

HOPE IN LIFE: Website that will assist NGOs in raising material resources

HOPE IN LIFE: Site que auxiliará ONGs na captação de recursos materiais

HOPE IN LIFE: Sitio web que ayudará a las ONG a recaudar recursos materiales

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Abstract:

This project pursues the goal of building a website to help NGOs and donors in the disclosure and donation process, encouraging transparency on the part of NGOs in their search for greater reliability. In the development of this project, field research and an online survey to learn about the problems that donors and NGOs find, from the search for NGOs to the outreach process and donation. The website has the differential of focusing on material donations, seeking a friendlier and more reliable process, also encouraging feedback from NGOs for donors. The website was also designed to make the ease to navigate so that donors and NGOs can ask their questions and have the best visibility in collection and donation. To improve communication between them, the website contains chat in which they can always be in communication to ask doubts or even find out if the donation has helped if it has reachethe NGO among other information that the donor and the NGO wants to communicate.

Resumo:

Este projeto tem por objetivo construir um website para auxiliar ONG e doadores no processo de divulgação e doação e incentivar a transparência das ONG no intuito de obter uma maior confiabilidade. No desenvolvimento deste projeto, foi realizada uma pesquisa de campo e uma pesquisa *on-line* para conhecer os problemas que doadores e ONG encontram, desde a busca por ONG até o processo de divulgação e doação. O website possui o diferencial de focar nas doações materiais, buscando um processo mais amigável e confiável, além de incentivar um retorno das ONG para os doadores. O website foi pensado visando também a facilidade de navegação que doadores e ONG terão para tirar dúvidas e ter melhor visibilidade na arrecadação e na doação. Para melhorar a comunicação entre doador e recebedor, o website contém um chat no qual poderão se comunicar para tirar dúvidas ou, até mesmo, saber se a doação foi útil, se chegou até a ONG, entre outras informações que quiserem obter.

Resumen:

El objetivo de este proyecto es construir un sitio web para ayudar a ONG y donantes en el proceso de divulgación y donación y fomentar la transparencia por parte de las ONG para lograr una fiabilidad más grande. En el desarrollo de este proyecto se llevó a cabo una investigación de campo y una encuesta en línea para conocer las problemáticas que encuentran los donantes y las ONG, desde la búsqueda de ONG hasta el proceso de divulgación y donación. El sitio web tiene el diferencial de enfocarse en las donaciones materiales, buscando un proceso más amigable y confiable, además de fomentar la retroalimentación de las ONG para los donantes. El sitio web también fue diseñado para facilitar la navegación, de modo que donantes y ONG puedan hacer sus preguntas y tener mejor visibilidad en la recolección y la donación. Para mejorar la comunicación entre donantes y recibidores, el sitio web contiene un chat en el que siempre podrán estar en comunicación para sanar dudas o incluso averiguar si la donación ha sido útil, si ha llegado a la ONG, entre otras informaciones que quieran obtener.

1. INTRODUCTION

According to Gouveia (2007), fundraising is one of the main problems faced by Non-Governmental Organizations (NGOs), as well as the obstacles of not being well known, making it difficult for them to operate. Therefore, NGOs need to have more visibility so that donors feel safe in their donations.

For Kuzma, Silva, and Vellozo (2015), NGOs also need to use marketing and more specific management models to improve their performance. According to Elie Horn (2022), everyone has their priorities and ways of life, however, one must adapt one's wishes to the clear needs of the world.

The project aims to create a web system to help NGOs in the regions of Itaquera, in the east zone of the city of São Paulo in the publicity and capitation process of material resources.

The web platform developed in this project assists in communication between NGOs and donors, enabling an environment of transparency and interaction through chat, contributing to alleviating difficulties that may occur during the donation process, with emphasis on donations of material resources, which requires prior contact between the donor and the NGO so that problems do not occur.

2. THEORETICAL FOUNDATION

This topic will explain the technologies and knowledge implemented to realize the project, as well as the concept of each of them and their functions.

2.1. MAIN TECHNOLOGIES FOR DEVELOPMENT

To develop the project, programming languages were used to find the best way to build the web platform, and this topic will present the technologies used.

2.1.1.UML

According to Booch (2005), the Unified Modelling Language (UML) is a graphical language used for the development, classification, and documentation of complex software systems. When UML emerged, it became widely used because it made it possible to build a system from its structure. The main existing diagrams include a Use Case Diagram: This is normally useful in the requirements gathering and analysis phase, and its language is simple and easy to understand so that the user can see the general idea of the project. Class Diagram: This is the most important and widely used of the UML diagrams. It describes the classes, their attributes, and methods, as well as how they relate to each other. Sequence Diagram: Shows in time order how messages are being exchanged by objects within a process. Activity Diagram: Describes the steps that will be taken in a process, and can be shown as a complex method, a process, or a complete routine. According to Guedes (2009), it has become a standard for modeling, adopted internationally by the software engineering industry, and is also used to make system maintenance simpler.

2.1.2.LARAVEL

According to Douglas and Marabesi (2017), Laravel is a popular, robust, and easy-to-use framework for building web systems with the Model-View-Controller (MVC) pattern, used to help create web applications.

According to Gabardo (2017), a framework presents a set of functions or classes in a specific programming language to assist in the construction of software.

The MVC standard, according to Turini (2015), distributes PHP functions and routes into three parts, with the Model being responsible for accessing the database, the View for the visual part and the Controller responsible for the more logical part of web requests.

2.1.3.HTML

According to Flatschart (2011), HyperText Markup Language (HTML) is the basic component of the web. Known as a hypertext markup language, it defines the structure of the page.

According to Manzano (2010), HTML is written in the form of tags delimited by the <> and </> signs, which identify the function and content of each element of the language. The main HTML tags are Head: This tag contains information about the page and is usually followed by the title tag.

Title: This element defines the title of the page and displays it at the top of the browser, above the field in which you enter the URL of the page you want to visit. Link: A function in HTML that allows hyperlinks to be inserted into numerous elements within the code, such as images and videos. Body: This is the tag responsible for showing all the content inside the browser's main window. Form: This tag allows web users to interact with a program by providing data, which will be processed and used internally. Main: This tag is used to define the main content within the body (a tag that was mentioned and explained earlier). Div: This tag is used to group elements within a page, thus having the function of stylizing a page.

2.1.4.CSS

In the words of Silva (2012) CSS is the abbreviation for the English term Cascading Style Sheet. For Duckett (2016) CSS allows you to make web pages more pleasant, controlling the project with the language and creating rules that specify how the content of an element should be presented. According to Quierelli (2013), this language serves to stylize the content of the pages, as well as their background color, types of texts, organization of content and images. According to Jobstraibizer (2009), the development of a style sheet can be carried out using any text editor such as Notepad, simpler means, HTML editors, or Visual Studio Code, also a source code editor.

According to Oliveira (2017), it is necessary to identify the element of the text that you want to modify the style, and this identification is done by writing the name of the corresponding tag. Some of the tags used in CSS are Font-size: To define the font size, the values used are px (pixels) and in percentages. Font-weight: Sets the font weight. Font: The style, you can use normal, oblique or italic values. Line-Height: Defines the spacing between lines, as in font size, the values used can be px, cm, %. Text-align: Used to determine the type of alignment, the values are left, right, and center. Color: Used to define color, you can use Photoshop values, color names in English, or use the RGB system.

2.1.5.BOOTSTRAP

As Matos and Zobot (2020) point out, Bootstrap is a very popular framework for JavaScript, HTML, and CSS, used to develop responsive websites and web applications in line with the mobile-first philosophy. According to Silva (2015), it is defined as a powerful, elegant, and intuitive front-end framework, that enables faster and easier web development. Within the Bootstrap website, there are five constant sections, which are: Introduction: responsible for presenting the basics or the initial function for creating using the framework. CSS: Section in charge of presenting the common CSS rules, such as definitions of values for typography in general and CSS reset. The declarations for various HTML markup elements are also detailed. Components: This section looks at the creation of interface components. Plugins: This section looks at the integration of JavaScript plugins with Bootstrap. Customization: An online tool for customizing downloads according to the specific needs of a project.

According to Matos and Zobot (2020), it is a collection of open-source tools for developing websites and applications, including HTML and CSS templates, a responsive grid system, pre-defined components, and plug-ins in jQuery.

2.1.6.JAVASCRIPT

According to Silva (2010), JavaScript was created to provide interactivity with the web page, that is, bringing effects to it, since languages such as CSS and HTML do not have this possibility. According to Flanagan (2013), to comment in natural language to the source code, simply add two slashes, also, within this programming language there are variables and they are declared with the keyword "var". For Lepsen (2018), the definition of the conditions used in conditional structures requires the use of relational operators.

2.1.7.DATABASE

According to Date (2004), a database system is a computer system for maintaining records, being the equivalent of a set of computerized data files. Users of this system can perform operations such as: Adding new files to the database, inserting data into an existing file, searching for file data, and changing.

According to Alves (2021), a relational database is characterized by the fact that it organizes data in the form of lines and tables, and relates information on the same subject in an organized way. Reaffirming the author above, Date (2004) says that a relational data model is one in which data is represented by rows in tables, and operators are provided to operate on table rows. According to Leite (2008), one way of describing how data is stored in the database is the so-called Entity-Relationship Model – MER, which represents the data grouped in tables, and how they relate to each other.

According to Date (2004), the term entities is used to indicate any distinguishable object that must be represented in the database, while relationships link these entities, but can also be considered an entity.

Confirming the previous paragraph, Leite (2008) says that an entity is defined as something, abstract or real, of interest for the analysis of the system and that can store data about it. Entities can be Strong entities, When they exist on their own, not depending on another to store data. Weak entities, When they do not exist on their own, depend on another to exist. Associative entities, When it depends on at least two other entities to exist. Date (2004) says that the term relational is essentially just a mathematical term to designate a table and that in informal circles, table and relationship can be synonymous.

According to Leite (2008), the relational expression comes from the fact that entities relate to each other through their key attributes, which are fields with characteristics that make them unique to the entities. These key attributes are the primary key, which leaves the record in the table defined as unique and cannot contain null values or duplicate values, and Foreign key, which are fields in the table through which it communicates with others in the database.

According to Machado (2020), relationships are the representation of associations between entities in the real world, being the logical connection between two or more entities.

According to Leite (2008), the most important thing in data modeling is to make the entities relate so that the extraction of information is fast and reliable. There are three types of relationships: Unary: when a table relates to itself, Binary: when two entities are associated. Ternary: when three entities are related.

According to Machado (2020), cardinality describes the restrictions in mapping associations between entities in a relationship, the occurrence of one entity associated with another or several occurrences of another entity.

Leite (2008) says that regarding the number of occurrences of an entity that can occur in other entities, three can be considered. Cardinality 1:1 (One-to-One): Occurs when an entity A occurs only once in

entity B. Cardinality 1:N (One-to-many): Occurs when an entity A can occur many times in entity B. Cardinality N :N (many-to-many): When an entity A can appear many times in entity B, and B can appear many times in entity A.

2.1.8.PHP

Pablo Dall'Oglio (2007) says that PHP (HyperText Pre Processor) is a language made up of a set of scripts aimed at creating dynamic pages, in addition to being object-oriented and compatible with databases. According to Converse and Park (2003), PHP brings understanding and demonstration to the user, as the pages are presented, bringing web pages to the database quickly and easily.

According to Dall'Oglio (2007), PHP's control structures allow it to be responsible for script flows, allowing us to use different and appropriate forms in the language. The structures are: IF, is a control structure, which, if the condition given by the expression is accepted, will be executed. If it is not accepted, it will be ignored, ELSE: is used to create a new block of commands delimited by "{}". The ELSE structure can be read as the opposite case, used when IF is not accepted, WHILE: it is called a repetition loop, that is, if the condition is true it will execute repeatedly. WHILE can be interpreted as WHILE (expression) and DO {commands} and FOR: it is called a repetition loop, but it is based on a counter, that is, the block of commands.

2.1.9.GIT

According to Bell and Berr (2014), Git is a distributed version control system, which controls the actions performed on a file over time, where all members of a project will have a copy of the version history of the work. According to Aquiles and Ferreira (2014), Git was created by Linus Torvalds, the same creator of Linux. This technology is used in several companies around the world, including in Brazil. The advantages of using it are the ability to undo changes, a history of all changes, documentation of reasons for changes, confidence for work changes, and multiple lines of project history.

2.1.10. GITHUB

According to Bell and Berr (2014), GitHub is a website where you can upload a copy of your Git project, where it will be distributed and you can easily collaborate with other people in your project. Its advantages when using it are: Documenting requirements, collaborating on project storylines that do not need to be related to the main line, and reviewing work in development.

2.2. PROTOTYPING

This chapter will introduce screen prototyping using the technologies mentioned above, such as HTML, Bootstrap, CSS, jQuery, and JavaScript.

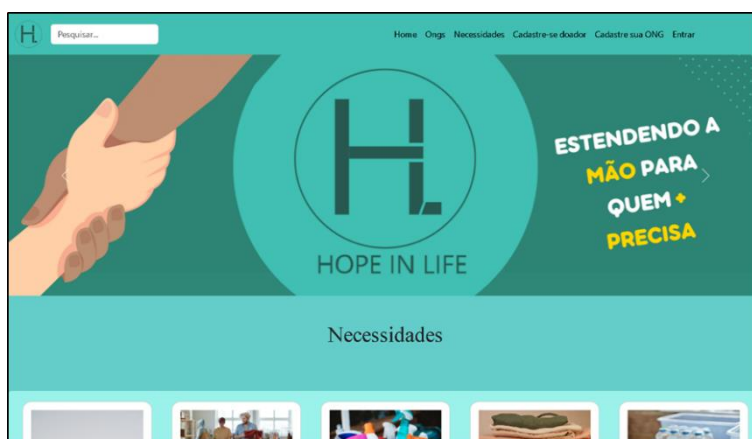


Figura 1 – Homepage
Source: Original Author, 2023

Figure 1 shows the homepage screen, which is the initial view that donors and NGOs will see. It contains a scrolling list of registered NGOs and their needs, as well as a navbar that provides the opportunity to view the list of needs screens, the registered NGOs, as well as, if there is first contact with the Hope In Life platform, both the donor and the organization can register by entering the required data. Finally, and as part of the project's proposal for broad communication and transparency between the NGO and the donor, a chat room.

The screenshot shows a web interface with a teal header. The header contains a search bar on the left and navigation links on the right: Home, Ongs, Necessidades, Cadastre-se doador, Cadastre sua ONG, and Entrar. The main content area has a central white box with a teal border. At the top of this box is a button labeled 'Cadastre-se'. Below it, the title 'Dados Pessoais' is followed by several input fields: 'Nome:', 'Data de nascimento:', 'CPF:', 'Endereço:', 'Email de contato:', and 'Telefone:'. At the bottom of the form is a button labeled 'PRÓXIMO'.

Figura 2 - Registration page
Source: Original Author, 2023.

Figure 2 shows the registration screen, where the donor must provide, for example, their name and surname, date of birth, CPF, address, email and telephone number. This is a two-stage form, which means that after this stage, the donor must provide an email address to log in and a password to access the platform.

The screenshot shows a web interface similar to the previous one. The header and navigation links are the same. The main content area has a central white box with a teal border. At the top of this box is a button labeled 'Cadastre-se'. Below it, the title 'Dados da ONG' is followed by several input fields: 'Nome da ONG:', 'Data de fundação:', 'Email de contato:', 'CNPJ:', 'Escolha uma categoria' (with a dropdown arrow), and 'História:'. The 'História:' field is a larger text area.

Figura 3 - Register an NGO
Source: Original Author, 2023.

Figure 3 shows a registration form for the Non-Governmental Organization in three stages, the first of which is a sample, receiving data such as the name of the NGO, the date it was founded, the email address and contact telephone number, the CNPJ, the address, the organization's activities and its history. The second stage requires the details of the organization's legal representative and finally, in the last stage, an email and password to log in to the web platform.

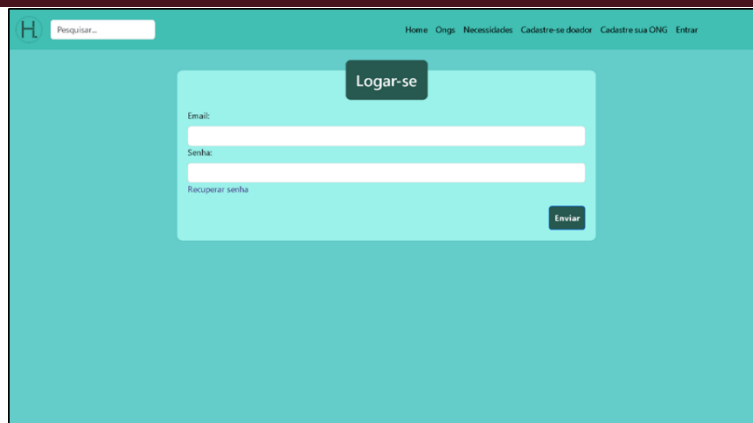


Figura 4 - login screen

Source: Original Author, 2023.

Figure 4 shows the login screen, in which the NGO and the donor must enter their registered email address and password to access the Hope In Life website. In this form, at the bottom left, you can see the opportunity to recover your password if you forget it or lose it.

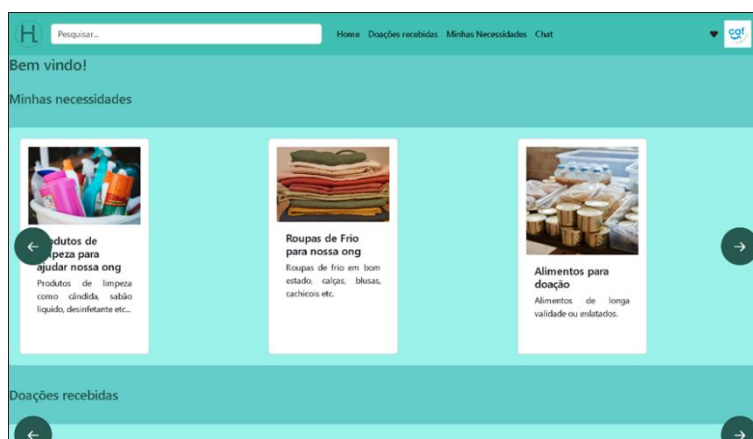


Figura 5 - Homepage Ong

Source: Original Author, 2023.

Figure 5 shows the home screen for the NGO, when it is logged in. This screen shows a carousel system listing the needs it has registered, as well as the donations it has received, including material and monetary donations.



Figura 6 - Donations made

Source: Original Author, 2023.

Figure 6 shows the screen for listing the donations made to the donor. This screen uses a table listing, which identifies the donation code, the name of the organization, the classification of the need, its description and the date of the donation. The same screen contains the buttons for cancelling the donation and viewing it, as well as a search bar.



Figura 7 - List Needs

Source: Original Author, 2023.

Figure 7 shows the screen that lists the NGO's needs for the donor, such as the most recent requests and those that are classified as monetary needs, that is, money targets, and those that are classified as material, a method that makes the platform unique and differentiated when offering the service. The combination of material donations depends on the organization's interaction with the donor via our created chat.



Figura 8 - Registered Needs

Source: Original Author, 2023

Figure 8 shows the prototype of the screen in which the NGO lists its own needs in table form, containing the name of the need, the code, its target, the category, the description of the need, the date of registration and the status of the need, either activated or deactivated. On the same screen it is possible for the NGO to search for its needs quickly and easily, as well as having the buttons to deactivate, edit and register a donation.

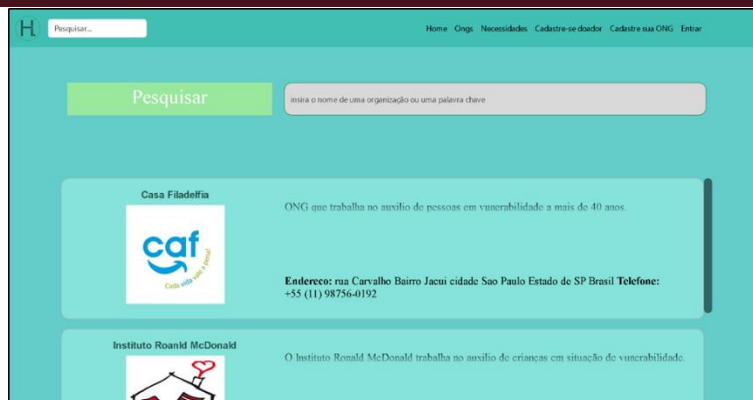
**Figura 9 - Listing NGOs****Source: Original Author, 2023.**

Figure 9 shows the prototype screen, which lists the organizations registered on the platform. On this screen, there is a scrolling list of NGOs, containing their logo, name, address, contact telephone number and a brief description of the organization, such as its activities and time. A search bar was developed for a quick search once the name of a particular organization had been defined.

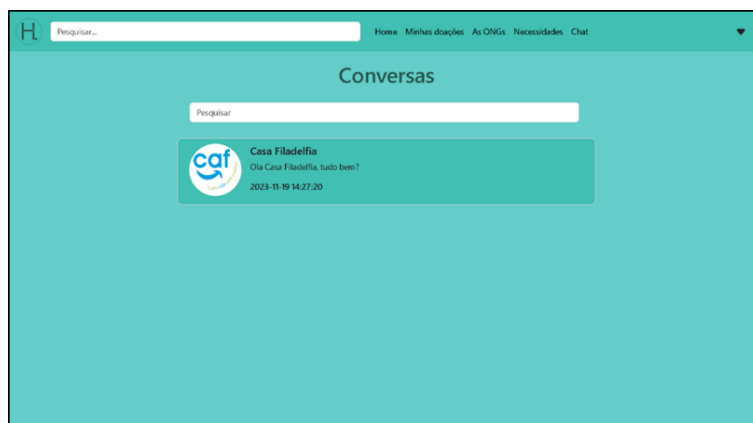
**Figura 10 - List Conversations****Source: Original Author, 2023.**

Figure 10 shows a prototype of the screen on which conversations between NGOs and donors are listed, and which can also be searched for easily and conveniently. In the case of the image, this is a donor's screen, where he is in conversation with an organization.

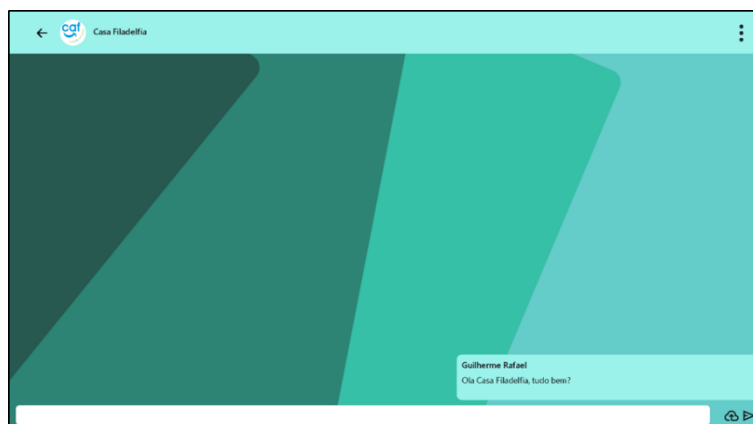
**Figura 11 - Message screen****Source: Original Author, 2023.**

Figure 11 shows the message screen, after having clicked on the organization listed in figure 10. The figure shows the usual structure of a chat, space for typing a message and uploading files. This figure shows the prototyping of the project idea, which sets it apart from other projects that involve helping to raise funds, in that it was decided to innovate the raising of material resources. The chat idea was chosen so that NGOs can be transparent with donors and so that donors are aware of how their donation is being used and of all the organization's work.

3. MATERIALS AND METHODS

For a better experience and completion of the project discussed in this article, exploratory research was conducted with Non-Governmental Organizations (NGOs), in which the creation of a website was approached, aiming to make a large contribution to NGOs facing their main difficulties. Furthermore, a bibliographic survey was carried out to obtain the best information about the problems of NGOs and a broad vision was obtained on how the platform could help them. Also, a questionnaire was created aimed at comprehensively expanding questions regarding donors to find out from a certain point what makes them more confident in donating and how they would assure them that their donation really contributes to philanthropic advancement.

It is worth highlighting the technologies implemented in the development of the project. Before prototyping the website, each screen was designed using the Figma tool, benefiting the planning, visual idealization, and experience of the target audience. The site was developed with the Laravel framework, whose language is PHP, to obtain better performance, security, and control. The Bootstrap framework was also used for better efficiency in styling and experience with the intended audience, as well as CSS to style small details of the HTML structure, used for markup. The jQuery library was used to simplify functions and coding, as well as JavaScript for small details. MySQL was used to store the data, whose language is SQL.

4. RESULTS AND DISCUSSION

Currently, the media and social networks established on the internet are fundamental for the dissemination of any group or service. According to Kuzma, Silva, and Velozo (2015), NGOs also need the use of marketing, as a more specific management model, to promote their cause and goals. As they are not entirely compatible with common marketing methods and are part of social media, NGOs would benefit from the creation of a web platform aimed at assisting them in their dissemination and raising resources process.

This project can observe the development of a website for donating both material and monetary resources to NGOs, using among its main technologies, the PHP language and the Laravel framework. The use of a web platform proposes increasing the visibility of NGOs and their needs, encouraging institutions to show their results and objectives, increasing transparency for donors, and providing more trust between both.

This website promotes better interaction between donors and NGOs, helping in the process of raising material resources, which often require clear and prior communication before the donation takes place.

5. CONCLUSION

In this work, it is possible to observe the development of a website to make monetary and material donations to Non-Governmental Organizations (NGOs) and to improve their communication and transparency.

A bibliographical survey was carried out to find the main problems faced by NGOs and the greatest difficulties in the donation process. An interview was conducted with an NGO to discuss how it raises

funds and the main difficulties it faces. A questionnaire was also used to find out the main problems encountered during the donation process.

The aforementioned website was built using UML diagrams and the database representations: DER and MER. It was developed in the PHP programming language and using the Laravel framework, as well as other technologies such as JavaScript, SQL, HTML, and CSS.

This work provides a possible solution to NGOs' communication and transparency problems and also seeks to make the donation process more reliable and secure, through a donation website that helps third sector organizations to publicize their information and needs.

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