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WEB DONATION AND SWAP SYSTEM "EASY CHANGE" BASED ON FREE TOOLS

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Web donation and swap system "EASY CHANGE" based on free tools

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Summary. The purpose of this research was to carry out an idea to allow people awareness as to consumerism, through a web solution with the main purpose of exchanging objects and make donations, for this a web application based on free tools such as the framework Symfony, also support manager PostgreSQL database which was used for storing information portal system is constructed and all this aimed to methodology RUP, so to have a web solution that facilitates users to find information about objects that wish to exchange and likewise to generate a catalog with all the information related to the almshouses in order to capture the interest of people to make donations.

Nowadays people do not raise awareness damage that would cause the planet to become consumerist, especially when the family is great habit to keep objects that at one time were very useful but now they have been underutilized in places where storing deteriorate and they stay there for long without providing any benefit.

Keywords

Exchange, Swap, Donations, Web system, Symfony, PostgreSQL.

Abstract. *The purpose of this research was to conduct an idea that can raise awareness about consumerism, through a web solution with the main objective of trade items and donate to this a web application based on free tools like built what is the Symfony framework also support the PostgreSQL database transmission system that was used to store information portal and all of this track with the methodology of the UK, so having a web solution help users find information related to the objects they want exchange and likewise to generate a catalog with all the information related to the almshouses in order to capture the interest of people to make donations. Nowadays people do not raise the damage caused to the planet to become consumer, especially when the family is large tend to store objects that were once useful, but have now been underutilized storage in places where deteriorate awareness and stay there for long without providing any benefit.*

Keywords

Exchange, Swap, Donate, web system, Symfony, PostgreSQL.

1. Introduction

At the beginning of this century commercial business management began a new twist, you begin to become aware that the client no longer choose a product (tangible or intangible) only by the cost-benefit equation and begins analyzed how it influences their decision depending on your "Shopping Experience". At present any offer should not only provide functional benefits but also emotional benefits.

Traditional marketing, focused on the functional features and benefits of the product, you need to become more involved in the situation of consumption and the socio-cultural context.

Nowadays trades made sales strategies which make us see the emotional benefits that relate to the product offering making us think that for us is very useful that product after purchase but we realize that It doesn't pay any benefits, and it remains underutilized.

The number of households with more expenses than income is high, the National Institute of Statistics and Census (INEC) presented the study, prepared for a year, which had the 39617 sample households (153 444 people) in nine cities. 41.1% of households, according to the report, spending more than it receives.

2.   Requirements

2.1   Key Features of software

The web system "Easy Change" is fully implemented on the use of free tools that is open source. The approach has been implemented is about a social nature as it helps in two fundamental ways.

As a first point, the website offers its users the realization of barter objects, favors and information in order to minimize power consumption rates for this has created the slogan "to spend money if you can change," equal forms another goal is to minimize waste accumulation rates that everyday human beings generate statistics indicate that the technological garbage will grow by 33% in 2017.
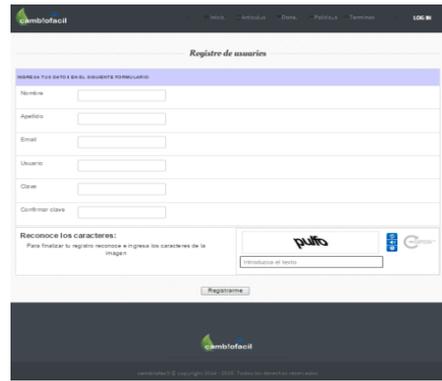

Figure 1. Accumulation of technological waste
Source: Personal Adaptation

Secondly by attracting donations to the homes of registered charities it is to build a database with all information related to the charity homes across the country as equally their basic needs this strategy will provide users who are interested and they wish to make a donation and thereby contribute to the welfare of the people who need it most.

Regarding the functionality of creating ads for exchanges of objects, favors and information has created a FIFO stack where the first to be created is the latest to show that is using the paging module barter shows 7 items or listings per page, with this ensures that the user visiting the website looking for objects to barter will deliver fresh and updated information.
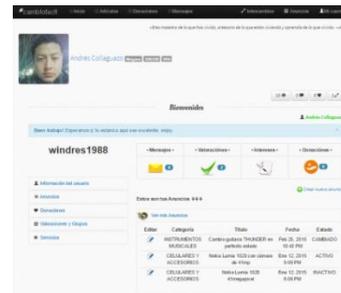
The register of users is done through a simple registration sheet containing full name, email, username and password should be noted that the email and the user is unique for each registered member, at the end of this form an email is sent for activation of the account registered this process is performed to identify whether the information entered is real..

Figure 2. User Registration
Source: Personal Adaptation

There are categories which ads are released, these categories will serve as a reference for users when filtering information related to their interests as well as the information portal will provide more orderly.

For the proper administration of announcements for barter it was implemented a form called a profile that shows all the detailed information of the registered user as profile picture, names, user or nickname, etc. Particulars of the ads and the possible changes that can be made such as editing the title, category, photographs, etc. Likewise it may remove the ad or change its state.

Figure 3. User Profile
Source: Personal Adaptation

It is noted that announcements handle three states (active, barter or changed, standby) this process ensures that the articles are published are still available for barter, barter state or changed displays a red flag with visible letters word "CHANGED" With this information the people who were interested know that the item is no longer available for barter, the idle state of the battery eliminates ads and article for barter is not displayed.
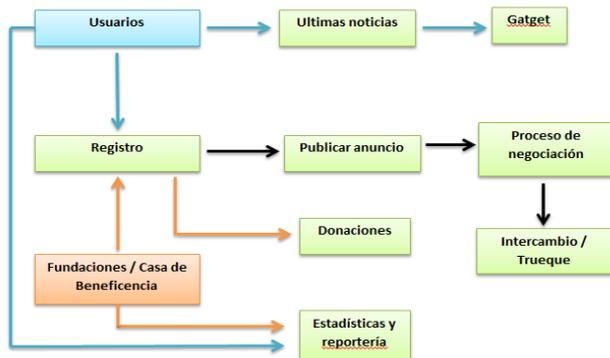

Figure 4. Flag state barter
Source: Personal Adapted

3. Design

3.1 Description of the functional architecture system

The resulting product meets the goals set in the present investigation, which consists of ten modules distributed as follows:

Figure 5. Functional architecture of the web system Easy Swap
Source: Personal Adaptation

In the functional system diagram two functional actors are showed these are individual users and foundations or charity homes then briefly describes each module.

REGISTER.- The user registration process must be performed only once, on this form is where all required information about the user (name, last name, email, username and password) is removed, this process is required to publish an ad.

LATEST NEWS.- this module is directly related to the Gatget which can be downloaded from the index portal for free this application may be installable on Windows platforms from XP version, the ads will be shown here in real time on your desktop computer user.

POST AD.- In the process of ad user must be properly authenticated and then complete a simple form that contains (category 3 photos of the article, title, fitness, comments and what the user want to receive in return).

TRADING PROCESS.- In this process messaging where users can interact negotiation to reach agreement was implemented, it should be noted that the maximum number of characters is 200 for each message sent.

DONATIONS.- This section has implemented all the management and administration of donations registered to the Charity House, from the registration of the charity house to the creation of a record of donations generated by each donation users of N items.

STATISTICS AND REPORTING.- This module is delivered to users detailed reports about the exchanges, donations, visits ad also comments that have been made to the announcements published, these reports are presented through statistical charts which can be exported to PDF, printed or saved as an image format.

Figure 6. Statistics and Reporting
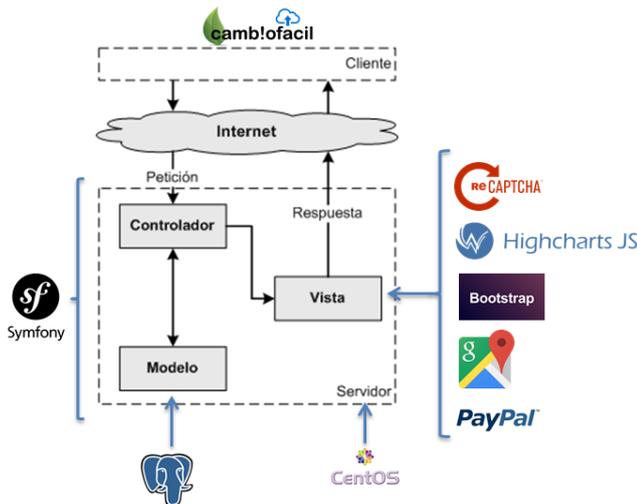**Source:** Personal Adaptation

3.2 Tools and Methodology

3.2.1 Tools

To develop the project It made use of free software tools that allowed deploy web application, including the most important is the Symfony Framework is based on the MVC design pattern (Model, View and Controller) programming language is PHP.

The gestures System PostgreSQL database is an open source project and it is in the ranking of most relational databases used in the world one of its main features is the MVCC system (concurrent Access multiversion) that allows that while a process writes in a table, others from accessing the same table without locks. Each user gets a consistent view of the last thing to it did commit.

Several technologies that contribute significantly to the functioning and performance of the website used to implement the view and these are:

- Google ReCaptcha
- Google Maps
- Highcharts JS
- Bootstrap
- Paypal

Figure 7. Tools used in the MVC model
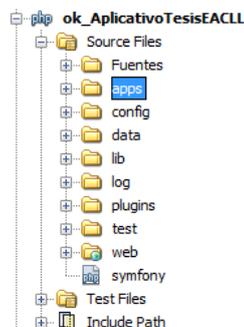**Source:** Personal Adaptation

3.2.2 Methodology

To carry out the exchange and donations portal "easy change" the RUP methodology which has been used 4 used steps comprising:

- Analysis
- Design
- Development
- Implementation

The use of this methodology allowed establishing a continuous process of testing where strategies, objectives, activities and devices (documentation) generated at each stage of development.
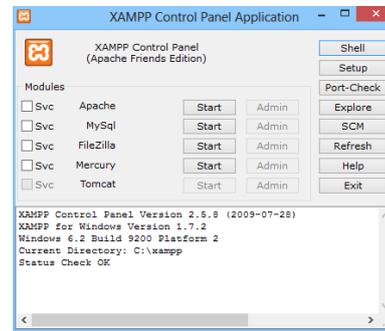
4. implementation

Code generation was made using the IDE (Integrated Development Environment) NetBeans in its version 6.8, provides ease of integration with Symfony PHP library by adding all the functionality as Run Command and Clear Cache. NetBeans offers a shaft to manage the project and all modules within the frontend application.

Figure 8. Shaft project management
Source: Personal Adaptation

Once the development stage is proceeded with performance tests in order to be able to fix any bugs that occur before publishing the final solution. To carry out this process XAMPP server application that lets you run the web solution was used locally.

Figure 9. Application Server
Source: Personal Adaptation

Regarding the implementation of the database, we have worked to achieve a structure of relational database consists of 36 tables, using trigers and procedures stores for specific processes such as barter and donations, thus this allows the management information generated by users when transacting in the frontend, this implementation has made in the PostgreSQL DBMS.

In the implementation of the web portal "easy change" colors related to the sustainability of the planet from the range of green were used also the graphical user interface is very intuitive and easy to use, the user can interact with the portal through use the keyboard and mouse on your computer.
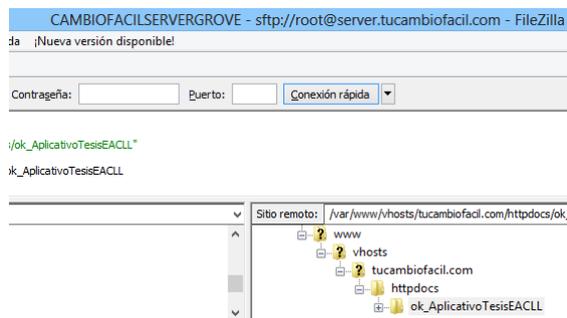
Being a web application that require higher performance by the server, and that access will be unlimited from the workstations of end users, for this has been considered an attractive design CSS but lightweight

Performance tests carried out consisted of walking navigation flow of the actors involved in the portal that are registered and the charity homes, each has a different navigation authorities as they perform separate processes so that the first run that took place was the creation of a new user from registration to the negotiation process by sending and receiving messages exchange subsequently Article or object, it is noted that revised parallel that information is properly recorded in the database as well as the store procedures and triggers implemented in PostgreSQL running normally.

The collaboration of end users who were not involved in the development process of the web solution is requested to complete the testing process, this is what I realize in order to have an opinion about the performance of the portal (charging rate) as well as the GUI (Graphical User Interface) implemented, and the fluidity of navigation has been given to each process (user registration, Creating a new ad, Shipping - receiving messages, Barter, Creation House Charities, grants, etc.)

After completed the tests performed by local developer and end users it proceeded to publish anywhere in the global network solution in a managed VPS server under CentOS 6.5 Linux distribution was necessary hiring the IP 38.89.161.199 published in www.tucambiofacil.com domain that is currently in production.
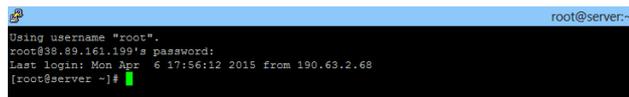
For VPS server administration File Zila used with SFTP and a secure connection port (22), the project was published in the directory /var/www/vhosts/tucambiofacil.com/httpdocs also it is configure the application development environment going dev to prod this means that the solution is already in production and available to all users in the cloud.

Figure 10. Connecting FileZilla
Source: Personal Adaptation

Regarding the DBMS PostgreSQL 9.3.6 version on the server it was installed to accommodate a backup of the database to the application implemented.

For access to the administration of the database SSH connection to the server with root (root@38.89.161.199) it should be noted that the tool used for this process is used Putty.
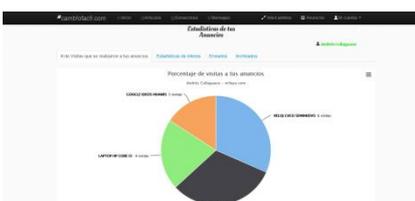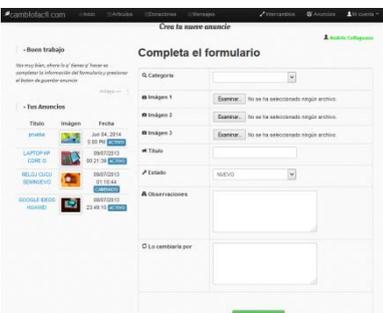

Figure 11. Connecting SSH with Putty
Source: Personal Adaptation

After completed all these settings terminates the startup of web portal "Easy Change" to start generating traffic and interest of users as first strategy was thought in social networks today are a very strong channel advertising is why the following accounts created on social networks:

- Facebook/tucambiofacil
- Twitter@tucambiofacil
- Google/tucambiofacil

Module	Functional Window
Access and Authentication	
Screen (index)	
Account Management	
Published Ads	
Categories Ads	
Ad Management	

Creating Charities	
Administration Interests	
Users rating	
Ad Statistics	
Creating a new ad	

Table 1 Some displays system
Source: Personal Adaptation

Users are all those directly involved in the use of the Web Portal easy change. Below there is a list of users:

Name	Description	Responsibilities
System administrator	Manager parameterization, updating and maintenance of application	Effectively manage Web Portal (manage user access, easy maintenance to Web Portal address new requirements).
Registered User	Registered users on the system	They are registered users who exchange by the usability of the portal
Charity homes	Charity homes registered in the system	Register addresses, phone, names of legal representatives, trade name, among others, priority needs, so that they are aware of potential donors
Public or Private Enterprises (P / P)	Companies registered in the portal	Donations to meet the needs of charity homes

Table 2 Summary of Users
Source: Personal Adaptation

Figure 12. Logo Cambio Fácil
Source: Personal Adaptation

5. Conclusions

The product of this project applicative degree, this being a web application all users can simply use the website with an internet connection and a browser, thereby facilitating use of the system on computers don´t require high characteristics.

The use of Symfony development framework has proven to be a very advantageous tool because it minimizes development time by separating the business logic, the database and the layout of the application based on the MVC design pattern which gives greater understanding to when programming the solution.

Charities nationwide donations can manage better use of the module Grants and registered users can exchange items, favors and information easily and quickly.

Using the command window (run command) NetBeans IDE helps better manage the execution of commands for creating modules, schemas, forms, as well as the functionality of the option clear cache help reduce setup time applicative.

Bookseller integrating Bootstrap CSS Twiter Symfony PHP is simple to configure and can take advantage of facilities that give us twiter bootstrap components regarding the integration of ajax, java script, css in the portal view.

Symfony has configured the application that is being developed and provide great functionality by allowing the programmer to use these features without writing a single line of code libraries extras.

There is extensive documentation and manuals, tutorials, publications, blogs, videos in Spanish language from tools used for the development of this project.

The catalog of all charities in the country with Its corporate name and its needs, allows users who doesn´t wish to exchange their goods and / or articles, donate and contribute to the welfare of those most in need.

Testing the operation of the portal was a central process in the project since it it was known the portal and fix bugs before putting the final solution into production.

The startup of a website is a very interesting process because it involves several aspects of academic training as is the development of web applications, database deployment, network management and servers.

When choosing the domain tucambiofacil.com was necessary to verify the availability in the cloud to do the "Don Dominio" tool which displays a list of the alternatives available and the already used.

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