Fastpel

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***Resumen*—This report presents the development of the Fastpel website (fast loan of equipment and laboratories) designed primarily to provide a solution to the problem that exists in the loan of equipment and laboratories at the university of ibague, for this it was held in It has specific objectives to develop in addition to a general objective that will be the realization of it.**

***Index Terms*—Fastpel, Flask, html, pandas.**

I. Introduction

There are currently a number of problems when applying for a loan from a equipment in the General Electronic Engineering laboratory or request a laboratory in overtime, which are located in the laboratory building of the University of Ibagué, because these loans work manually, that is, no There is a database or a secure registry. All this generates loss and deterioration in the equipment and laboratories or there is no knowledge and control of which student requested some corresponding equipment or laboratory; in addition to this, at the time of requesting equipment or a laboratory can become a bit tedious and delayed since manual entry (Write on paper or format) requires the registration of each equipment and complete information of the applicant student. Additionally, there are background of students who are not allowed these loans due to lack of training management of equipment and laboratories or others faculties, generating a bad use of them and ending their useful life.

In this regard, based on the problems that daily affect the community university, an initiative was raised to give a solution to these problems, thanks to all the technological tools that currently exist. In this case, interacts between user and devices for the design of a computer system, to the improvement of the equipment registration processes of our laboratory and the laboratories for overtime. To be more specific, this system has certain advantages; not only for the person in charge of the laboratory, but also for students, professors and the university in general. At the same time the use is reduced of the paper and avoiding the disorder and ignorance of the person who has the team in addition to implementing and generating a security of the equipment and users of the laboratory. cite 1

Finally, the proposal of this project consists in the implementation of a system smart which can be viewed on the internet (figure 1.) through a local network and a link established; which has 5 basic functions: 1. Loans of equipment, 2. Equipment returns, 3. Equipment request, 4. Laboratory loans in overtime and 5. Provide informative notices of laboratories through posts. The function number 1 consists mainly of a database of all Electronic Engineering students of the University of Ibagué assets and other base of data of the equipment registered in the laboratory; through a code reader of bars, both the requested equipment and the student who registered it are registered solicitous. Function 2 consists in making the return of the equipment provided by some student and record some observation. Function 3 consists of ordering a team that is provided by a student; requesting it by email. The function 4 consists of registering a student for the application of a loan of overtime lab Finally, function 5 consists of providing information on labs to students through posts. This way you get optimize the request time of the equipment or laboratory, solve the ignorance and also encourage the sense of belonging with the laboratory and its equipment without shorten their useful life as well as have high security and control in loans and requests.

II. Objetives

II-A. Analyze and interpret the problem to give a solution in the student system

Develop a digital platform for data management related to equipment loans in the laboratory of Electronics as well as laboratory loans in hours extras from the University of Ibagué.

II-B. Design the solution to the problem posed fulfilling specific objectives

- Develop a Python software that allows users to identify and laboratory equipment using barcodes in order to register loans, returns and equipment requests automatically. - Check in the software the number of students to request laboratory loans overtime and provide data on students to complete the necessary form to request the laboratories - Load and edit databases in CSV format with Python.

III. Developing

The software works with the help of a barcode reader, which implements in five software options; in the first option, try the loans of laboratory equipment which asks us to read the barcode of the student card; once entered, the software searches the database of active students present student information then ask us to enter the barcode of the equipment requested by the student, once entered, the software searches the laboratory equipment database and finally the software generates a new database with student and team registration requested in order for the head of the laboratory to keep track

of active loans what is in the laboratory at the moment; at the same time a history is generated with the loans made and their respective date; if the data entered is wrong the software informs you which data is wrong as well as the ability to not Loan a device if it has been previously borrowed and has not been returned.

The second option is responsible for the return of the requested equipment and works in a way similar to the previous one, the barcode of the equipment to be returned is scanned Then you write an observation of the return, then the software searches for the team in the database where the loans are active at the moment and what eliminates to end the loan, finally this is registered in a history, recording the date of return, also has the ability to report if a device is not currently provided by means of an informative notice.

The third option tries to request a borrowed device by email sent by the lab administrator because a username and password is required to the correct functioning of the software (this administrator information is manage the software when installing the software and enter it only once) and send it mail, the code of the equipment to be requested is written (if this code is unknown, you can see in a table that has the current loans in order to copy the code of the equipment to request), then the software searches the loan database active the person who has it, looks for the student's email, writes and sends the email to the student requesting the equipment.

The fourth option tries to facilitate the request for laboratories overtime, the student must register and enter the software, select a laboratory of three that can be requested, then you have to fill out a form with the necessary information, then the software informs you if your registration was successful and this information is stored in a database and shows the students registered in a table to know the available quota, but if the laboratory is already full, the student can register with another laboratory, if the quota of the respective laboratory is reached, the software Automatically send an email to the first person who registered with All information of registered students in order to have control of the process and fill out the form with the respective information obtained and continue with the steps to follow for laboratory request; These records must be made on schedule established (before 11 am), after this time, the records cannot be perform because the software closes this option and the database created is restarted each day in order to give students the opportunity to register again at next day.

The fifth option serves to inform students of notices or events of laboratories through posts generated by the administrator, manager or monitors, These posts can be edited or deleted in default.

To make use of these options, the user has to enter the software with his email and password which provided when registering, equipment loan options, equipment returns, equipment requests and informational posts only have access the administrator and monitors, the option of laboratory loans have access the administrator, monitors and students who have previously registered in the software. On the other hand, the software consists of an option that resets a user's password if it is forgotten, by sending an email which has a link to Reset your password.

Finally, the user has the option to modify the email and password (which are encrypted for greater security) as well as a Default photo assigned to users.

IV. Resultados

-The results that were obtained were the desired ones since the objectives initially proposed were met and a further improvement was achieved, on the other hand multiple knowledge about the Iot was acquired as well as the development of web pages.

V. Conclusiones

-The project will be implemented in the Electronic Engineering laboratory; with a high performance and functionality with the possibility of future updates such as This version is the 2.0 that brings new features, options, greater security, comfort and better software management.

-The page was designed with extensions in html, css and javajscrip, which leads to better performance and user management.

-An infinite number of projects can be done in multiple areas thanks to the development of the Iot.

Referencias

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VI. Annexes

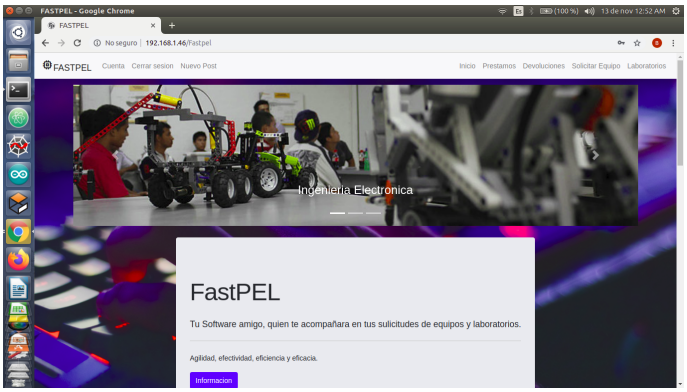

Figura 1. Fastpel software start Fastpel