses but also the people involved or the definition of the information flow. These information systems appear due to the needs of collection, storage, processing and distribution of information within the organization [1].

Property Management System (PMS) (Hotel Management Systems), information systems based on information technologies that are currently used in hotels. These systems can also be adopted, in their possible variants, by all companies offering accommodation services, such as motels, campsites, rural tourism or apartment rentals. The functions of these systems can be divided into "front office" and "back office", although the concept of PMS is often associated with the "front office" functionalities. The "front office" functionalities are those that refer to the part of the system that enters into

direct contact with the customer: reception, concierge or bar and restaurant. The "back office" part refers to the company's internal management processes: accounting, room management, human resources, marketing or decision support [2].

Check-in: Process carried out at a hotel, airport or port, which consists of registering the arrival of a person [3].

Check-out: Process carried out at a hotel, airport or port, which consists of registering a person's departure [4].

STATE OF THE ART

There are some hotel management software, with some very particular characteristics, however, in this paper we took into account a specific software, this hotel management is called eZee FrontDesk NextGen 7.0, this is a very complete hotel system. eZee FrontDesk is a complete PMS (property management system) solution for small, large and very large hotels. It covers all aspects of property management and offers modules for front desk, laundry, back-office, accounting, channel management, reporting and more. eZee FrontDesk is quick and easy to implement and includes multiple languages.

DEVELOPMENT

As a first step, the Entity-Relationship diagram was created for the construction of the database for the hotel information system (Figure 1).

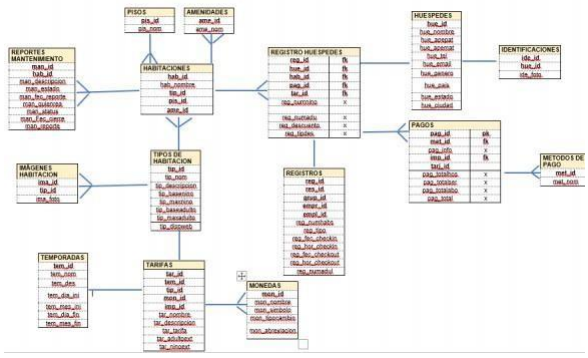

Figure 1. E-R diagram Subsequently, the construction of the tables for the database was carried out.

created from the E-R diagram presented above (Figure 2).

Figure 2. Tables for the data base

As a third step, the coding for database for the information system was done from the construction of the tables presented previously, the coding was done in a .txt file to later test it in SQL (Figure 3).

```
TABLE amenidades
[ame_id], [int], NOT NULL
[ame_nom], [varchar] (20), NOT NULL
INDEX [ame_id]

TABLE pisos
[pis_id], [int], NOT NULL
[pis_nom], [varchar] (20), NOT NULL
INDEX [pis_id]

TABLE metodo_pagos
[met_id], [int], NOT NULL
[met_nom], [varchar] (20), NOT NULL
INDEX [met_id]

TABLE tipos_habitacion
[tip_id], [int], NOT NULL
[tip_nom], [varchar] (20), NOT NULL
[tip_descripcion], [varchar] (180), NULL
[tip_basenino], [int], NOT NULL
[tip_maxnino], [int], NOT NULL
[tip_baseadulto], [int], NOT NULL
[tip_maxadulto], [int], NOT NULL
[tip_dispweb], [decimal], NULL
INDEX [tip_id]

TABLE temporadas
[tem_id], [int], NOT NULL
[tem_nom], [varchar] (20), NOT NULL
[tem_des], [varchar] (180), NULL
[tem_dia_ini], [int], NOT NULL
[tem_mes_ini], [varchar] (15), NOT NULL
[tem_dia_fin], [int], NOT NULL
[tem_mes_fin], [varchar] (15), NOT NULL
INDEX [tem_id]
```

Figure 3. Coding

Once the tables were elaborated, the next step was to work under the visual FoxPro environment, where all the corresponding screens were made, as well as the connection with SQL to be able to work with the database.

Figure 4 shows the code, which is inside the Click function, in the "Add" button, the code works as follows: The table view is selected, then the instruction is given that the id is auto incrementable, then the refresh function is used, this function is for our text boxes to refresh, that is to say that they are blank.

Otherwise, these would be filled with the

The last data entered, then, with the enabled function we allow the text boxes to be available to be filled with data provided by the user, the only one that is not set as Enabled is the id since it is created automatically.

Figure 4. Code for "Add" button

As a first instance there are 3 buttons which are Add, Save and Delete, all of them are deactivated; the add button is activated by clicking on it, and once the data is filled in, the Save button is activated by clicking on it. the following instruction: this.Parent.cmdSave.Enabled= .T., which is the last instruction for the Add button, it is worth mentioning that this same procedure was done with all the corresponding screens.

Figure 5 shows the code, which is located inside the click function, in the add button, the code works follows: As in the previous figure, the first thing you get is a view of the corresponding table, but in this case you only get a view only in case the id exists, since after having added some data, the "Save" button will be enabled. The added data is inserted in the corresponding table, then the "Save" button will add it to the database. With this same button it is possible to modify data that has already been added, but as in the previous case the id cannot be modified. This same procedure was done with all the screens, obviously with different values since each table is different.

Figure 5. Code for "Save" button

The corresponding code for the "Delete" button is shown in Figure 6.
Visual FoxPro handles properties quite well, since you could enable a window for confirmation of deletion. And as in the previous cases you could only delete a record in case the id existed.

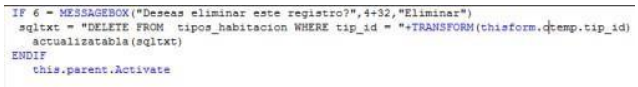

Figure 6. Code for "Delete" button

Figure 7. shows the final "Company" screen, where the requested values are added, modified, deleted and displayed. All the windows have the same functions.

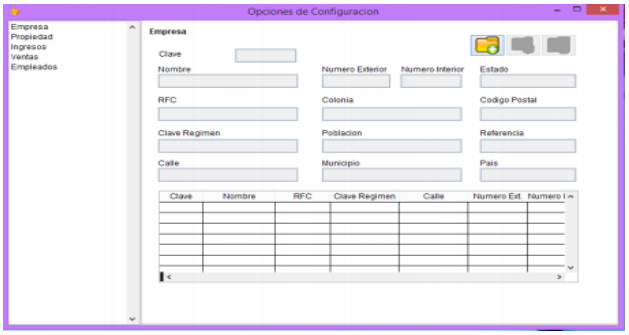

Figure 7. "Configuration Options" Screen

Figure 8 shows the final "Properties" screen, where the requested values are added, modified, deleted and displayed. The property window has secondary windows, which are floors, types of rooms, type of rates, etc.

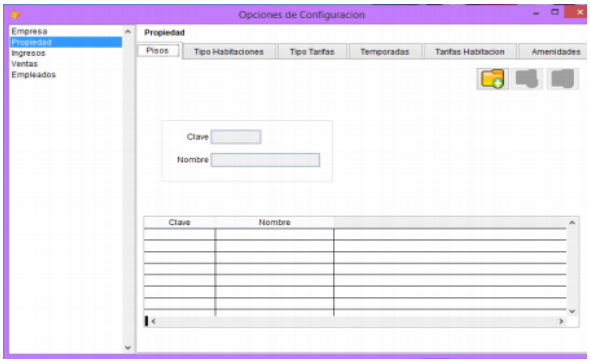

Figure 8. Final "Properties" screen

Figure 9 shows the income window, as can be seen within this window, there are secondary windows such as taxes, currencies, payment methods, etc.

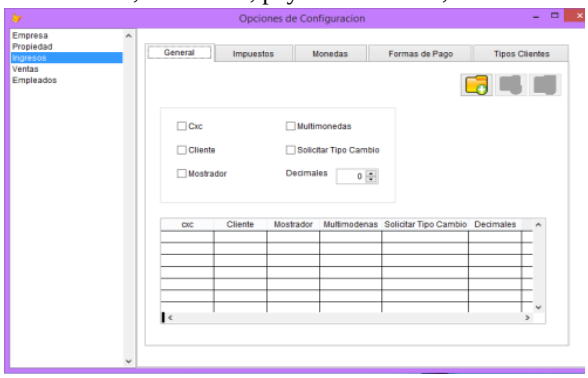

Figure 9. Final "Income" screen

Figure 10. shows the screen for displaying rooms, which shows the date on which the room is being occupied, the total to be paid and the type of room being occupied, which can be filtered by date.

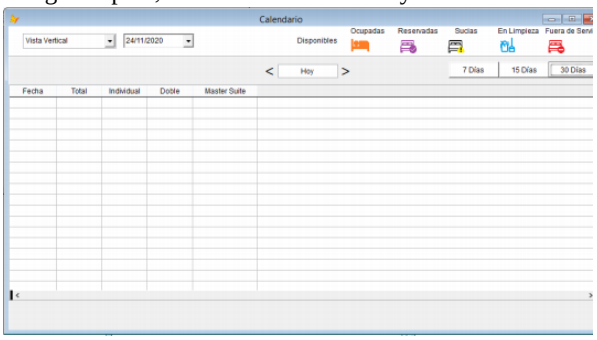

Figure 10. Vertical view for bed visualization.

Figure 11 shows the horizontal view, for the visualization of rooms, in the horizontal format, the room number, room type, room type, room number and room type are shown.

The room number followed by the days on which it is being occupied, Saturday and Sunday are shown in red, since those days the rate increases.

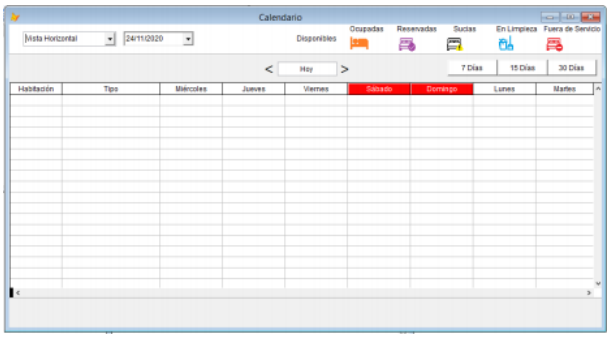

Figure 11. Horizontal view for bed visualization.

Figure 12 shows a calendar, which is displayed by month, and can be filtered by room number, thus indicating the availability and its status.

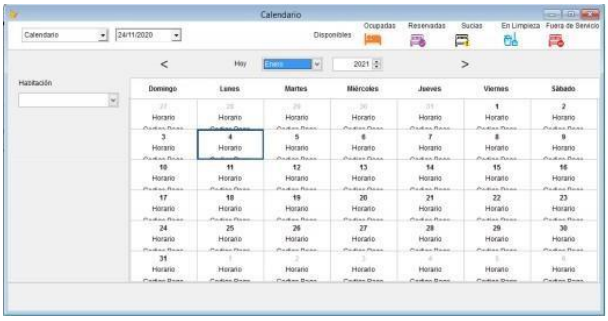

Figure 12. Rooms Calendar

Figure 13 shows the Check-In screen, as you can see it asks for the necessary information to make a registration, this has secondary windows which are: guest data, and payments made.

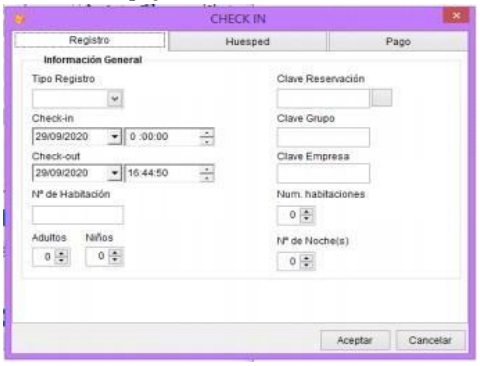

Figure 13. Screen for the elaboration of a Check -In

DISCUSSION AND ANALYSIS OF RESULTS

The interface obtained shows the efficient management of the metadata, in which the graphs of results of occurrences per day are shown, in addition to obtaining the same updated information through printed reports for timely decision making in the allocation rooms and availability offer to potential guests.

Future work on the desktop application obtained and implemented in Visual Foz Pro, thanks to its efficiency and compatibility with database managers for web and mobile technology, can be easily migrated without major setbacks in a short period of time. Offering the end user, a friendly digital experience in competitive technological environments of the hotel industry in Puebla.

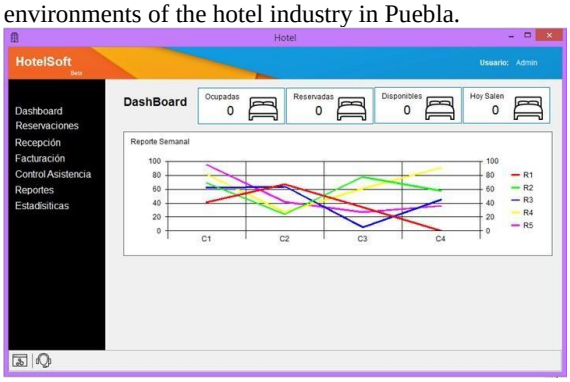

Figure 14. System home page This provides an enviable graphical output solution.

In the case of hotel management systems, it is estimated that in international tourist destinations in countries such as Spain, a higher percentage of hotel room sales are made through websites and online travel agencies, compared to the airline segment [15]. Therefore, in Mexico there is a greater interest in having state-of-the-art information systems.

CONCLUSIONS

Nowadays, information systems are important for any kind of company, as they provide a competitive advantage in any environment by improving the efficiency of the processes. In the hotel sector, the information of each module plays a fundamental role in future decision making. The information systems of each of the hotels have common characteristics, which is why the information system is functional for any type of hotel. With the hotel information system presented here we is certain that with the use of this system it is possible to improve the processes within a hotel, as well as to increase productivity and competitiveness. With the contribution of the "Room Management" module, this hotel system manages to obtain relevant and immediate information from each of the rooms within a hotel as a means of technological communication [13] that guarantees synchronization and availability at a glance [14]. Each hotel has different economics, so perhaps a disadvantage of this system could be that some hotels do not have the necessary resources to obtain a high-cost hotel management system.

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