

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/326493512>

Design and Implementation of a Laundry Management System

Article · November 2016

CITATIONS

2

READS

64,785

4 authors, including:



Engr. Dr. Oluwagbemiga Omotayo Shoewu
Lagos State University

160 PUBLICATIONS **623** CITATIONS

[SEE PROFILE](#)



N. T. Mekanjuola
Lagos State University

29 PUBLICATIONS **122** CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Materials [View project](#)



Propagation Project [View project](#)

Design and Implementation of a Laundry Management System.

O. Shoewu¹; N.T. Makanjuola¹; D.A. Phillips²; and A. Emmanuel¹

¹ Department of Electronics and Computer Engineering, Lagos State University, Epe Campus, Nigeria.

² Department of Computer Engineering, Yaba College of Technology, Lagos, Nigeria.

E-mail: engrshoewu@yahoo.com*

ABSTRACT

We present the design and implementation of a laundry management system (LMS) used in a laundry establishment. Laundry firms are usually faced with difficulties in keeping detailed records of customers clothing; this little problem as seen to most laundry firms is highly discouraging as customers are filled with disappointments, arising from issues such as customer clothes mix-ups and untimely retrieval of clothes. The aim of this application is to determine the number of clothes collected, in relation to their owners, as this also helps the users fix a date for the collection of their clothes. Also customer's information is secured, as a specific id is allocated per registration to avoid contrasting information.

(Keywords: customer satisfaction, database, HTML, laundry, management, SQL)

INTRODUCTION

Laundry firms currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the laundry management infrastructure. Often information (on forms) is incomplete or does not follow management standards. Records are often lost in transit during computation requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the laundry firm data and may lead to inconsistencies in data in various data stores.

A significant part of the operation of any laundry firm involves the acquisition, management and timely retrieval of great volumes of information. This information typically involves; customer

personal information and clothing records history, user information, price of delivery and retrieval period, users scheduling as regards customers details and dealings in service rendered, also our products package waiting list. All of this information must be managed in an efficient and cost wise fashion so that the organization resources may be effectively utilized.

The goal of laundry management system is to automate the management of the laundry firm making it more efficient and error free. It aims at standardizing data, consolidating data ensuring data integrity and reducing inconsistencies, through the use of highly computerized process that is stress free, reliable and quick through the use of asp.net computer programming language and SQL database application to both the users and the staff in charge of the registration and laundry management processes. HTML would be at the front-end and provide the graphical user interface that relates with the user, while the SQL database will be at the back-end to handle the data storage process.

EXISTING SYSTEM

Laundry firm currently uses a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the Laundry firm management infrastructure. Often information (on forms) is incomplete, or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. This has lead to inconsistencies in various data due to large volume of contrasting customer details leading to mix-up of clothes in the laundry firm which

thus leads to delay in collecting the clothes back.

PROPOSED SYSTEM

The Laundry Management System is designed for any Laundry firm to replace their existing manual, paper based system. The new system is in form of an e-registration system to control the following; customer information, products, services, users, carts and receipt. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the delay and resources currently required for such tasks as clothes details are bounded to a particular customer with a given id. Since the existing system makes use of tedious administrative tasks, lots paper work and time, in which full information cannot be gotten from busy customers.

The goal of the laundry management system is to provide a computerized process that is stress free, reliable and quick through the use of asp.net computer programming language and SQL database application to the users and staffs in charge of the registration of customers and laundry management processes. HTML would be at the front-end and provide the graphical user interface that relates with the user, while the SQL database will be at the back-end to handle the data storage process.

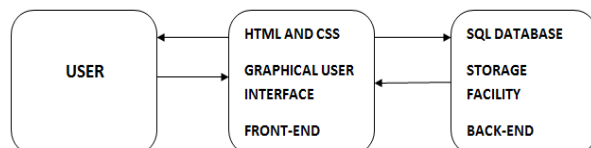


Figure 1: Diagram of the Front and Back End Relationship.

The objective of this work is to implement a management system that will streamline registration process, reduce administrative tasks and paper work so as to improve the registration cycle process flow.

LITETRATURE REVIEW

This section takes critical review of existing system implemented, the success factors,

challenges faced, technologies used and unresolved problems. This forms the basis for implementing later versions.

EXISTING SYSTEM OVER PROPOSED SYSTEM

The proposed system seeks to simplify the users operation. The stages involved in the registration process must be reduced to nearest minimum if it is to be faster and more convenient. The crude way of registration using paper based processes of registration are time consuming and expensive. The customers are rest assured security and availability of their clothing as at when due, as information are protected using a specific Id.

An increase in the number of customer will obviously mean more paper work and less efficiency of the existing system. Hence, many Laundry firms are finding the proposed system a better and more effective way of catering for the inconvenience and inefficiency of the existing system of registration. The proposed system for laundry firms plays a vital role in the transition and if effectively implemented, it should be able to:

Reduce paper work and redundancy thereby improving productivity and lowering cost of printing and purchasing registration materials annually. It aids the administrative in data management of customers, by allowing the user to search for any customer with ease.

MATERIALS AND METHODS

System Analysis and Design

System analysis is a method of problem-solving that deals with the breaking down of a system into components parts in order to study how well the individual parts work and interact to accomplish their purpose. It involves the process of enumerating the existing problems, analyzing the proposed system for costs and benefits, analyzing the system and user requirements and considering possible alternative system.

System analysis is important in the design of subsequent systems. System design consists of design activities that produce system specifications which satisfy the functional

requirements that have been developed in the system analysis process. System design is basically the structural implementation of system analysis. The proposed system is being designed in such a way that users only need to input their customer data which is then entered into a computer database. Customers will be assigned a specific id on registration

TOOLS

Graphical User Interface

Hyper-Text Markup Language (HTML) is the basic language used for creating web pages and other information that can be displayed in a web browser. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser doesn't display the HTML tags, but uses the tags to interpret the concept of the page.

Hyper-Text Markup Language

HTML elements form the building blocks of all websites, allow images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as heading, paragraphs, lists, links, quotes and so on. It can also embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

HTML consists of several key components, including tags and their attributes, character-based data types, character references and entity references. An important component is the document type declaration, which triggers standards mode rendering.

Cascading Style Sheets

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is designed basically to enable the separation of document content from document presentation, including elements such as layout,

colors and fonts. This improves content accessibility, provides flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting and reduce complexity and repetition in the structural content, for instance, allowing tableless web design.

CSS can also allow the same markup page to be presented in different styles for different rendering methods such as on-screen, in print and on Braille-based, tactile devices. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. Priorities are calculated and assigned to rules, so that the results are predictable.

Client-side Script(JAVASCRIPT)

JavaScript is a new scripting language for WebPages. Scripts written with JavaScript can be embedded into your HTML pages. With JavaScript you have many possibilities for enhancing your HTML page with interesting elements. For example you are able to respond to user-initiated events quite easily. Some effects that are now possible with JavaScript were some time ago only possible with CGI. So you can create really sophisticated pages with the help of JavaScript on the Internet.

SQL(Structured Query Language)

To work with data in a database, you must use a set of commands and statements (language) defined by the DBMS software. There are several different languages that can be used with relational databases; the most common is SQL. Both the American National Standards Institute (ANSI) and the International Standards Organization (ISO) have defined standards for SQL. Most modern DBMS products support the Entry Level of SQL-92, the latest SQL standard (published in 1992).

SQL Server Features

Microsoft SQL Server supports a set of features that result in the following benefits:

- **Ease of installation, deployment, and use:** SQL Server includes a set of administrative and development tools that improve your ability to

install, deploy, manage, and use SQL Server across several sites.

- **Scalability:** The same database engine can be used across platforms ranging from laptop computers running Microsoft Windows® 95/98 to large, multiprocessor servers running Microsoft Windows NT®, Enterprise Edition.
- **Data warehousing:** SQL Server includes tools for extracting and analyzing summary data for online analytical processing (OLAP). SQL Server also includes tools for visually designing databases and analyzing data using English-based questions.
- **System integration with other server software:** SQL Server integrates with e-mail, the Internet, and Windows.

System Requirement

System requirement is a description of the needs of a user for an information system. The unique requirements of a user are identified here.

Modeling The System

The laundry application flow diagram is shown below:

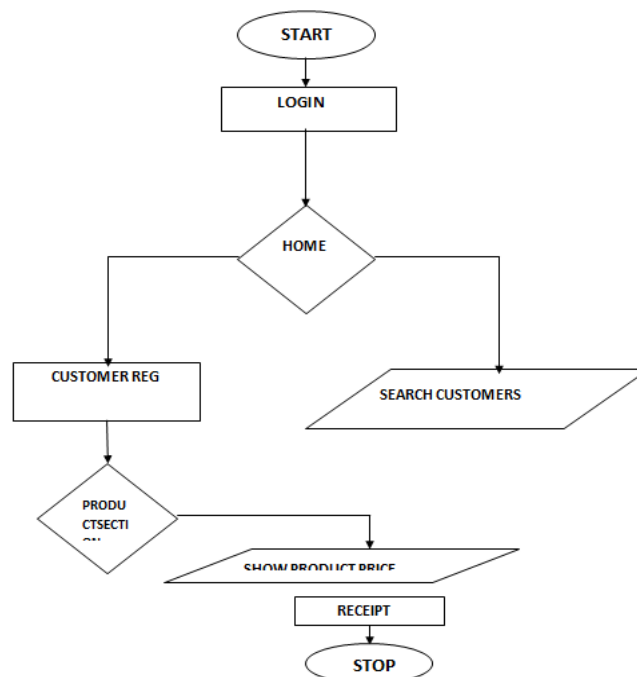


Figure 1: Flow Chart Diagram.

User Requirements

To gain access to the laundry management system resources, the user would need:

- A personal computer
- A username
- A genuine password

User-Interface Requirements

User interfaces are the registration pages developed for the customers and users to register and manage the items brought. They consist of the following:

- login page (Username and password)
- Product page
- View customers
- View records
- Search for customers
- Register a new user
- Print Receipt

DATAFLOW DIAGRAM

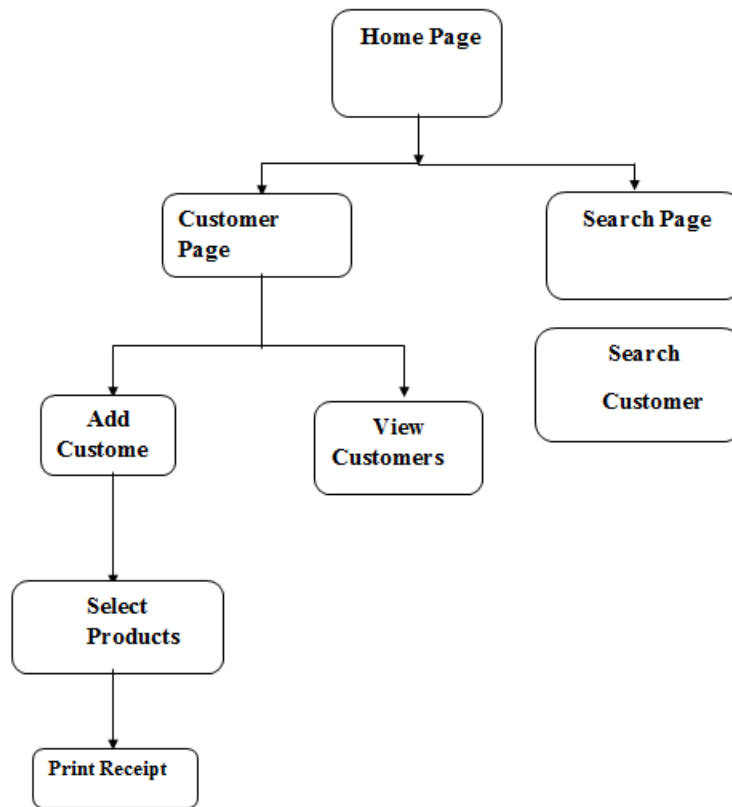


Figure 2: Laundry Application Flowchart.

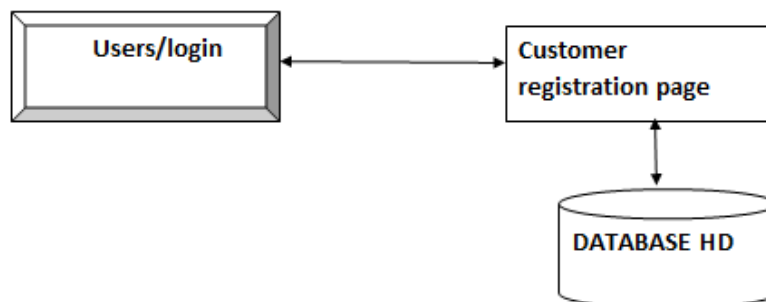


Figure 3: System Design and Architecture.

DESIGN IMPLEMENTATION AND RESULTS

Design implementation refers to the real live running of the designed program. This section consists of the program modules, showing what they do, and how the system can be deployed.

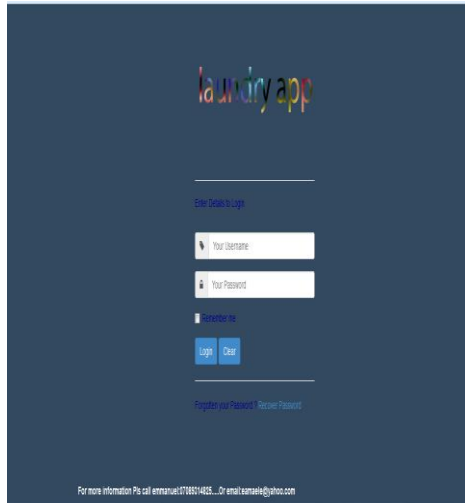


Figure 4: Login Page.

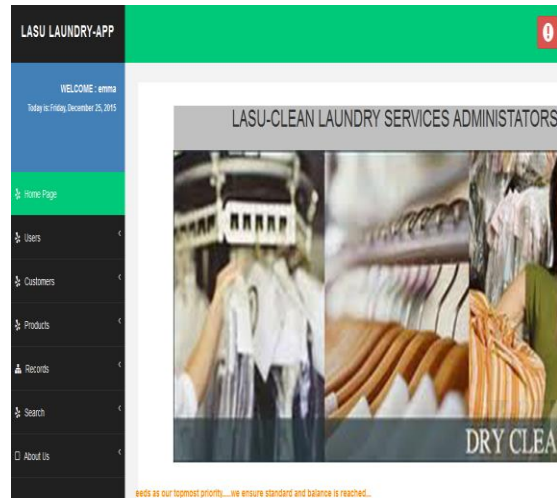


Figure 5: Homepage.

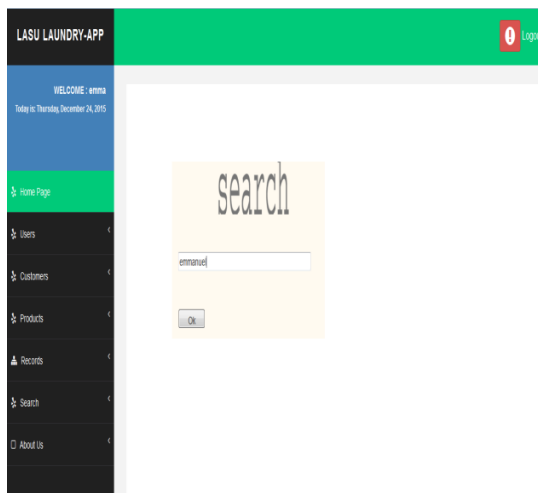


Figure 6: Search Customer Page.

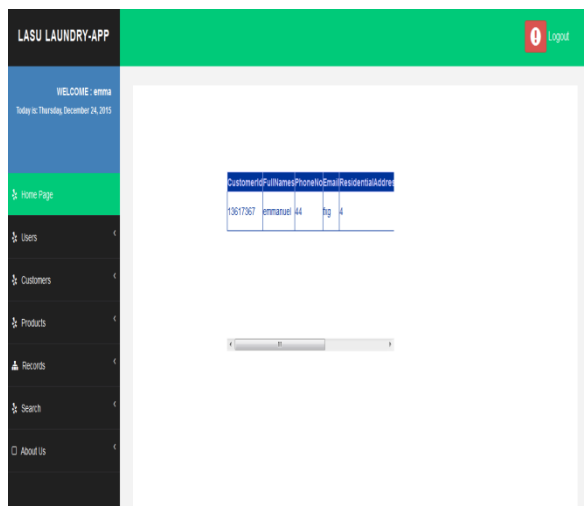


Figure 7: Searched Customer Page.

LASU LAUNDRY-APP Logout

WELCOME: emma
Today is: Thursday, December 24, 2015

Home Page

Users

Customers

Products

Records

Search

About Us

USERS DETAILS

Username:

Password:

Email Address:

Figure 8: User Registration Page.

LASU LAUNDRY-APP Logout

WELCOME: emma
Today is: Thursday, December 24, 2015

Home Page

Users

Customers

Products

Records

Search

About Us

CUSTOMERS REGISTRATION FORM

CustomerId:

Fullname:

PhoneNo:

Email:

Residential Address:

Number of Clothes brought:

Figure 9: Customer Registration Page.

EMMA'S LAUNDRY-APP Logout

Today is: Label

Home Page

Users

Customers

Products

Archive

Search

About Us

Select Category:

Add To Cart/Product	Category/Price
<input type="checkbox"/> Chat	WASHERS \$10.00
<input type="checkbox"/> Chang	WASHERS \$10.00
<input type="checkbox"/> Guaraná Fantástica	WASHERS \$4.50
<input type="checkbox"/> Sakquith Ale	WASHERS \$14.00
<input type="checkbox"/> Steelhead Stout	WASHERS \$10.00
<input type="checkbox"/> CÔté de Baye	WASHERS \$263.50
<input type="checkbox"/> Chertreuse white	WASHERS \$10.00
<input type="checkbox"/> Ipsi Coffee	WASHERS \$46.00
<input type="checkbox"/> Laughing Lumberjack Lager	WASHERS \$14.00

Figure 10: Products Page.

LASU LAUNDRY-APP Logout

WELCOME: emma
Today is: Thursday, December 24, 2015

Home Page

Users

Customers

Products

Records

Search

About Us

PRODUCT DETAILS

Product Category Id:

Product Category Name:

Product Category Description:

Figure 11: Product Registration Page.

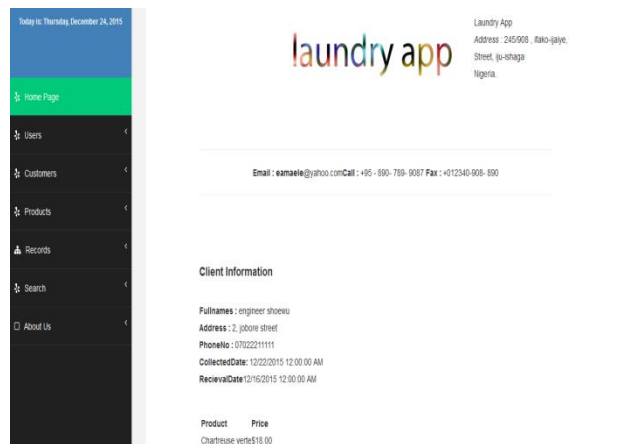


Figure 12: Receipt Page.

CONCLUSION

The package was designed in such a way that future modifications can be done easily. The following conclusion can be deduced from the development of the project.

- Automation of the entire system improves the efficiency.
- It provides a friendly graphical user interface which proves to be better when compared to the existing system.
- It provides a friendly graphical user interface which proves to be better when compared to the existing system.
- It gives appropriate access to the authorized users depending on their permissions.
- It effectively overcomes the delay in communications.
- Updating of information becomes so easier.
- System security, data security and reliability are the striking features.
- The System has adequate scope for modification in future if it is necessary.

REFERENCES

1. Lawrence, Corbitt, Fisher, and Tidwell. 2000. *Internet Commerce: Digital Models for Business*. Wiley: Sidney, Australia.

2. Phillips, P. 2003. *e-Business Strategy*. McGraw-Hill: London, UK.
3. Whitten, Bentley, and Dittman. 2004. *System Analysis and Design Methods (5th ed)*. New York, NY.
4. PerlScriptsJavaScripts.com. 2006. "SQL Tutorial, Database Commands, Beginners Guide, Perl, Program". <http://www.perlscriptsjavascripts.com/tutorials/sql/index.html>, Accessed 3rd of February, 2006.
5. HTML Elements. W3schools. Retrieved 16 March, 2015. *Journals of science of technology*
6. CSS Introduction. W3schools. Retrieved 16 March, 2015.
7. XHTML.com. Retrieved on 16 May, 2012.
8. SQL: Project Summary. Black Duck Software. Retrieved 17 September, 2012. *Journals of Contemporary Mathematical Science*.
9. ASP Manual: www.asp.net
10. ASP for Windows: asp.net. Retrieved 29 October, 2013. <https://wikipedia.org/wiki/ASP>

SUGGESTED CITATION

Shoewu, O., N.T. Mekanjuola, D.A. Phillips, and A. Emmanuel. 2016. "Design and Implementation of a Laundry Management System". *Pacific Journal of Science and Technology*. 17(2):197-204.