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TEMA:

"DISEÑO E IMPLEMENTACIÓN DE UN SISTEMA WEB DE INVENTARIOS Y FACTURACIÓN PARA EL CONTROL DE PRODUCTOS TERMINADOS UTILIZANDO SOFTWARE LIBRE PARA LOS ALMACENES "PICHAVÍ" PERTENECIENTES A LA UNIDAD EDUCATIVA COTACACHI"

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DESIGN AND IMPLEMENTATION OF A WEB OF INVENTORIES AND BILLING SYSTEM FOR CONTROL OF FINISHED PRODUCTS FOR USING FREE SOFTWARE STORES"PICHAVI"BELONGING TO THE EDUCATIONAL UNIT COTACACHI.

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Summary: *This project is based on the "Design and implementation of a Web Inventory and Billing System for control of finished products using free software for stores" Pichaví "belonging to the Cotacachi Educational Unit". Chapter I gives an introduction of the background of the project, an overview of the Education Unit Cotacachi, the proposed objectives, the rationale and scope of the project. Chapter II details the basics of inventory control systems, the valuation method used by the UEC, the architecture of Web applications used in the system, and tools used in its development. Likewise Xampp server applications, MySQL database is explained. Chapter III teaches web development inventory and billing system, including documentation and RUP methodology used for its development, performance testing, end user training, installation and use of the system. Chapter IV describes the system installation, testing, training personnel who will manage the system, and data entry. This chapter V contains impact analysis, conclusions and recommendations for future similar projects, as well as the criterion of the author of this work. A glossary of terms, possible thesis topics and all bibliographical sources used in the work of grade list.*

Keywords

UEC, SISWINFAC, RUP, MySQL and PHP.

1. Introduction

The UEC is located in the city of Santa Ana of Cotacachi, Proaño Filemón Street s/n, sector San Teodoro, provincia de Imbabura, Ecuador.

The UEC has "PICHAVÍ" shoe manufacturing factory, thus helping the growth, development and performance of the educational unit.

The inventory of goods for footwear and leather goods from stores "Pichaví" handled inefficiently since having the inventory control only in daily Excel workbooks there is no stock control, there is no report of rotation of goods, thus causing loss of profits to the company due to the vulnerability of data, reports delay and loss of information causing a lack of coordination between production and sales.

2. Objectives

- **General objective**

Develop a computer system using software tools free to control inventory and invoicing of finished products of footwear and leather goods of the UEC of stores "Pichaví".

- **Specific objectives**
  - Analyze and diagnose the procedure used by the company for the inventory of finished products of footwear and leather goods.
  - Use the RUP methodology for the correct development of the computer system.
  - Design the interface of the system so that it is easy and functional for the user.
  - Evaluate the efficiency of the system in the stores during the time of testing.
  - Substantiate during the time of testing the security of the system.

3. Scope

The system allow to manage all inventory of finished products, this means that you manage everything related to products and their categories, users and applications. Also you can know in real time the current situation of the products that are in the stores, the pending orders, that users have requested them among other features to be explained more specific descriptions.

The software allows to handle different levels of user or roles. Depending on the role that the user that is registered to handle, shall perform certain tasks.

The system will be structured by the following modules.

Modules Architecture

Figure 1: Modules System

Source: own

3.1 Determination of requirements

Security module

Management of users (Roles and security)

A component that allows the management of users, the registry information system. It allows you to add, edit, activate and deactivate users. It also allows to manage them in the different departments. This component is distributed throughout the system because depending on the role of the registered user, this will allow you to perform different tasks. The roles handled are:

• Administrator

• Supervisor

• Consultation

• Storekeeper

Security, access control, and session handling

The system controls access to it and each of the sections of the inventory system, by means of keys (which will be encrypted within the database) so that they can only access different areas users with privileges to do so.

Billing module

• Register for sale

• Manage clients

• Manage credit

Inventory module

• Manage products

• Manage product subcategory

• Manage product category

Module configuration

• Register parameters

• Manage employee

Reports module

Report generator

The report generator is a module that allows you to know in real time the behaviour of each of the parts of the system, activities carried out by the users, products requested, delivered and received, etc. The system allows the generation of the following reports:

• List of sale credit.

• Consult customer.

• List sales.

• List of products under stock.

• List payments from customers.

• Consult product.

• Consult employee.

• Status of applications.

• Historic warehouse movements.

• Total cost of the inventory.

• CardEx product (report of inputs and outputs of the warehouse).

• Pending applications.

• Outstanding products to come.

Generator of PDF's

The system allows the generation and export of documents in PDF format for the different reports.

4. Tools and methods

Below we describe the tools and methodology used for the development of the system.

4.1 Development tools

PHP programming language

"It's a programming language interpreted by the web server in such a way that these can be generated dynamically. PHP is not only used for this purpose, but it can also be used from a command line interface or for the creation of applications with graphical interfaces." (Villar Fernández, Alcayde Garcia, & Gomez Lopez, 2010)

MySQL database

"MySQL is a management system relational database, multithread and multiuser, developed completely in C and distributed under the GNU GPL license. It is used in most web applications, with a closely linked to the PHP language use". (Villar Fernández, Alcayde Garcia, & Gomez Lopez, 2010)

PhpMyAdmin database management interface

It is a free software tool written in PHP intended to handle the administration of MySQL through web pages, using the Internet. "The functions performed with this application are: create database, create tables, insert data into tables, query, delete data from tables, delete tables, delete databases, etc." (Peacock, 2006)

Web application server

"The web server or also called server http is a program that runs all application next to the server with bi-directional or unidirectional connections." The web server remains in waiting for requests of execution that will make you a client or a user of the Internet, which, appropriately, by delivering information of all kinds according to the required commands." 2014 (Yascual)

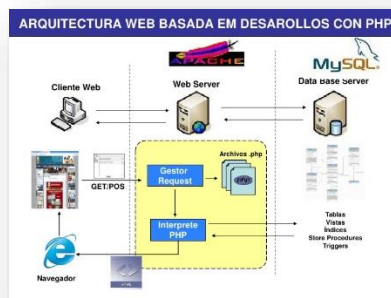## 4.2 Development with PHP-based architecture

Figura 2: Arquitectura web basada en desarrollos con PHP.

Fuente: http://es.slideshare.net/businesstech/php-01-v10

By entering the Admin user enter the module using any browsers (google Chrome preferred) and authenticating with your username and password you can enter or issue reports on any of the modules, as the screen which has been entered, the system will present to the user an easy and friendly interface where you can interact.

The Rup methodology which can be adapted to the context and needs of each organization by each of its phases will be used.

- **Phase of home.** Define the scope and deduce what to build.
- **Phase of development.** Build an executable version of the application architecture and understand how is going to build.
- **Phase of construction.** Complete the basis of the application with the functionality. Build a trial version.
- **Transition phase.** - Availability of the application for end users. Build the final version.

5. Analysis of impacts

The analysis of impacts allows to check the benefits and the degree of approval the proposal created at the institution. This analysis was established on the basis of the impact: economic, social, environmental and technological.

IMPACT	BENEFITS
Economic	Implementing this system, got a reduction in consumption of supplies, which implies a reduction in expenses of reams of leaves and toner for printing them.
Social	Demonstrate a satisfaction in users who manage the system as well as customers who were served, since the times to present reports were considerably immediate and short both in inventory and invoicing, especially the ease of performing each of the processes to the implementation of the system.
Environmental	Today as part of

	environmental liability paper reduction is promoted by that making this system brings considerably with the care of the environment.
Technological	The use of software by means of the system made a good architecture allows you to improve processes, since it combines the reports on the date required.

Table 1: Analysis of Impacts.

Source: own

The benefits afforded by the system are clearly identified and it follows that he has been achieved to comply satisfactorily with the objective of designing and implementing a web system inventory and billing for the town of Cotacachi stores Pichavi.

6. Conclusions

He was achieved in this project to design, develop and implement the Web inventory and billing system using free software, for a proper administration, management, security and control of the:

• Finished product footwear and leather goods of the UEC.

According to the mandate 1014 public entities must use work tools and free software, this software presents great benefits including the cost of licensing.

By automating processes that previously performed manually was obtained:

• Optimization of time and costs at the time of the transactions.

• Security and accuracy in the information.

• Timely and true information of the inventory and billing.

The UEC takes inventory periodically, checking documents and physical counting of finished leather goods and footwear products.

The modules that comprise the Web inventory and billing system are fully integrated, are practical and easy to use,

designed and developed just to cover all the needs of stakeholders according to the requirements in the first phase of the project. The design of the inventory and billing system was carried out efficiently.

The RUP methodology was employed for the development of this software because of the ease that has to adapt to the context and the needs of the project; because it allows to analyze, design, implement and document system presenting a full and useful for user software as a result.

Training in basic and practical knowledge for the use of the system according to the type of role that different users have allowed to complete the final stage of the project explaining in detail each module security, inventory, billing and configuration, allowed the satisfaction of end-users with easy, efficient, accurate and safe use.

Manuals users are made of clear, practical, simple and detailed way for each type of user either administrator, auditor, consultant, or warehouseman, in such a way that in the event of a change of personnel can auto train, adapt quickly and timely for the management of the system.

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