

How technology can improve the registration/re-registration system of the SIM School Pass

Adryellen das Graças Santana

Keven da Silva Martineli

Lucas Oliveira Loura

The purpose of this college assignment was to apply the concepts of the Project-Based Learning Methodology, using any language and/or platform, to propose a solution to a real-world problem.

Our intention with this project is to show how we think that some problems we found in the SIM School Pass registration and re-registration system could be solved using web design and script programming.

This project has no official relationship with SIM, BusFácil, Suzantur or the Mauá City Hall.



What is SIM?

SIM stands for Sistema Integrado Mauá and is the name of the company responsible for the logistics behind public transport tickets in the city of Mauá, located in the metropolitan region of São Paulo.

All students are eligible to obtain SIM's School Pass for free, and those who live in Mauá have 100% discount on bus tickets, while those who live in other cities have a 50% discount.

Brainstorming

In the first step of PBL, we:

- Collected some ideas;
- Discussed each one &
- How we could develop them;
- Analyzed which one would be the best.

We had a lot of ideas about public transport, but we decided to focus on the SIM School Pass registration and re-registration system, because it is part of our routine, and we already have a lot of experience with it.

The Problems

In the second step of PBL, we listed the following problems:

1. The registration and re-registration forms are located on another website (the City Hall website) for no apparent reason
2. A notable number of certain documents are required to obtain the school pass and the ways to obtain them are not very clear

Driving Question

In the third step of PBL, we formulated the following as our driving question:

- How much more useful would it be for the community, as well as for the company itself, if the school pass registration and re-registration system were to be 100% online?

Our Intentions

- The SIM School Pass is a student's right, and we believe that simplifying this process in order to make it more practical will have a positive impact on the community
- We do not intend to replace the original, just suggest and illustrate ideas that can serve as inspiration for when the official developers choose to implement improvements to their system
- We believe that the best thing would be to integrate the entire process of making and renewing school passes on one single website, as we believe this would be more comfortable and practical for everyone

Theoretical Basis and Methodology

In the next stage of development, we had to research a possible theoretical basis and methodology for our project, which will be expanded on in the next slides.

- **Theoretical Basis:** 7 Ways Technology Can Simplify Document Management - Available on <https://www.filecloud.com/blog/2020/06/7-ways-technology-can-simplify-document-management/#.ZBs3zqRv9Pw>
- **Methodology:** Computer Technology in the Student Registration Process Essay - Available on <https://ivypanda.com/essays/computer-technology-in-the-student-registration-process/>

7 Ways Technology Can Simplify Document Management

Available on
FileCloud

Document Management

Manual handling of documents can be daunting especially as an organization expands. Not only is it time-consuming, but it also reduces the efficiency by which organizations function.

Luckily, constant evolution in technology has made it such that better data management systems are in place to deal with volumes of data gathered over time.

7 Benefits of Utilizing Technology

- Efficient and Convenient Retrieval
- Doubled-up Security
- Documents Transformation
- Optimizing Storage Facilities
- Improved Collaborative Efforts
- Version Control
- Cost-Effectiveness

Computer Technology In The Student Registration Process

Available on
IvyPanda

Plan of Action - Analysis

The plan of action was developed to improve the student registration process at a college. It involved the introduction of computer technology in the registration process and included an online application for admissions.

Results

- Online registration minimized the use of manual paperwork during the registration process as the shortlisted students were just required to provide proof of identification.
- The registration process became more efficient due to the reduction in the number of registration staff because they were only tasked with the transfer of the students' information to their respective departments. Therefore, the extra staff from the registration desk were reassigned to other tasks.

Results

- Eliminating unnecessary stages of registration and bureaucracy when registering new students was achieved since when a student applied online for admission, most of their information was obtained, and there was no requirement to provide similar papers during the actual physical registration.

Dimensional Analysis

The main strategy was dependent on providing computing facilities at the registration desk and the provision of **a website address that enables the student to access the application forms online.**

The use of computer technology mandated the registry staff to learn how to use computers effectively, and this improved their service delivery to new students.

Field Research: About Mauá's School Pass Registration & Re- Registration Process

Available on
[https://forms.gle/bBEC1QF
KCaE8t8VaA](https://forms.gle/bBEC1QFKCaE8t8VaA)

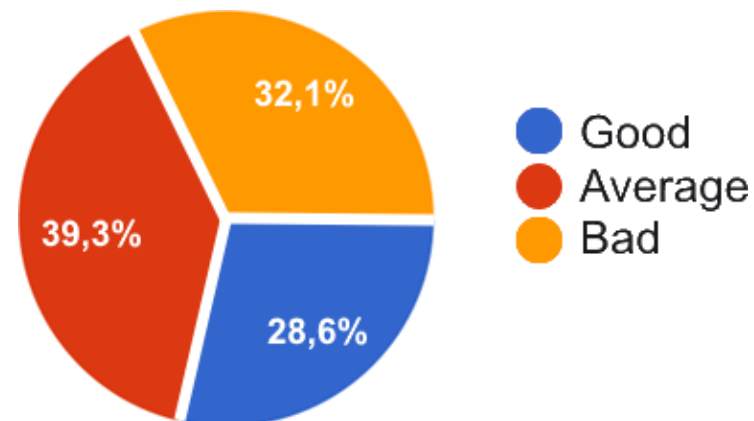
Field Research

From the 23rd to the 30th of March, a total of 28 people aged between 15 and 25 years old were invited to fill out a form about their experience with the registration and re-registration system of the SIM School Pass.

They were comprised of students who had recent experience with the system and were, for the most part, our friends and family.

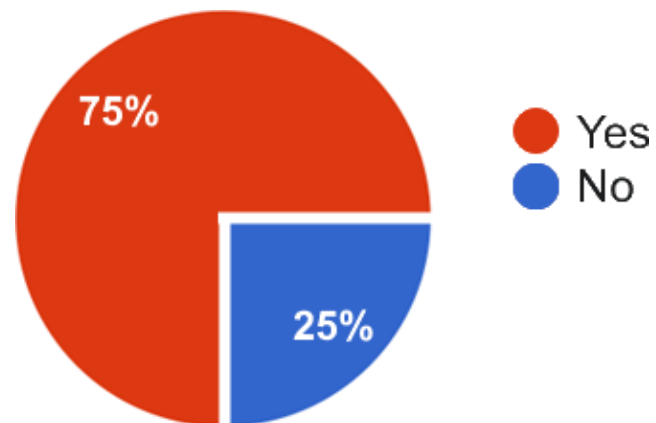
1st Question

How would you rate your experience of registration and/or re-registration with the SIM school pass?



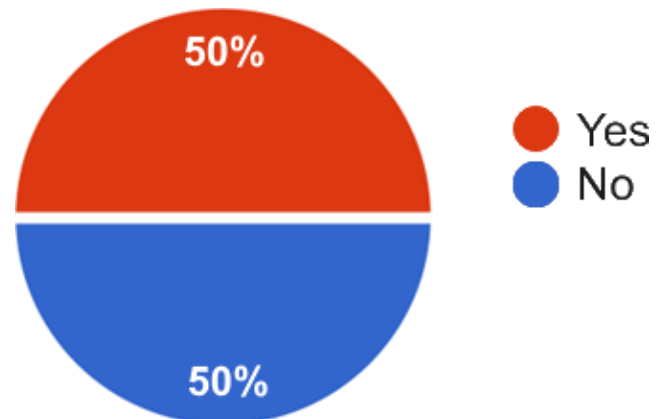
2nd Question

Would you consider this registration and re- registration process practical?



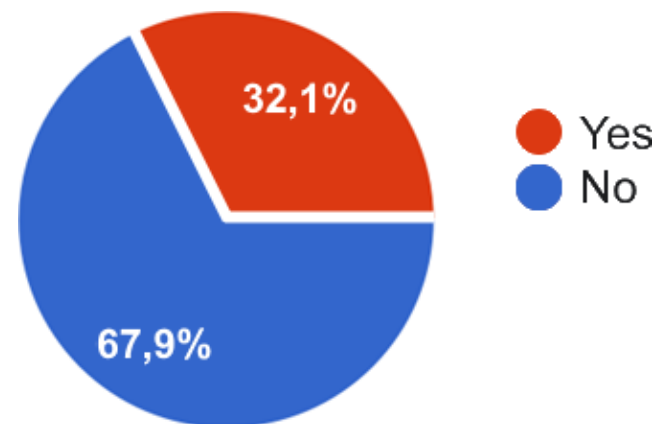
3rd Question

Would you say that the requirements for obtaining the pass as well as the necessary documents are clearly listed?



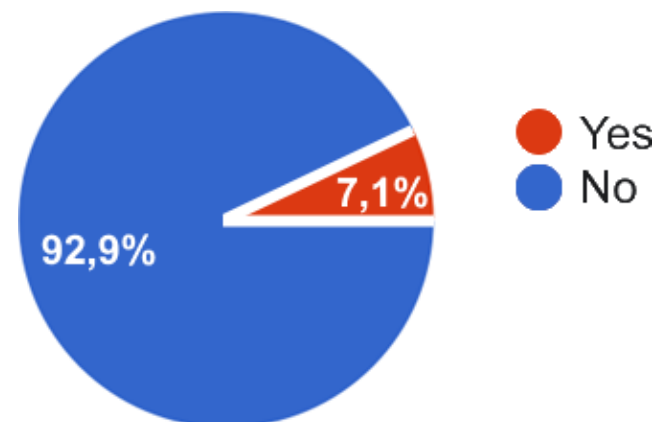
4th Question

The regulation of the school pass is on the BusFácil website while the form to be completed is on the Mauá City Hall website. When trying to register for the first time, did you find it confusing?



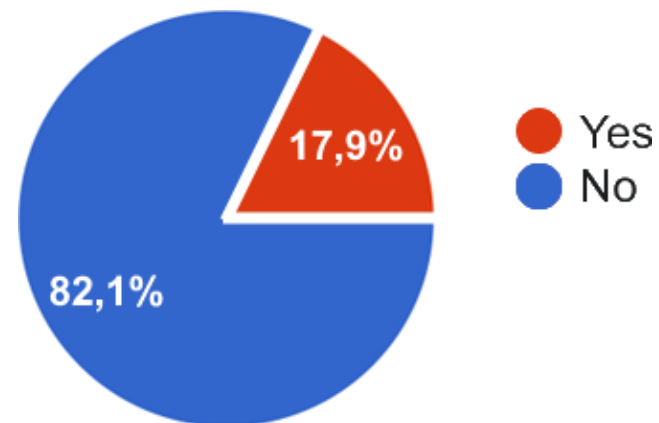
5th Question

Continuing with the previous question, would you find it more practical to gather all the relevant school pass information on a single page?



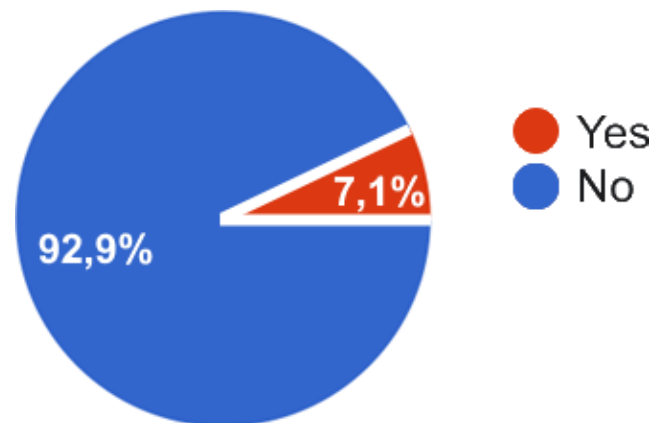
6th Question

If the registration and re-registration process were 100% online, would you have internet access as well as a compatible device to be able to do it?



7th Question

Would you particularly find it simpler and more practical if this registration and re-registration process were 100% online?



Evaluation

Available on
<https://drive.google.com/drive/folders/1G9a7jl22BSjCjNNybPN7hqJKBvZvXI80?usp=sharing>

Evaluation

During the first week of April 2023, we asked some our friends what did they thought about this project, we asked the following:

- What is your name?
- What is your course?
- What do you think of our proposal?
- How would you rate the proposal in a scale of 1 to 10?
- Do you think something can be improved?
- Do you have any ideas that you would like to add?

1º Interviewee

Name: Felipe Soares Rodrigues

Course: Information Security

“I’ve found it to be a very interesting and creative proposal, and I think it will be very effective in helping public transport in Mauá.

I rate the project as a 10, very interesting and creative, I think it could just be improved a few slides in terms of images, but it's very good.

And as a security student, I think it's important to be careful with sensitive data, such as ID, CPF, etc., as this is very delicate data and certainly cannot be leaked.”.

2° Interviewee

Name: Matheus Soares Rodrigues

Course: Information Security

“I found the idea of the SIM School Pass to be very interesting and innovative, and I also really liked the quality of the data presented.

If I could evaluate the proposed project, between 0 and 10, I would rate it as 10 because the idea is very noble and interesting, and because it would help the students of Mauá a lot. [...] I didn't think of anything that could be improved, I really liked the idea.

And one thing that I thought was important to add is the importance of adding security to the database, as it would work a lot with sensitive data such as the students' ID and CPF [...] because there is no room for a possible data leak”.

Thank You!