

## Title: Contingency Access Control COVID-19 Technological sciences/ Computer technology/ Code and coding systems

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# Introduction

The main goal of this work is to show results obtained from a software called "Access Control by Contingency COVID-19" which allows the institution control the access to facilities after returning from COVID pandemic in order to avoid crowds of people, this software will help avoid COVID-19 infections.

Application was developed using a web application and QR code technology, Java with SQLite, and Javascript

# Introduction

## **Problem**

During the pandemic, regular activities that are part of the curriculum and work at the Universidad Tecnológica de San Juan del Río were affected, and students, employees and external personnel interested in accessing the university facilities were not allowed to access the institution due to their unknown health status, as well as the access control all facilities

## **Justification**

The Technical Board of Health requests as a requirement to report on the health status and symptoms of COVID-19 of the people who need to enter the facilities of the institution, that is why a survey is the most convenient thing to do.

# Methodology

A Scrum methodology. This process consists of the following phases: sprint planning, development stage, sprint review and feedback.

In sprint planning, the goal is to define what can be delivered in the sprint and how that work will be accomplished. Sprint planning is done in collaboration with the entire scrum team.

A list of activities were made based on the project requirements, considering the estimated days of development, the status of each activity, the conditions and the approval of the result.

# Methodology

In the development stage, when the sprint is in progress, we must ensure that:

- No changes are made that affect the objective of the Sprint;
- Quality objectives are not lowered

Scope may be clarified and renegotiated between the product owner and the development team as it is learned.

At the end of the process, the results are delivered to the customers who could use the software and in response to which they could have opinions as feedback and which allow for correction and testing each time a sprint is completed.

The product backlog contains all the work that is necessary for the development or construction of our system or product and is the responsibility of the product owner. In fact, it is the result of the product owner's work with the different stakeholders (customer/s, user/s).

# Results

The web application for the execution of a survey with the health elements related to COVID-19 for all persons interested in entering the facilities of the Technological University of San Juan del Río and the generation of the QR code with the data of the person and the survey.

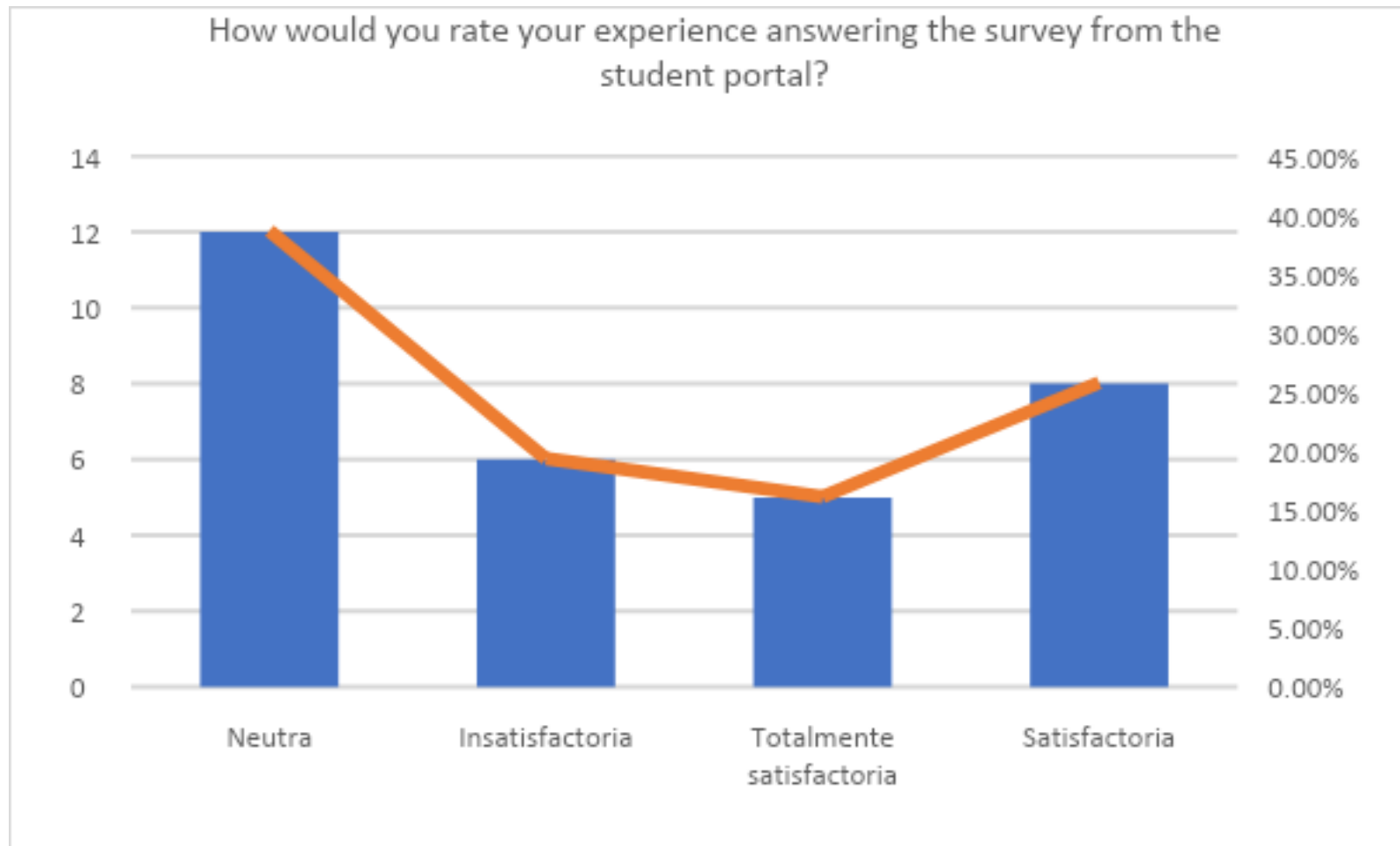
Depending on whether a user is a student, employee or external staff, a different window in the application is displayed to select where to go, after that the survey is displayed with the same selection elements, for all persons.

The server reads the data sent by the client and stores it in the database. It was developed C++

QZxing is a library that has been used for years in all kinds of applications, from personal to professional. This library allows us in a very simple way to read a large number of codes, but we focus on the QR code.

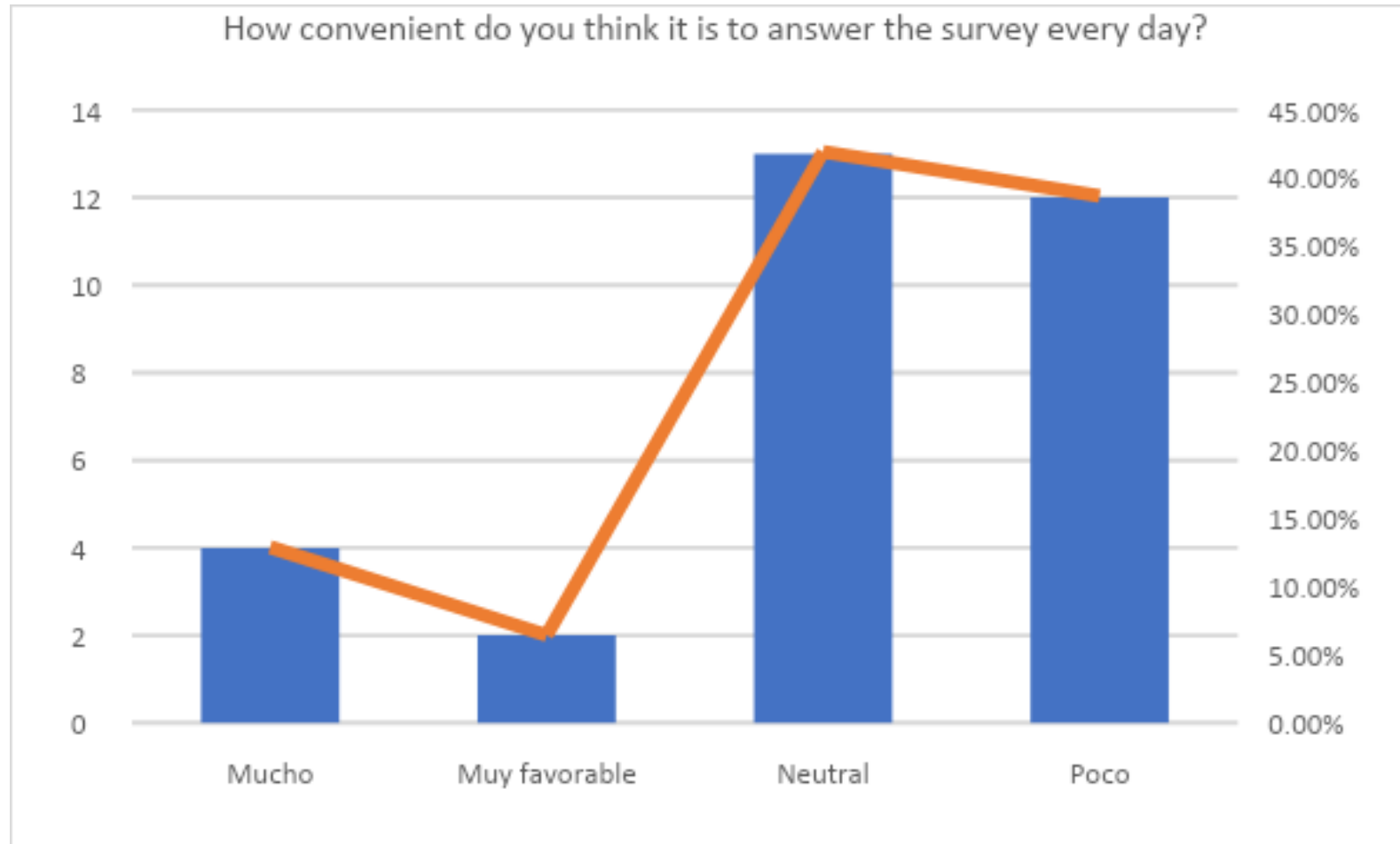
# Results

survey to the students, to reflect their opinion when using the applications developed in the present project.



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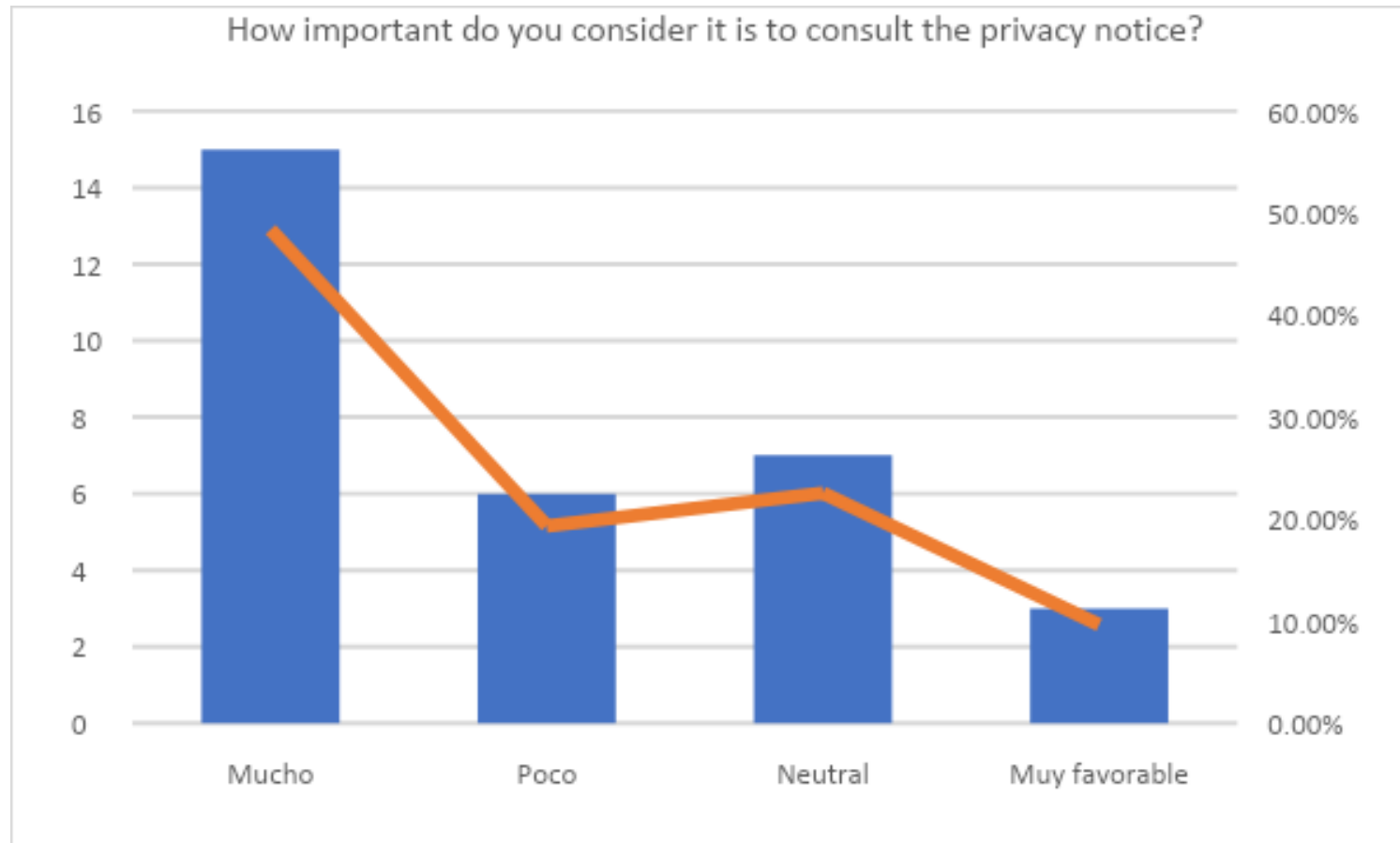
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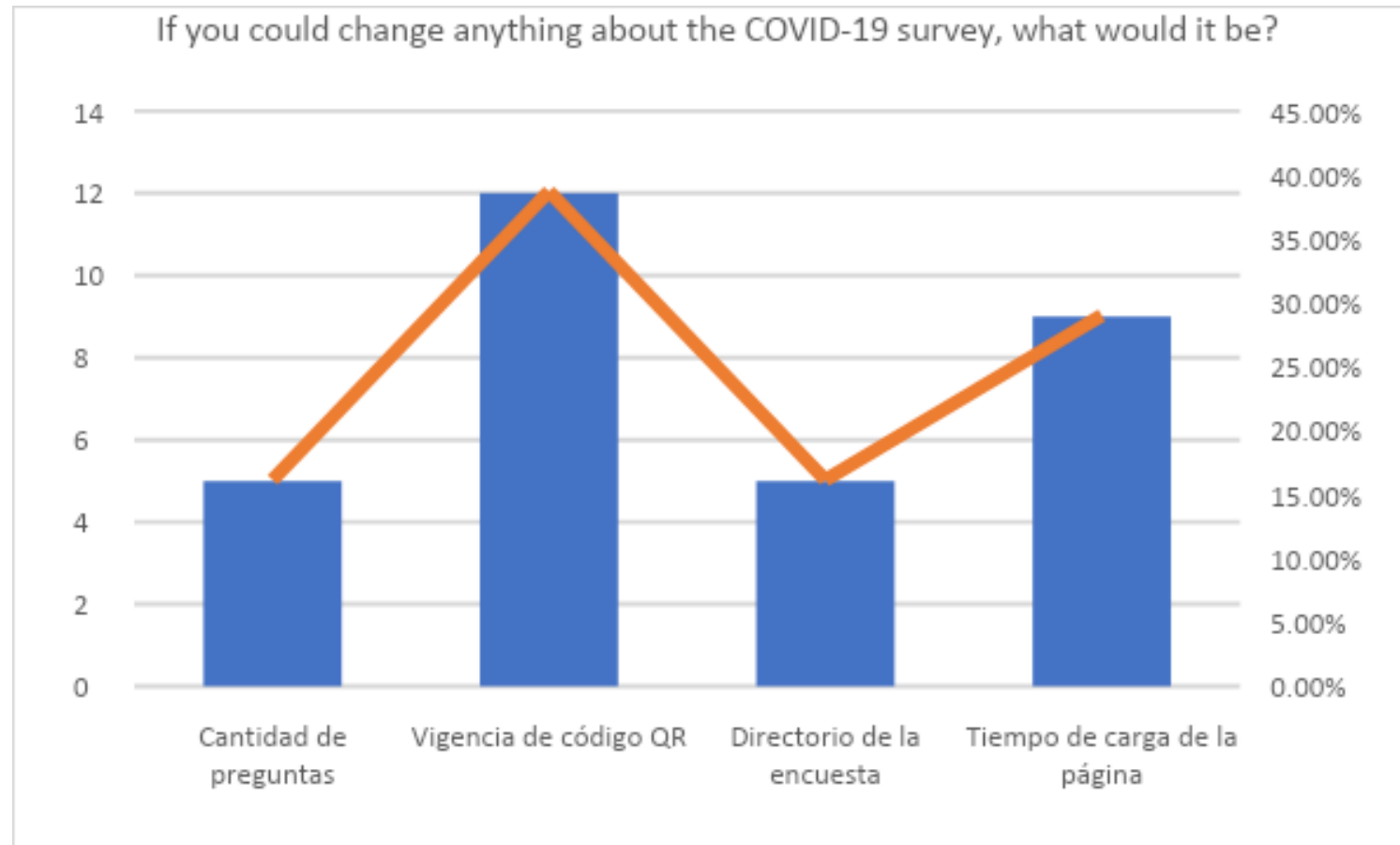
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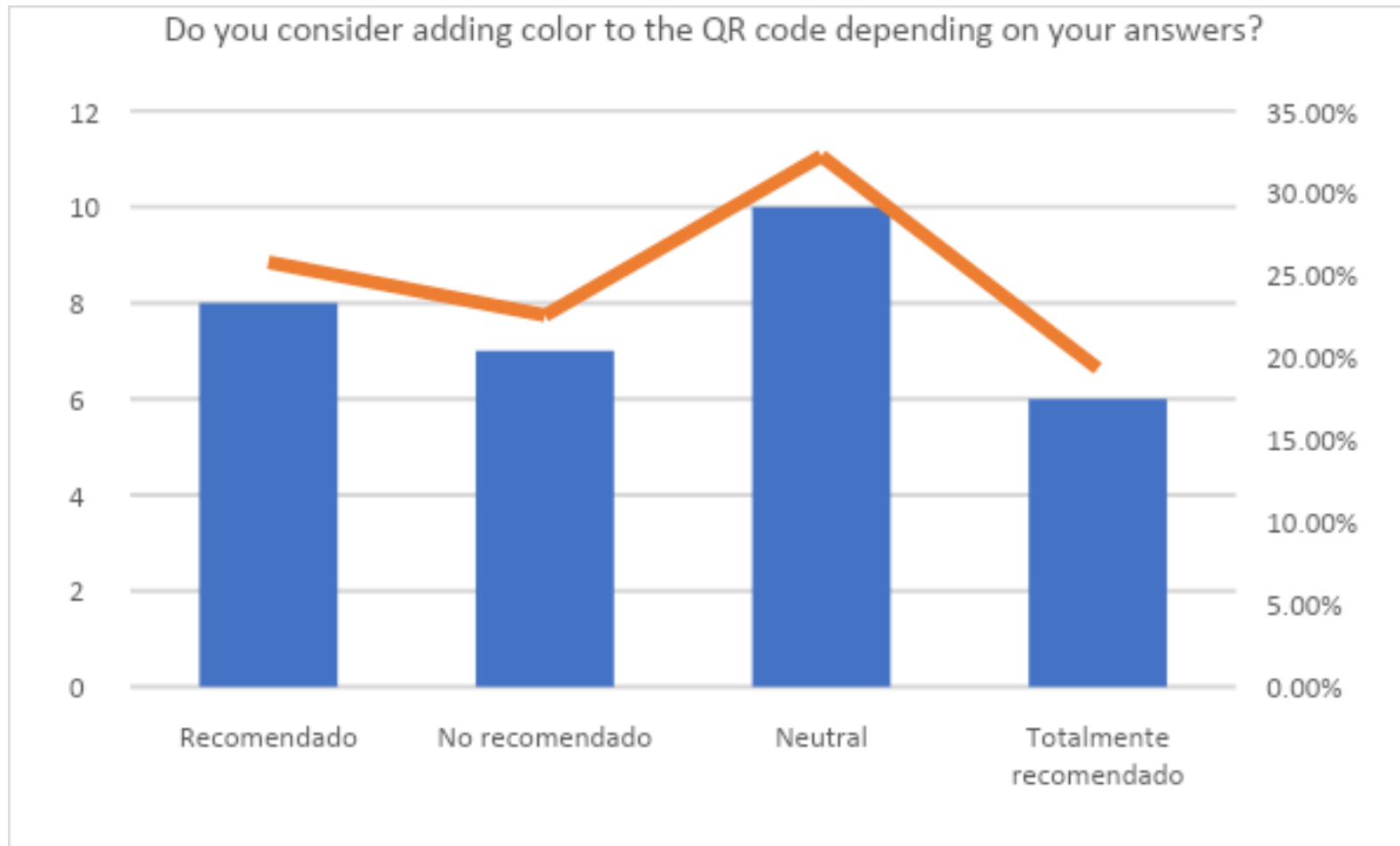
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# Conclusions

A pandemic is a situation that we were not prepared to face it , during the first days of confinement we were obligated to adapt as soon as possible to the changes generated like online work and occasional attendance at work facilities, one of the challenges was to control the entrance and attendance in order not to exceed the number of persons allowed within the facilities

In addition, the development of the project was carried out with great haste because the situation warranted it, there are many opportunities for improvement in the presentation of the user interfaces, possibly more graphics can be used for a better experience, it is necessary to evaluate the client-server technology through sockets to see if it is the most efficient way to solve the problem or if some technological alternative can improve the speed, the distance of the clients with the server since wifi is used and has well known limits in the scope.

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