

**Implementation of a ticket management system for a higher education institution****Implementación de un sistema gestor de tickets para una institución de educación superior**

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Received: January 15, 2022; Accepted: June 30, 2022

**Abstract**

This article intends to implement a ticket management system for a higher education institution and describe its importance today, describe the pillars on which its functionality is based, identify which is the model view controller structure so that the system is not robust, for Finally, analyze the system as a help desk for good communication between user and super user. This help desk system is a technological management process, which is based on a set of technical and human resources that allows supporting different levels of computer users of an entity, adapting to the needs of an institution. The result obtained is that of a help desk system that provides a point of support and communication between the super user of information technologies and the end users to whom the attention is provided. By making use of this tool, daily decision-making intervenes that helps to resolve technological incidents, and thereby prevents the processes of the different areas of the institution from being affected for a long time.

**Resumen**

Este artículo pretende implementar un sistema gestor de tickets para una institución de educación superior y describir su importancia en la actualidad, describir los pilares en que se sustenta su funcionalidad, identificar cual es la estructura modelo vista controlador para que el sistema no sea robusto, por último, analizar el sistema como mesa de ayuda para una buena la comunicación entre usuario y super usuario. Este sistema de mesa de ayuda es un proceso de gestión tecnológico, el cual se basa en un conjunto de recursos técnicos y humanos que permite dar soporte a diferentes niveles de usuarios informáticos de una entidad, adaptándose a las necesidades de una institución. El resultado obtenido es el de un sistema de mesa de ayuda que provee un punto de apoyo y comunicación entre el super usuario de tecnologías de la información y los usuarios finales a los que se les brinda la atención. Al hacer uso de esta herramienta interviene el tomar decisiones diarias que ayudan a resolver las incidencias tecnológicas, y con ello evitar que los procesos de las diferentes áreas de la institución se vean afectadas por tiempo prolongado.

**Management system, Help desk, Automation****Sistema gestor, Mesa de ayuda, Automatización**

**Citation:** ZACARIAS-JIMENEZ, Jaime David. Implementation of a ticket management system for a higher education institution. *Journal-Law and Economy*. 2022. 6-10:12-16.

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## Introduction

In this research article you will be able to observe the operation and result of a system capable of managing and organising the requests for telematic services from the different areas of the Tecnológico de Estudios Superiores de Cuautitlán Izcalli by means of a service request ticket generator which has the purpose of operating as a tool for the improvement of the requests made and the follow-up of the same, with the aim of not leaving any request unattended and being able to generate a follow-up report, control and statistical analysis of the main problems that the institution has related to computer systems and information technologies.

### *State of the art*

#### *Starting point (Background)*

Over time, web technologies have evolved to the point of having new technology for institutional solutions. Java is currently used for mobile devices.

In 2015 Roberts created a help desk management system with a ticketing objective that helps internal customers. This management system provides solutions to problems through reports that allow us to determine recurring and repetitive events.

In Santa Cruz Atahualpa Robinson Rubén Caqui Tapia, Cesar Martin Polín Montalvo, Michael developed a similar web-based help desk system that saves time and resources for the company.

The Help Desk software or Help Desk system provides a point of support and contact between the IT provider and the end users. In 2016, a mixed research was conducted through a questionnaire survey technique applied to 68 users and the results indicate that, in general, the users of the Help Desk system at CUSUR were satisfied with the service received (Santa Cruz Atahualpa, Caqui Tapia, & Polin Montalvo, 2015).

### *Current development of the ticketing system*

In the institutions problems of misinformation arise in terms of documentation, solution times etc... Faced with this problem in 2018 was raised as collusion a web system for incident management based on the ITIL framework a health company that system handles four modules of registration of requests, requests detail module, module Bank module errors and Dashboard module, in order to provide a solution to the problems already mentioned. (Olivares Villena & Rojas Chilet, 2018)

### *Trend of ticketing systems*

Derived from the health emergency that the world is experiencing, technologies have played an important role in solving problems, in the educational service a Virtual Admission system was implemented at the National Autonomous University of Tayacaja, in order to ensure the continuity of the educational service at the higher level. It was one of the first universities in the country to guarantee the processes; it is a process of continuous improvement. The Help Desk, which provides a point of support and contact between the IT provider and the end users (Chávez Cotera, 2021).

### *Implementation*

In the Tecnológico de Estudios Superiores de Cuautitlán Izcalli, the implementation of a Help Desk is envisioned as in the previous cases, as it is a necessity for continuous improvement with ticket-based reporting modules for good communication between the user and the institution. With the help of new technologies, the implementation of a system that provides a point of support and communication between the IT super user and the end users to whom it provides care is carried out. It helps with daily decisions in order to solve technological incidences.

## Methodology to be developed

### System design

A Web interface is a graphic system that allows users to access the contents of the Web through the use of graphic elements, which are known by most of the users that access our page. The main objective in the design of a Web interface is that its potential users can access all its contents as quickly and easily as possible.

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Define how the content is presented

In practically all web pages there are elements that are common. Some examples are: the header, the navigation menu, the body or the footer. Knowing the name of each part of a website is essential as it is part of the vocabulary used by developers and designers. The following figure shows the general structure of a web site.



Figure 1 Structure of the system

Platform and interaction mechanisms

XAMPP is a platform-independent, free software server, consisting mainly of the MySQL database, the Apache web server and the interpreters for scripting languages: PHP and Perl.

It allows you to easily install Apache on your own computer, regardless of your operating system (Linux, Windows, MAC or Solaris). And best of all, it's free to use!

XAMPP is a development tool that allows you to test your work (web pages or programming, for example) on your own computer without having to access the internet.

I recommend working directly on the server, if you have a very good internet connection, this may not be your case, or you may be working from somewhere else and it will be very useful.

Modelling (use case diagrams, class diagrams, activity diagrams and ER diagrams).

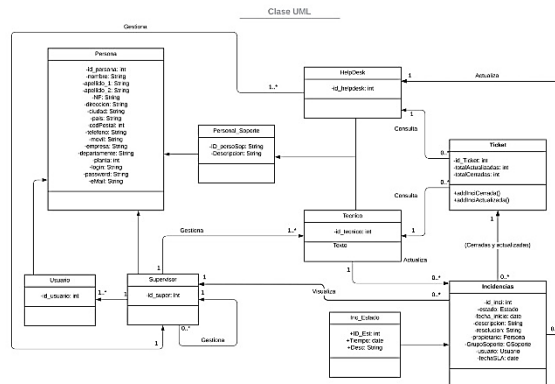


Figure 2 UML diagram

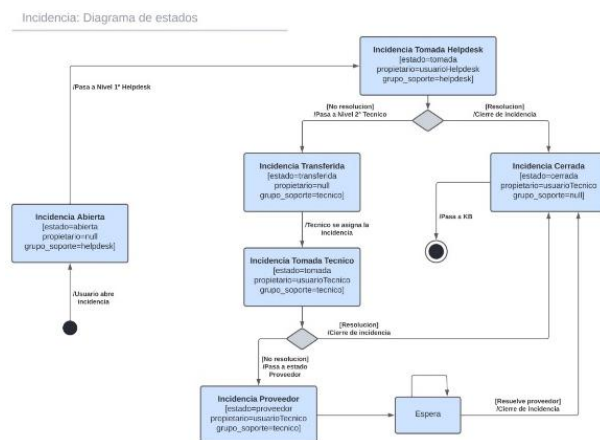


Figure 3 State diagram

Software layout

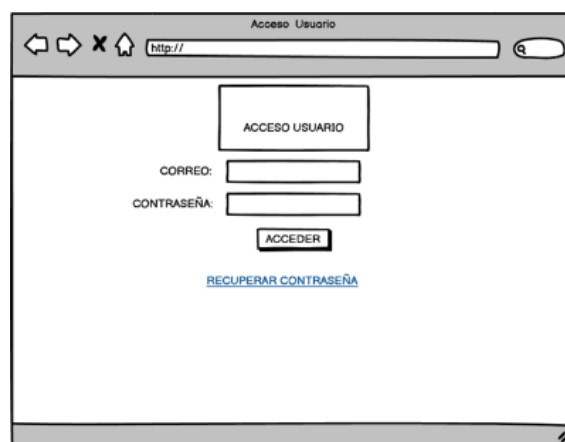
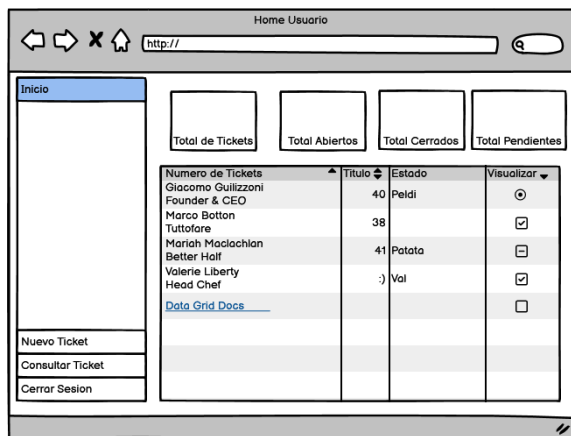


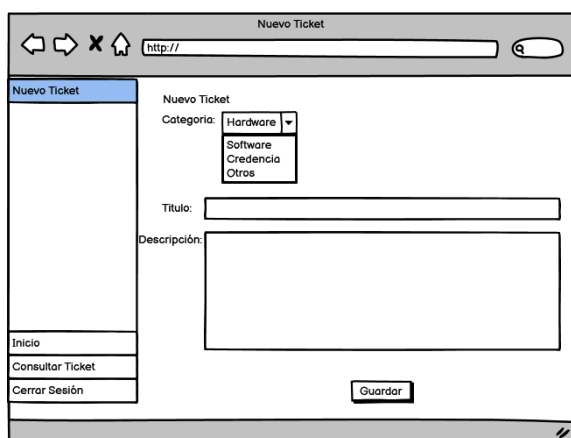
Figure 4 User access

Home user



**Figure 5** User Home

Illustration 2 User Home Access



**Figure 6** New ticket

**Results**

User login.



**Figure 7** Home

A login is created so that the administrative staff within the institution can enter the system and interact with the different functions that the interface allows them to perform, as well as send their requests so that they can have their computer equipment serviced or repaired.

User registration.



**Figure 8** User registration

A form is created to register in case the user is new with all his information, as well as specific data such as his employee number to validate that he is a member of the institution and to provide him with an excellent service.

Ticket registration.



**Figure 9** Ticket registration

Requested tickets.

Folio	Solicitante	Area solicitada	Asunto	Prioridad	status	Detalle	Fecha Levantamiento	Fecha Cierre	Acción
1	ALBERTOCAMACHO MORA	Departamento de Computo y Telemática	Internet	Urgente	por atender	No tengo internet en mi computadora	2022-12-02	0000-00-00	
2	ALBERTOCAMACHO MORA	Departamento de Computo y Telemática			por atender		2022-12-02	0000-00-00	
3	ALBERTOCAMACHO MORA	Departamento de Computo y Telemática	Se me cayo la	Urgente	por atender	Apuzate Bato	2022-12-03	0000-00-00	

**Figure 10** Requested ticket

User Editor.



**Figure 11** User details

There is a function to edit users if they have entered their information incorrectly when registering. Super user view where you can find the records of the requested tickets.

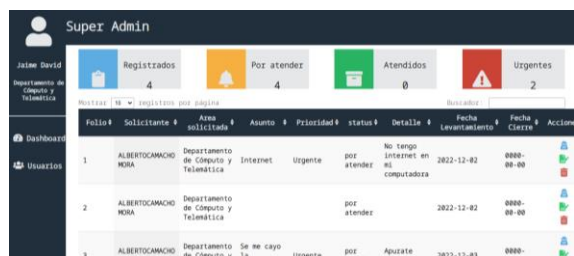


Figure 12 Super admin window

Super user view where the information panel is located.

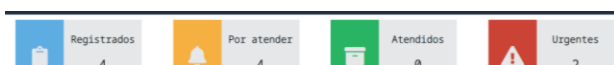


Figure 13 Information panel

The tickets by the super admin can be deleted, edited and viewed, these buttons are located in the column named Actions which is the last box with its purpose is to modify the various tasks if there was an error in the capture of information and can change their priority status.

## Conclusions

The interface is not something identical in every institution where some incident request management system is managed, but with some essential features for every type of organisation, the advantage of having the development is that it can be adapted to your needs to other needs, with its own parameters, processes and indicators, it can be configurable to meet the particular requirements in some other technology.

The help desk is an essential service for institutions to carry out technical support operations. Its objective is to resolve requests, problems or complaints immediately, as well as to refer more complex incidents to specialised levels of support.

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