UNI GYM: control system at the gym of the University of Ibagué

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Abstract— **Information systems represent a tool that supports decision-making in every organization, for this reason, the content of information should be protected and attention should be paid to the data that is established in order to generate quality information. This article presents the development of a web page. The design starts from a database, which stores the user's information. This system allows the visualization of the flow of people entering the gym during the week. It also unleashes a series of options that are manipulated by the administrator, to assign a grade to the student depending on his behavior in the gym facilities. An average he needs to get into the facility.And a mass e-mail to all the users of the Ibagué University gym in case of any new developments.**

I. INTRODUCTION

As students of Electronic Engineering at the University of Ibagué we decided to investigate what was problematic about the gym area at the University. We show that the University of Ibagué needs to carry out the counting and registration of the people who enter the gym of its facilities, since the administrative part is in charge of carrying out the expenses, profits and what happens month after month. University administrators need this data to be reliable and secure. The project was designed in a way focused on providing a viable solution to the problem that is being presented in the internal area of the gym, since, although the issue has been addressed in previous projects, as students we seek to show an alternative that is economical, understandable and manageable in all fields covered by the theme of gyms. This is why we want to implement a registration system that allows the coordinator and/or administrator to keep a record of the people who enter the gym. The collected data will be stored in a database, allowing easy access to the information required by the administrator.Just like Olaya says. V (2014) "*Database management systems are the most appropriate tool for storing data in an information system due to their security, fault recovery, centralised management, standardization of query language and advanced functionality*". There will also be a rating of students' behavior inside the facility, which will allow the administrator to tell whether or not to give the student the proper income. And a timely email when there's something new in the gym.

II. REFERENCE FRAMEWORK

The problem that will be solved is the following: The University of Ibagué needs to carry out the counting and registration of the people who enter the one of its facilities, because the administrative part that is responsible for carrying out the expenses, earnings and what happens month by month with respect to the university needs these data to be reliable and secure, This is why we want to implement a registration system in which students are registered at the time of entry and take the gym service. For this we decided to investigate related issues that your proposal and solution is similar to our project to develop.

1. **Churn prediction model for effective gym customer retention** This proposal consists of a mobile gym membership that allows customers to terminate a contract at short notice. In addition, it aims to predict customer behavior, in order to increase gym utilization and customer retention. -Fuente:https://ieeexplore.ieee.org/document/8256385/figuresfigures

2. **An Exercise Data Logging System for Retrofitting Gym Equipment** This proposal is supported by systems to record exercise data for each individual, these data serve to track personal progress. The recorded data comes from the exercise equipment that facilitates the recording of data by means of sensors or databases. Fuente : https://ieeexplore.ieee.org/document/6975460

3. **Survey Paper on Gym Management System** The purpose of this project is to facilitate the registration of gym users. Renewing its registration and data storage system for people entering the gym.*Fuente:http://eds.a.ebscohost.com.ezproxy.unibague.edu.co:2048/eds/ 8059-41afaeaee5358feecb4* 4. **Gymsoft** It is a company provides its service to carry out the access control through a program associated with key option that allows to enter the gym, control of schedules and management of plans among others.

Fuente: https://siboavance.com.co/es/software/control-de-acceso-para-gimnasios

5. **Control de accesos en instalaciones deportivas**

Some companies, such as gyms and others with sports areas, are looking for ways to control access to these places in order to maintain security and vigilance. Access control of sports facilities is a highly efficient and safe system to resolve the issue of high turnover of people to sports areas or gyms, where there is not so much visual control and where such a system may be very necessary.

Fuente: https://softar-gym.com/control-accesos/

To finish in all the files found, similarity was found in the different projects. What makes our project different is that it will have a monthly statistical report of users entering the gym. In addition, it will have a qualification for each of the people who make use of this space. You will also have a barcode reader to identify each of the users entering, and the door will open automatically. Finally the user will be assigned a rating that is defined by the behavior he has inside the gym. If your conduct is good you will have free access at any time that is set in the opening hours. On the other hand, if your behavior is not so good, you will be restricted

from entering the gym some hours a day.

III. OBJECTIVES

A. General Objetives

- Provide an optimal, efficient and reliable electronic system for registering people entering a gym.

B. Specific Objetives

- Design an electronic system to facilitate the registration of people entering the gym in a database. - Implement the database on a web page that is visible, efficient for the administrator. - To validate the information found in the database with the data shown on the website.

IV. DEFINITION

In the internal area of the gym of the University of Ibagué possess a problem that do not have a reliable record of students who make use of this area. As engineers we want to find a viable and effective solution to this problem. We propose an alternative that is economical, understandable and manageable in all fields covered by the theme of gyms. This is why we want to implement a registration system, by means of a web page that allows the administrator to load a record of the people who enter the gym.

V. QUESTION

The University of Ibagué needs to carry out the counting and registration of people entering the gym of its facilities, how to provide reliable and secure data to the administrators of the University?
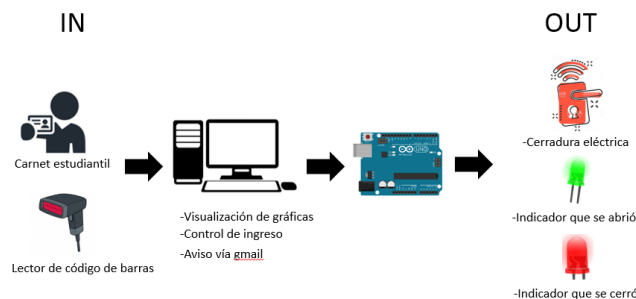
VI. RESULTS

Fig 1. Diagrama esquemático del funcionamiento del sistema con sus entradas y salidas.

Fig 2. Diseño interfaz

VII. CONCLUSIONS

- This project can be implemented in any gym where users and/or individuals need to keep track of their entry.

- In this project we can show how we apply the internet of things, since, from the data collected at the entrance to the gym, we can show them on a website, where users can see graphically the days and hours where the gym is most spent.

- Due to the approach of the project, it has a part that is accepted by the fitness industry since it facilitates the internal control of gyms. And it allows its managers to invest their time and resources in the development of other activities, which increase their monthly income.

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