

**DESIGN AND IMPLEMENTATION OF PRODUCTS EXPIRY ALERT  
MANAGEMENT SYSTEM**

**BY**

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**NOVEMBER, 2023.**

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**BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF  
COMPUTER SCIENCE, IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF  
SCIENCE (B.SC) DEGREE IN COMPUTER SCIENCE, PHYSICAL  
SCIENCES, UNIVERSITY OF BENIN, BENIN CITY.**

**NOVEMBER, 2023.**

## **APPROVAL**

This project is hereby approved by the Department of Computer Science in partial fulfillment of the requirement for the award of Bachelor of Science Degree (B.Sc) in Computer Science of the University of Benin, Benin City, Nigeria.

\_\_\_\_\_  
**Prof. Godspower O. Ekuobase**

**(Head of Department)**

\_\_\_\_\_  
**Date**

## **CERTIFICATION**

I the undersigned certify that this project work was carried out by **MATTHEW OMOH AYODELE** with the matriculation number **PSC1611534** of the Department of Computer Science.

We also certify that the work is adequate in scope and quality in partial fulfillment of the requirements for the Award of Bachelor of Science (B.Sc.) Degree, Faculty of Physical Sciences, University of Benin, Benin City.

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**Mr. K. O. Otokiti**  
**(Project Supervisor)**

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**Date**

## **DEDICATION**

This research project is dedicated to the Most High God, who has the whole world in His Hands, and sees all that goes in; around me and does that concerns me perfectly in His own way, in spite of all my short-comings and challenges.

Also, it is dedicated to all those who demonstrated their love and concern to me during the duration of this programme.

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## **ABSTRACT**

This project, Product Expiry Alert Management System helps to improve the work efficiency of supermarket by providing daily, weekly or monthly expiry alerts of products. It also provides the basic information maintenance function of employees, memberships and products so that managers can through the function to add, delete, and modify the basic information of employees and the employees can through it to add, modify and delete the basic information of memberships and goods. It also tend to solve the problem of expired goods whereby notifying/alert supermarket managers when product is about to expire. Products expiry management system is very convenient for manage, input, output, and find the data so as to make the messy supermarket data to specific, visualizations, rationalization.

# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND OF STUDY

Products control is the process of managing products in order to meet customer demand at the lowest possible cost and with a minimum investment, Byoungho (2004). A successfully implemented products control program takes into account such things as purchasing goods commensurate with demand, seasonal variation, changing usage patterns, expiration alerts and monitoring for pilferage, Ellram (2006). A preliminary step in the process of product control is to determine the approximate costs of managing inventory. According to Langabeer and Stoughton (2001), these costs include such expenses as storage costs, inventory risks, and the loss-of opportunity costs associated with tying up capital. Product management is a vital function to help ensure the success of manufacturing and distribution companies and lately retail stores. The effectiveness of Product management systems is directly measurable by how successful a company is in providing high level of customer service, low inventory investment, maximum throughput and low costs, Ellram (2006). The challenge of productive product management is to support an upward trend in sales while keeping the investment at the lowest level consistent with adequate customer service. Control of inventory, which typically represents 45% to 90% of all expenses for business, is needed to ensure that the business has the right goods on hand to avoid stock-outs, to prevent shrinkage (spoilage/theft), provide proper accounting and prevent unnecessary loss of goods due to expiration.

Articles stored and later used in this way are known collectively as inventory. In large organizations, it is usual for inventory to be in tens, even hundreds of items valued at tens of millions of naira. Given this state, it has

become natural to have inventory items represented in computer-maintained files. Computer especially microcomputer has become an important tool in all types of business from one-man operations up to large international business firms. Every business manager needs to know what he purchased, what he sold and what is remaining in the warehouse. For this obvious reason, large, small and medium organizations, companies and government, as a whole need computerization of inventory control. The speed at which the administrative and paper work in retail stores increases on daily basis calls for a corresponding need for a quick and effective device to meet up with the demand. This project hopes to link inventory control and computer system.

This study is to produce software which manages the sales activity done in a supermarket, maintaining the stock details, maintaining the records of the sales done for a particular month/year and most importantly notify users of products which have expired or about to expire. The users will consume less time in calculation and the sales activity will be completed within a fraction of seconds whereas manual system will make the user to write it down which is a long procedure and so paper work will be reduced and the user can spend more time monitoring the supermarket. The program will be user friendly and easy to use. The system will display all the items whose name start with the letter selected by the user. He can select out of those displayed. Finally, a separate bill will be generated for each customer. This will be saved in the database. Any periodic records can be viewed at any time. If the stock is not available, the supermarket orders and buys from a prescribed vendor. The amount will be paid by deducting the total amount acquired in the sales activity. Admin provides a unique username and password for each employee through which he can login.

## 1.2 STATEMENT OF PROBLEM

Although some business owners have incorporated one form of management software or the other in their business, some still use the manual method to manage their business. This manual method is besieged with numerous problems, among which are:

- i. **Time Consumption:** Manual systems are time consuming, as the business owner must keep track of Supermarket sales on a daily basis, and update the master file at the end of the day.
- ii. **Poor Communication:** For a large business that has their workers in different geographical locations, communication is difficult as resources have to be wasted before updated information is gotten.
- iii. **Poor record keeping:** The documentation of the daily sales and general stock records are done with paper and pen. This method is poor as data can easily be manipulated or destroyed either intentionally or by natural disaster.

As for the current product management software which are been used by some companies, they have been seen to have one major limitation; products expiration monitor. This is a very important feature that must exist in well-developed software. These pieces of software only have the ability to record stocks and manage sales. Lack of expiry monitor has made business owners loose money due to product expiration. There have been cases of business owners selling expired products to users unknowingly. For a case of drug companies, expired drugs become poison to the body. This brings bad name to the company and loss of customers.

### **1.3 AIM AND OBJECTIVES OF STUDY**

The aim of this project is to design a product expiry alert management system for a supermarket which will notify the users of any product which is about to expire or expired. We intend to achieve with the following objectives

- i. Carry out a detailed analysis of the existing system to identify the constraints.
- ii. Design a system that caters for the constraints of the existing system
- iii. Implement the designed system.

### **1.4 SCOPE OF STUDY**

Centers on providing a system that managing stock controls and Expiration notifications.

In other words, this project work covers stock control, management and expiration notifier. It tends to correct anomalies in Supermarket business. It analyses opening of new stocks, stock updates and ability to view existing ones. It provides quick way of operation by capturing the manual process and automating them. It is stand-alone software built for windows operating system.

### **1.5 MOTIVATION OF STUDY**

The motivation about this project came when I was hospitalized for two weeks due to expired product that I consume that nearly took my life.

So I said to myself what can be done to conquer this problem as a computer scientist.

The idea of Product Expiry Alert Management System came to mind, to develop a software in order to alert Supermarkets/shop owner to know when a product is about to expire

## **1.6 SIGNIFICANCE OF STUDY**

For every new thing developed there must be an advantage, a disadvantage and a significance it will have in the world. The significance of this product alert notifier cannot be over emphasized.

1. It will be of great importance to business owners as it will reduce if not completely cut off the unknowingly expiration of goods.
2. It will benefit supermarkets specifically as it will improve the managerial cum administrative strength of the business and move the business forward to meet the demand of times and globalization in this era of technology.
3. This work can serve as a reference to scholars who are researching in the field of computerized stock management.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 REVIEW OF RELATED LITERATURE

According to Ballou, (1999), he defined supermarket as a large form of the traditional grocery store, it is a self-service shop offering a wide variety of food and household products, organized into aisles. It is larger in size and has a wider selection than a traditional grocery store, but is smaller and more limited in the range of merchandise than a hypermarket or big-box market. Yang and Burns(2003) stated that the concept of an inexpensive food market relying on large economies of scale was developed by Vincent Astor. He founded the Astor Market in 1915, investing \$750,000 of his fortune into a 165 by 125 corner of in the famous 95 Manhattan avenue, creating in effect, an open air mini-mall that sold meat, fruit, and flowers. The expectation was that customers would come from great distances ("miles around"), but in the end even attracting people from ten blocks away was difficult, and the market folded in 1917. The concept of a super market was developed by entrepreneur Clarence Saunders and his Piggly Wigglystores. His first store opened in 1916. Saunders was awarded a number of patents for the ideas he incorporated into his stores. The stores were a financial success and Saunders began to offer franchises. The Great Atlantic & Pacific Tea Company, which was established in 1859, was another successful early grocery store chain in Canada and the United States, and became common in North American cities in the 1920s.

According to Rietze (2006), there was debate about the origin of the supermarket, with King Kullen and Ralphs of California having strong claims. Other contenders included Weingarten's Big Food Markets and Henke & Pillot. To end the debate, the Food Marketing Institute in conjunction with the Smithsonian Institution and with funding from H.J. Heinz, researched the

issue. It defined the attributes of a supermarket as "self-service, separate product departments, discount pricing, marketing and volume selling".

Pagh and Cooper (1998), said that it has been determined that the first true supermarket in the United States was opened by a former Kroger employee, Michael Cullen, on August 4, 1930, inside a 6,000-square-foot former garage in Jamaica, Queens in New York City. The store, King Kullen, inspired by the fictional character King Kong, operated under the slogan "Pile it high. Sell it low." At the time of Cullen's death in 1936, there were seventeen King Kullen stores in operation. Although Saunders had brought the world self-service, uniform stores and nationwide marketing, Cullen built on this idea by adding separate food departments, selling large volumes of food at discount prices and adding a parking lot.

Other established American grocery chains in the 1930s, such as Kroger and Safeway at first resisted Cullen's idea, but eventually were forced to build their own supermarkets as the economy sank into the Great Depression, while consumers were becoming price-sensitive at a level never experienced before. Kroger took the idea one step further and pioneered the first supermarket surrounded on all four sides by a parking lot by Bowersox (2009).

According to Ballou (1999), Supermarkets proliferated across Canada and the United States with the growth of automobile ownership and suburban development after World War II. Most North American supermarkets are located in suburban strip shopping centers as an anchor store along with other smaller retailers. They are generally regional rather than national in their company branding. Kroger is perhaps the most nationally oriented supermarket chain in the United States but it has preserved most of its regional brands, including Ralphs, City Market, King Soopers, Fry's, Smith's, and QFC.

In Canada, the largest such chain is Loblaw, which operates stores under a variety of regional names, including Fortinos, Zehrs, No Frills, the Real Canadian Superstore, and the largest, Loblaws, (named after the company

itself). Sobeys is Canada's second largest supermarket with locations across the country, operating under many banners (Sobeys IGA in Quebec). Québec's first supermarket opened in 1934 in Montréal, under the banner Steinberg's.

Yang and Burns (2003) said that, in the United Kingdom, self-service shopping took longer to become established. Even in 1947, there were just ten self-service shops in the country. In 1951, ex-US Navy sailor Patrick Galvani, son-in-law of Express Dairies chairman, made a pitch to the board to open a chain of supermarkets across the country. The UK's first supermarket under the new Premier Supermarkets brand opened in Streatham, South London, taking ten times as much per week as the average British general store of the time. Other chains caught on, and after Galvani lost out to Tesco's Jack Cohen in 1960 to buy the 212 Irwin's chain, the sector underwent a large amount of consolidation, resulting in 'the big four' dominant UK retailers of today: Tesco, Asda (owned by Wal-Mart), Sainsbury's and Morrisons.

Patton (2000) said that in the 1950s, supermarkets frequently issued trading stamps as incentives to customers. Today, most chains issue store-specific "membership cards," "club cards," or "loyalty cards". These typically enable the card holder to receive special members-only discounts on certain items when the credit card-like device is scanned at check-out. Sales of selected data generated by club cards are becoming a significant revenue stream for some supermarkets.

### **2.1.1 The Concept of Management System**

According to Rietze (2008), Management system (Software) is a general phrase used to describe a category of computer software designed to help streamline the complexity of large projects and tasks as well as facilitate team collaboration and project reporting. Most management software solutions can

also handle resource and employee management, schedule coordination, task assignment, budgeting, time and risk analysis and more.

Management software is a broad term that can also apply to financial management software, network management software, customer relationship management software, asset management software or Product management software.

### **2.1.2 Types of Supermarket**

According to Pagh and Cooper (1998), Supermarket is categorized into different type due to their size, scale, products offered, Store Format and Trends While people use the terms "Grocery Store", "Hypermarket" and "Bigboxmarket" interchangeably to refer to retail food stores, industry watchers offer more specific guidelines about different types of Supermarket. "Hypermarkets" are on the larger end of this spectrum and carry a diverse mix of food and general merchandise. Nomenclature is not always uniform Financial Institutions Fund places Wal-Mart in the same category as supermarkets, but accounting for only the supercenter's grocery division. The Food Marketing Institute classifies superstores as a large type of supermarket, while designating warehouse stores as grocery stores.

1. **Grocery Store:** A grocery store is a retail store that primarily sells food. A grocer is a bulk seller of food. Grocery stores often offer non-perishable food, with some also having fresh produce, butchers, delis, and bakeries. Large grocery stores that stock significant amounts of non-food products, such as clothing and household items, are called supermarkets. Some large supermarkets also include a pharmacy and an electronics section, the latter selling DVDs, headphones, digital alarm clocks, and similar items. Grocery stores operate in many different styles ranging from rural family-owned operations, such as IGAs, boutique chains, such

as Whole Foods Market and Trader Joe's to larger supermarket chain stores. In some places, food cooperatives or "co-op" markets, owned by their own shoppers, have been popular. However, there has recently been a trend towards larger stores serving larger geographic areas by Bowersox (2009).

2. **Hypermarket:** Is an advanced supermarket which has an additional department store. The result is an expansive retail facility carrying a wide range of products under one roof, including full groceries lines and general merchandise. In theory, hypermarkets allow customers to satisfy all their routine shopping needs in one trip. After the successes of super-markets and hyper-markets and amid fears that smaller stores would be forced out of business, franchise laws that made it more difficult to build hypermarkets and also restricted the amount of economic leverage that hypermarket chains can impose upon their suppliers. In France, hypermarkets are generally situated in shopping centers (French: *centre commercial or centre d'achats*) outside of cities, though some are present in the city center. They are surrounded by extensive car parking facilities, and generally by other specialized superstores that sell clothing, sports gear, automotive items, etc by Yang and Burns (2003).
3. **Bigboxmarket:** Is a physically large retail establishment, usually part of a chain. The term sometimes also refers, by extension, to the company that operates the store. The store may sell general dry goods, it is generally inaccessible to pedestrians and often can only be reached by motor vehicles, the big-box store is regarded as unsustainable and a failure of urban planning.

Some conservatives worry about the economic impact of big-box retailers on established downtown merchants or the sprawl-inducing impacts on the character of such developments, as these stores are often associated

with heavy traffic in the areas around the store locations. Some communities have adopted a higher level of architectural treatment and regulations to ensure that the superstores relate better to their environs and neighbors. Many regulate signage and landscaping.

There are also concerns surrounding traffic and roads. The increased traffic leads to more air pollution in an area and higher taxes in order to maintain the roads. (By Ballou 1999).

## **2.2 INTRODUCTION TO ONLINE MARKETING (E-COMMERCE)**

According to Yang and Burns (2003), The internet marketing has been active for a long time now, the cumulative events occurring in online marketing is leading up to where we are now it have impacted the entire globe faster than any marketing revolution in history. Over the past decade or so, supermarkets and other grocery retailers have continued to invest significantly into broadening their Internet presence and expanding the number of channels through which their goods are sold. Key Note estimates that sales of groceries transacted via online channels observed double-digit growth between 2007 and 2011, increasing by 127% overall. One of the major trends to have driven growth within the Internet grocery market is m-commerce that is sales made via mobile channels, i.e. smart phones and tablet computers. The increasing popularity of smart phones and tablets among consumers has resulted in a whole host of retailers investing significant sums of money into mobile sales platforms, as well as downloadable applications (apps'), which offer a more interactive and personalized shopping experience. Despite the growth of online grocers in recent years, online spending still accounts for a relatively small proportion of the overall Internet grocery market, with just 3.9% of total grocery sales estimated to have been transacted via e-commerce and m-commerce channels. However, the share of the total grocery market represented by online grocers

has continued to increase year-on-year since at least 2007, when their market share stood at just 2.1%. Key Note expects the Internet grocery market to continue to go from strength to strength over the forthcoming years and has forecast year-on-year double-digit growth for 2012 to 2016. The rising uptake of Internet-connected mobile devices, such as smart phones and tablets, should boost sales transacted via m-commerce channels, while continued Government investment in the rollout of superfast broadband, alongside the introduction of the UK's first 4G mobile network, will also help to boost Internet activity and the use of e-commerce services throughout the country by Bowersox (2009).

According to Patton (1990), online marketing can broadly be defined as the process or areas involved in the running and operation of an organization that are electronic or digital in nature. These include direct business activities such as marketing, sales and human resource management but also indirect activities such as business process re-engineering and change management, which impact on the improvement in efficiency and integration of business processes and activities.

In 1994, spending for internet marketing totaled nearly nothing, but increased to over \$300 million in 1995. Now, little more than a decade later, marketing spending and internet marketing business has exploded to nearly \$200 billion (according to Forrester Research). Today, it's hard to believe in having an organization which doesn't have some kind of online presence. When the internet was first introduced in the early 90s, it wasn't considered to be an advertising medium at all. Instead, the internet was treated as a tool for exchanging emails and digital information, but wasn't yet considered valuable for reaching customers. However, it wasn't long before marketing pioneers began to see the potential for internet marketing business as millions of web surfers logging on each day to find valuable and relevant information. Within just a few years, informative and educational marketing, as well as graphically enticing banner ads began to be show up. It wasn't long before results began to

flood in which proved the value of the internet marketplace to even the most skeptical advertisers.

Factors that affect online marketing are as follows:

1. Technological Factors,
2. Social Factors and
3. Economic Factors.

### **2.2.1 Benefits of E-Commerce to Consumers**

- i. **24/7 access:** It enables customers to shop or conduct other transactions 24 hours a day, all year round from almost any location. For example, checking balances, making payments, and other information. By Rietze (2008).
- ii. **Price comparisons:** Customers can ‘shop’ around the world and conduct comparisons either directly by visiting different sites, or by visiting a single site where prices are aggregated from a number of providers and compared.
- iii. **Improved delivery processes:** This can range from the immediate delivery of digitized or electronic goods such as software or audio-visual files by downloading via the Internet, to the on-line tracking of the progress of packages being delivered by mail or courier by Pagh and Cooper (1998).

### **2.2.2 Benefits of E-Commerce to Society**

According to yang and Burns (2009), E-commerce to society enables more flexible working practices, which enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only is this more convenient and provides happier and less stressful working environments,

it also potentially reduces environmental pollution as fewer people have to travel to work regularly.

Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available to them.

Facilitates delivery of public services: For example, health services available over the Internet (on-line consultation with doctors or nurses), and filing taxes over the Internet through the Inland Revenue website.

### **2.2.3 Limitations of E-Commerce**

According to Bowersox (2009), there was much hype surrounding the Internet and e-commerce over the last few years of the twentieth century. Much of it promoted the Internet and e-commerce as the panacea for all ills, which raises the question, are there any limitations of e-commerce and the Internet? Isaac Newton's 3rd Law of Motion, for every action there is an equal and opposite reaction suggests that for all the benefits there are limitations to e-commerce. These again will be dealt with according to the three major stakeholders' organizations, consumers and society.

Rapidly evolving and changing technology, so there is always a feeling of trying to catch up and not be left behind. Under pressure to innovate and develop business models to exploit the new opportunities which sometimes leads to strategies detrimental to the organization. The ease with which business models can be copied and emulated over the Internet increases that pressure and curtails longer-term competitive advantage.

### **2.2.4 Limitations of E-Commerce to Consumers**

According to Rietze (2008), computing equipment is needed for individuals to participate in the new 'digital' economy, which means an initial

capital cost to customers. A basic technical knowledge is required of both computing equipment and navigation of the Internet and the World Wide Web.

- i. Cost of access to the Internet, whether dial-up or broadband tariffs.
- ii. Cost of computing equipment. Not just the initial cost of buying equipment but making sure that the technology is updated regularly to be compatible with the changing requirement of the Internet, websites and applications.
- iii. Lack of security and privacy of personal data. There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data.
- iv. Physical contact and relationships are replaced by electronic processes. Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings.

#### **2.2.5 Limitations of E-Commerce to Society**

- i. **Breakdown in human interaction:** As people become more used to interacting electronically there could be an erosion of personal and social skills which might eventually be detrimental to the world we live in where people are more comfortable interacting with a screen than face to face.
- ii. **Social division:** There is a potential danger that there will be an increase in the social divide between technical haves and have-nots – so people who do not have technical skills become unable to secure better-paid jobs and could form an underclass with potentially dangerous implications for social stability by Patton (1990).

## **2.3 CONCEPT OF MANAGEMENT**

According to Rietze (2008), the term management is the organization and coordination of the activities of a business in order to achieve defined objectives. Management is often included as a factor of production along with machines, materials, and money. According to the management guru Peter Drucker (1909-2005), the basic task of management includes both marketing and innovation. Practice of modern management originates from the 16th century study of low-efficiency and failures of certain enterprises, conducted by the English statesman Sir Thomas More (1478-1535). Management consists of the interlocking functions of creating corporate policy and organizing, planning, controlling and directing an organization's resources in order to achieve the objectives of that policy.

The size of management can range from one person in a small organization to hundreds or thousands of managers in multinational companies. In large organizations, the board of directors defines the policy which is then carried out by the chief executive officer, or CEO. Some people agree that in order to evaluate a company's current and future worth, the most important factors are the quality and experience of the managers. Management involves the manipulation of the human capital of an enterprise to contribute to the success of the enterprise. This implies effective communication: an enterprise environment (as opposed to a physical or mechanical mechanism), implies human motivation and implies some sort of successful progress or system outcome. As such, management is not the manipulation of a mechanism (machine or automated program), not the herding of animals, and can occur in both a legal as well as illegal enterprise and environment. Based on this, management must have humans, communication, and a positive enterprise endeavor. Plans, measurements, motivational psychological tools, goals, and economic measures (profit, etc.) may or may not be necessary components for there to be management. At first, one views management functionally, such as

measuring quantity, adjusting plans, meeting goals. This applies even in situations where planning does not take place. From this perspective, Henri Fayol (1841–1925) considers management to consist of six functions:

1. Forecasting
2. Planning
3. Organizing
4. Commanding
5. Coordinating
6. Controlling.

## **2.4 CONCEPT OF SYSTEM**

According to Patton (2000), the word system in its meaning here, has a long history which can be traced back to Plato (Philebus), Aristotle (Politics) and Euclid (Elements). It had meant "total", "crowd" or "union" in even more ancient times, as it derives from the verb *sunístemi*, uniting, putting together. "System" means "something to look at". You must have a very high visual gradient to have systematization. In philosophy, before Descartes, there was no "system". Plato had no "system". Aristotle had no "system".

In the 19th century the first to develop the concept of a "system" in the natural sciences was the French physicist Nicolas Léonard Sadi Carnot who studied thermodynamics. In 1824 he studied the system which he called the working substance, i.e. typically a body of water vapor, in steam engines, in regards to the system's ability to do work when heat is applied to it. The working substance could be put in contact with either a boiler, a cold reservoir (a stream of cold water), or a piston (to which the working body could do work by pushing on it). In 1850, the German physicist Rudolf Clausius generalized

this picture to include the concept of the surroundings and began to use the term "working body" when referring to the system.

One of the pioneers of the general systems theory was the biologist Ludwig von Bertalanffy. In 1945 he introduced models, principles, and laws that apply to generalized systems or their subclasses, irrespective of their particular kind, the nature of their component elements, and the relation or 'forces' between them. Significant development to the concept of a system was done by Norbert Wiener and Ross Ashby who pioneered the use of mathematics to study systems.

In the 1980s the term complex adaptive system was coined at the interdisciplinary Santa Fe Institute by John H. Holland, Murray Gell-Mann and others. System is therefore an organized, purposeful structure that consists of interrelated and interdependent elements (components, entities, factors, members, parts etc.). These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system, in order to achieve the goal of the system. All systems have inputs, outputs and feedback mechanisms, maintain an internal steady-state (called homeostasis) despite a changing external environment, display properties that are different than the whole (called emergent properties) but are not possessed by any of the individual elements, and have boundaries that are usually defined by the system observer. Systems underlie every phenomenon and all are part of a larger system. Systems stop functioning when an element is removed or changed significantly. Together, they allow understanding and interpretation of the universe as a meta-system of interlinked wholes, and organize our thoughts about the world.

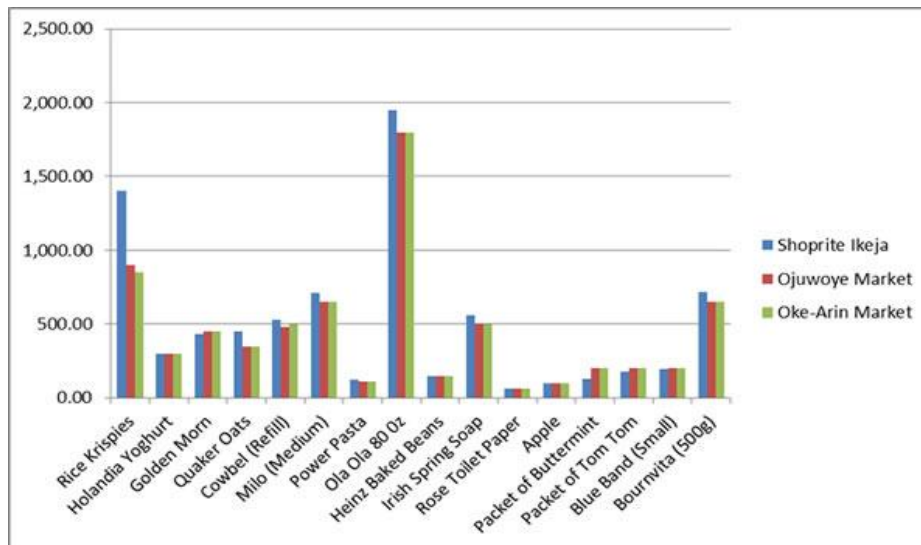
## **2.5 SUPER MARKET MANAGEMENT USING SHOPRITE NIGERIA AS CASE STUDY**

According to Rietze (2008), Shoprite is the leading retailer across Africa and is the brand of choice for many consumers across the African continent. Shoprite's large following of loyal customers can be attributed to their ability to offer the widest range of products and the highest standards of goods and services which is a necessary factor in building a formidable supermarket. Shoprite works hand in hand with many local Nigerian suppliers, buying in bulk in order to pass the cost savings onto you as the customer. So this way, you can continue to enjoy a world class shopping experience whilst saving money.

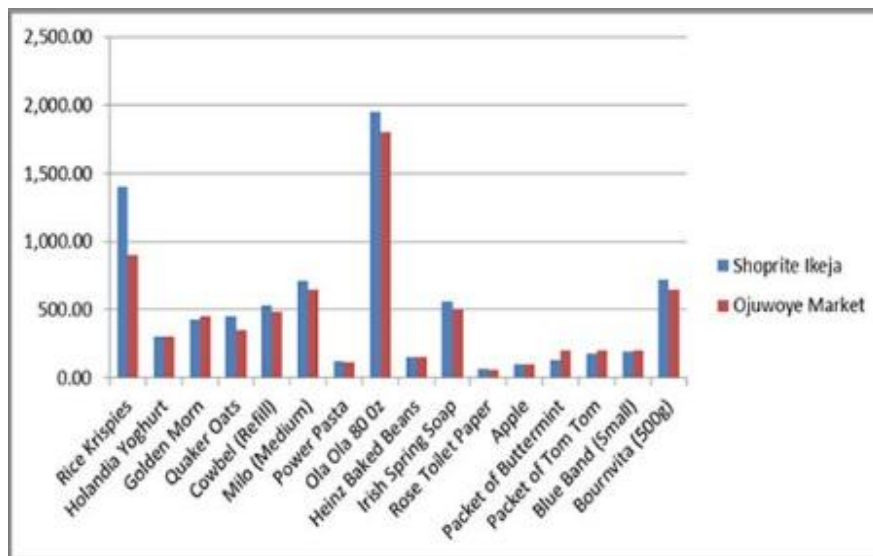
There are series of comparison between the prices of Shoprite and some other lower market which shows the huge standard created by the Supermarket.

*The Bar chart illustrating the comparison of prices between Shoprite, Oke-Arin market and Ojuwoye market is indicated in diagram 2.1 and diagram 2.2 shows the comparison between Shoprite and Ojuwoye market only.*

In Nigeria, Shoprite is arguably the darling of grocery-store patrons. The fanfare and feverish public following that heralded the opening of its first retail store in Ibadan, southwestern Nigeria, in June 2013 underscored its popularity among citizens of a country whose penchant for ostentation is unrivalled in many other parts of the world. The anticipation and reception of Ibadan people about the formal opening of the grocer was enormous that the social media was soon satiated with jokes of how ₦102,000 people went shopping at the store but only ₦35,000 was made in sales that day! And on a serious note, young ladies in Ibadan soon began boasting of fast sealing the gap between their more urbane Lagos counterparts just on account of the opening of the city's first Shoprite.



**Figure 2.1:** Comparison of Prices between Shoprite, Oke-Arin Market and Ojuwoye Market



**Figure 2.2:** Comparison of Prices between Shoprite and Ojuwoye Market only.

## 2.6 SUMMARY OF LITERATURE REVIEW

The literature reviewed various concepts relating to management system (Software) in Super market. It defined the concept of management system and evaluated the challenges faced in the management of the system. The relevance of Management system in Supermarket and the need for E-Commerce in the Business Sphere was evaluated in the Literature review.

## CHAPTER THREE

### SYSTEM ANALYSIS AND DESIGN

#### 3.0 INTRODUCTION

This chapter deals with the analysis of the existing system and the propose system. It evaluates the designs of the proposed system. The System Analysis of the existing system to be improved upon and the proposed solutions to the short comings of the current mode of Supermarket will be thoroughly discussed. Also, the methodology used in this project is the Object-Oriented Analysis and Design methodology (OOAD).

#### 3.1 ANALYSIS OF EXISTING SYSTEM

The current system operates manual supermarket management system, from stocks, products, ordering and purchases etc. recorded in a book. This is faced with errors, incompleteness, and insufficient data for analysis. Information regarding stocks, products, sales and purchases are still in black and white which is not properly organized and managed. From the wholesalers to retailer bills, tickets, vouchers, receipts of products are recorded in a book but further operations are not being properly handled. As a result, it is difficult in processing, updating and managing.

#### 3.2 CONSTRAINTS OF EXISTING SYSTEM

- i. **Labor-Intensive:** A manual Super Market management systems is that they can be highly labor-intensive to operate. They require continuous monitoring to ensure that each transaction is accounted for and that products are maintained at the appropriate stocking levels. It is also more difficult to share inventory information throughout the business, because the lack of computerization makes accessing

inventory records a more cumbersome process. The time spent monitoring inventory levels could be used on more productive activities for the business.

- ii. **Human Error:** A manual Supermarket management system relies heavily on the actions of people, which increases the possibility of human error. People might forget to record a transaction or simply miscount the number of goods. This results in needless additional orders that increase the company's inventory carrying costs and use up precious storage space. Inaccurate physical counts could also result in not ordering enough of a product, meaning the business could run out of a crucial item at the wrong time.
- iii. **Time Wasting:** A manual Supermarket management system has a huge tendency of time wasting as the sales manager could have a lot to tackle while many customers seeks attention and this is really affecting the business.

### 3.3 PROPOSED SYSTEM

To reduce the shortcomings of the existing system there is a need to develop anew system that could upgrade the status of the current system which is manual and slow to the system that will be automatic and fast. The new system should be concern with offering the requirements of the customer and the workers, the system should be reliable, easier, fast, and more informative. It reduces paperwork, manpower requirement, and increases the productivity of the supermarket using this application, on can add, modify, update, save, delete, notify expiration and print details.

### **3.3.1 Features of the Proposed System:**

1. It notifies the user of any product about to expire or already expired
2. It reduces the time and manpower required for management and maintenance of different tasks.
3. It reduces the paper work in existing system; hence it is economical and efficient.
4. With this system customers get quality of service; customers can give feedback which can be stored in the database.

### **3.3.2 Modules:**

1. **Administration module:** This module is handled by an admin who has full control over the system. Admin is required to log into the system with a unique user id and password. They have control over all the modules and features of the system.
2. **Employee module:** Employee can use this module with their user id. They can keep track of items in the supermarket, and they are responsible for recording details of purchases and sales.
3. **Purchase module:** this module stores all the purchase details of the supermarket.
4. **Expiration Monitor:** From here users can view products expiration dates. A sound notification is also enabled for notification purposes
5. **Sales module:** this module stores all the sales details of the supermarket.
6. **Billing module:** with the help of this module, all the payment details based on purchases and sales can be shown.

### **3.3.3 QUALITIES OF THE NEW SYSTEM**

- i. Reduction in processing cost.
- ii. Error reduction.

- iii. Automatic posting
- iv. Improve reporting.
- v. Faster response time.
- vi. Ability to meet user requirements.
- vii. Flexibility
- viii. Reduction in use of the paper
- ix. Reduction in Man Power

### **3.4 DESIGN OF THE PROPOSED SYSTEM**

System Design is one of the tasking sections of the Programming. In this section of the project many previews are going to be seen and we are gradually getting close to the new system. System design is a transition from a user-oriented document to a document oriented to programmers or database personnel. The system design is structured into the following parts:

- ✓ Input Design
- ✓ Output Design
- ✓ Database Design
- ✓ System Architecture

#### **3.4.1 Input Design**

In any organization, institution or any system of operation there is always an input into the system which keeps a system going, if the input is wrong definitely the output will be wrong. This design is meant to handle data about a particular product or stock in the Supermarkets as shown in figure 3.1-figure3.4

**Table3.1:** Table for the input design for staff information

No	Field	Data Type	Length
1	Staff ID	Int	10
2	Staff name	Varchar	10
3	Gender	Varchar	10
4	Age	Int	10
5	Date of birth	Date/Time	10
6	Address	Varchar	20
7	Contact	Int	22
8	Date of entry	Date/Time	10

**Table3.2:** Table for the Input Design for membership information

No	Field	Data Type	Length
1	Membership ID	Int	10
2	Membership name	Varchar	10
3	Gender	varchar	10
4	Date of birth	Date/Time	10
5	Address	varchar	20
6	Contact	Int	20

**Table3.3:** Table for the Input Design to Add Stock

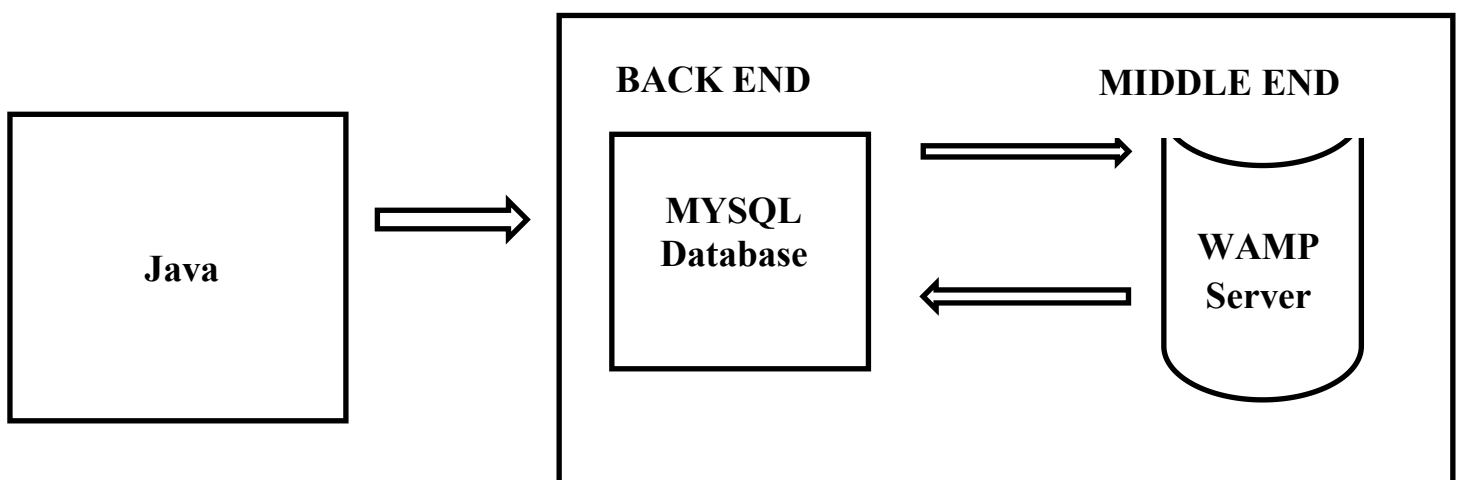
No	Field Name	Data type	Length
1	Product Name	Varchar	15
2	Product Number	Int	2
3	Product Quantity	Int	2
4	Date Received	Date	10
5	Description	Varchar	40
6	Price	Currency	4
7	Stocks	Number	10
8	Production date	date	10
9	Expiry date	date	10

**Table 3.4:** Table for the Input Design to login

No	Field	Data type	Length
1	User name	Varchar	15
2	Password	Varchar	20

### 3.5Architecture of the Proposed System

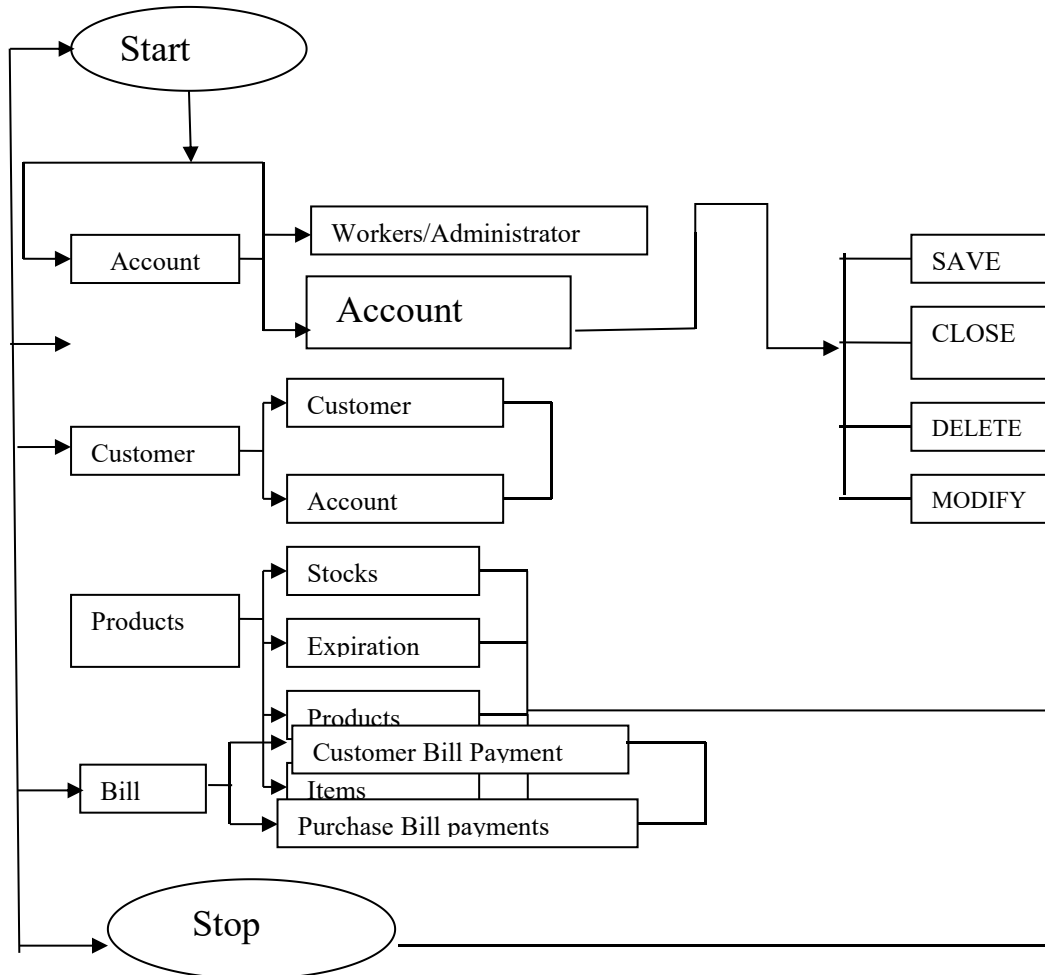
#### 3.5.1Implementing Architecture



**Figure 3.1:** Implementation architecture

### 3.5.2 System Architecture

This is the logical structure that represents the blue print of proposed system in other words; it defines as the algorithm of the software in a concise and logical order. The process design is represented diagrammatically in the form of system architecture as shown below



**Figure 3.2:** System Architecture

### 3.6 DATABASE DESIGN

Database is a file composed of records, each containing fields together with a set of operations it helps in organizing data in a logical order for references. Database contains related data which are organized together in a group of object, table, and file. It can be in form of node. In this project a relational database concept will be used in this appraisal, related data will be store or organize in different table. The Database design of this system is showed in figure 3.9 – 3.12 while the system architecture is shown in the figure 3.33

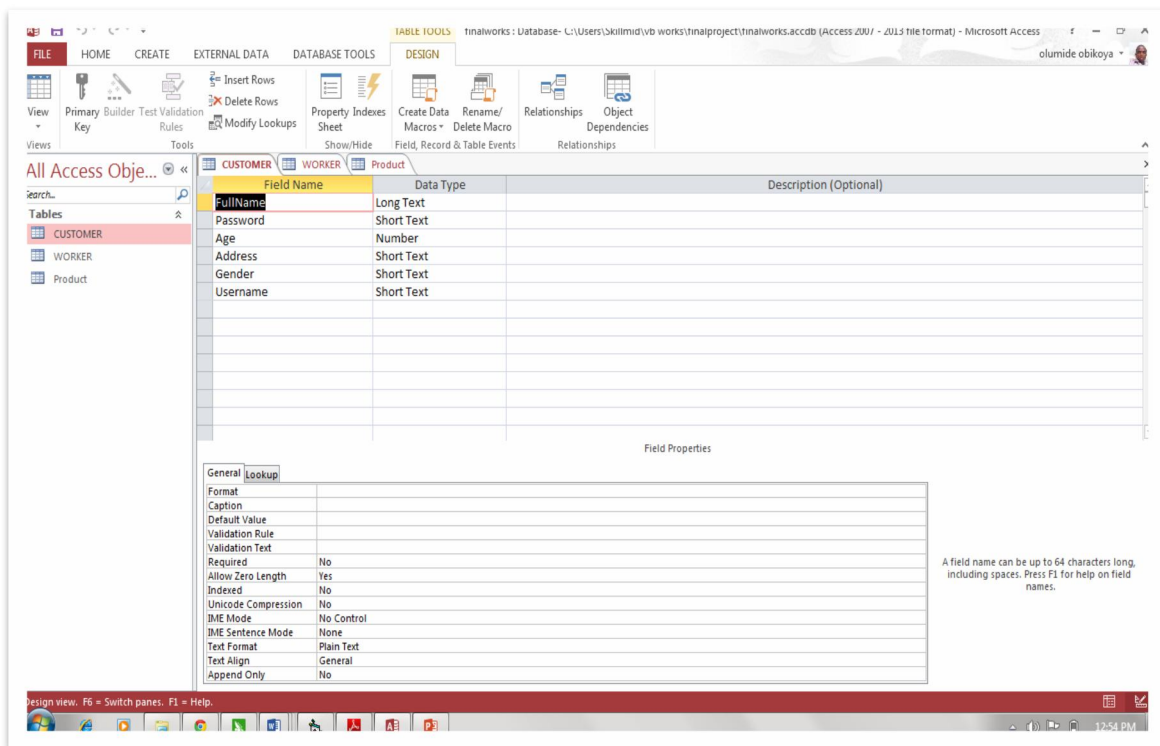


Figure 3.1: Preview for Database Design for Customer

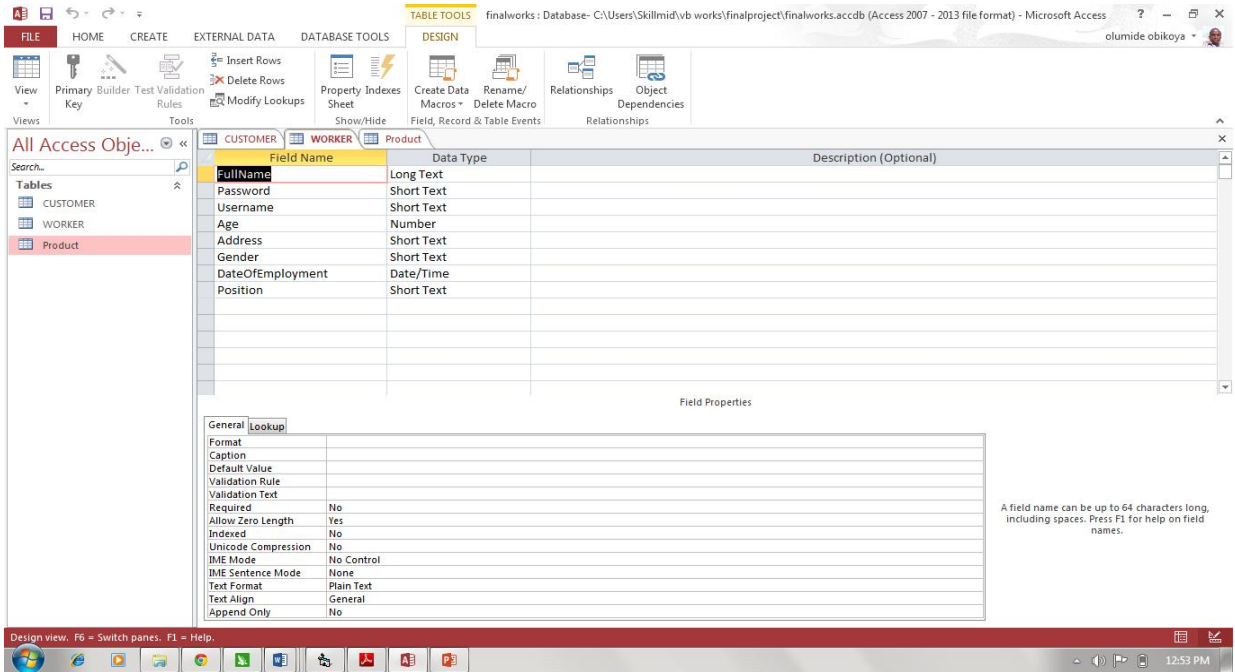


Figure 3.2: Preview for Database Design for Workers

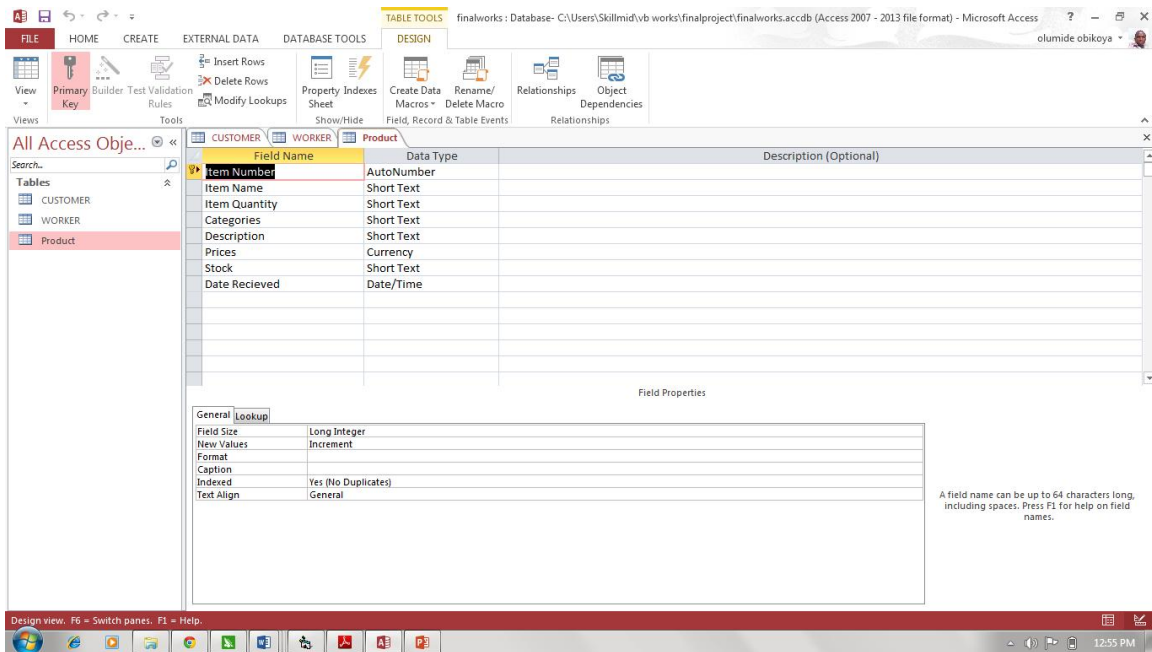


Figure 3.3: Preview for Database Design for Product

The screenshot displays the Microsoft Access interface with a table named 'Product' open in Datasheet View. The table has six columns: ItemCode, ItemName, Categories, Prices, Stock, and Date Recieved. The data is as follows:

ItemCode	ItemName	Categories	Prices	Stock	Date Recieved
10	Peaches	Fresh fruits	150	1500	1/7/2014
100	Rolls	Breads	800	1500	2/7/2014
101	Black pepper	Spices & herbs	700	1500	2/7/2014
102	Garlic	Spices & herbs	700	1500	2/7/2014
103	Red pepper	Spices & herbs	700	1500	2/7/2014
104	Celery Salt	Spices & herbs	700	1500	2/7/2014
105	Ginger	Spices & herbs	700	1500	2/7/2014
106	Onion Powder	Spices & herbs	700	1500	2/7/2014
107	Parsley	Spices & herbs	700	1500	2/7/2014
108	Antibiotic	Medicine	1000	1500	2/7/2014
109	Antidiarrheal	Medicine	1000	1500	2/7/2014
11	Pears	Fresh fruits	150	1500	1/7/2014
110	Antacid	Medicine	1000	1500	2/7/2014
111	Aspirin	Medicine	1000	1500	2/7/2014
112	Pain reliever	Medicine	1000	1500	2/7/2014
113	Prescription pick-up	Medicine	1000	1500	2/7/2014
114	Cold / Flu / Sinus	Medicine	1000	1500	2/7/2014
115	Band-aids / Medical	Medicine	1000	1500	2/7/2014
12	Plums	Fresh fruits	150	1500	1/7/2014
123	Catfish	Seafood	1500	1500	2/7/2014
124	Crab	Seafood	1500	1500	2/7/2014
125	Lobster	Seafood	1500	1500	2/7/2014
126	Mussels	Seafood	1500	1500	2/7/2014
127	Oysters	Seafood	1500	1500	2/7/2014
128	Salmon	Seafood	1500	1500	2/7/2014
130	Tilapia	Seafood	1500	1500	2/7/2014

Figure 3.4: Preview for Database Spreadsheet Design for Product

## **CHAPTER FOUR**

### **SYSTEM IMPLEMENTATION**

#### **4.0 INTRODUCTION**

This chapter deals on the procedures and steps needed for the implementation of the supermarket management system. It evaluates the choice of development environment, the implementation architectures, software testing, documentation and the user manuals of the proposed system. This puts a planned system into action and examine in details the analysis and design of the Skillmid supermarket system. The present chapter discusses the implementation of the system, highlighting the testing exercise and describing some of the main components of the system's Graphical User Interface. It will give an output from programming language and other tools used to develop our system. According to this plan, the activities are to be carried out, discussions made regarding the equipment and resources and the additional equipment has to be acquired to implement the new system.

#### **4.1 SYSTEM REQUIREMENTS**

The requirements for the implementation of this system are as follows;

- I. Software requirement.
- II. Hardware requirement.
- III. Functional requirement (input/output)
- IV. Non-functional requirement

##### **4.1.1 Software Requirements**

Software is the term used to describe all the various types of programs or command, which enable the computer system hardware to functions or operate effectively. Software are prepared by manufacturers of a computer system,

which are used by the computer users to perform different task, such as that of inventory control, word processing, accounting, planning, etc the accurate software suggested for the new system are as follows;

- i. Wamp or XAMP server
- ii. NetBeans IDE
- iii. MySQL database
- iv. Microsoft Excel for printing sales report

#### **4.1.2 Hardware Requirement**

The hardware is the term used to describe all physical component of a computer or communicating system including both mechanical and electronic parts of the computer. The hardware required to run this automated inventory control system is a microcomputer with the following features.

- i. Processor of at least 2 GHZ clock speed
- ii. 2 GB RAM
- iii. Printer for printing reports

The listed configurations are the minimum requirements, but if the configurations are of higher versions, the processing derived will definitely be better and the program will run faster.

#### **4.1.3 Functional Requirements**

- **Input Requirements/Specification**

The input requirement is the information or items needed that will aid the inventory calculations or stocktaking of the items. The input specifications are:

- a. Item Name
- b. Selling Price
- c. Quantity to be Purchase

- d. Stock balance
- e. Selling Price

All the specifications above must be entered for the actual stock taking of items.

- **Output Requirements/Specification**

The output is the expected results from the processing which is the transaction output. The information carries all the data pertaining to the stock items of the such as;

- a) Item name
- b) Quantity
- c) Price
- d) Total amount

All this information will be printed out as stipulated.

#### **4.1.4 Non- Functional Requirements**

- i. Transaction should be completed within seconds.
- ii. There should be backup procedure to maintain records.

## **4.2 CHOICE OF DEVELOPMENT ENVIRONMENT**

The system platform used is windows 7 and above. Also, the IDE (integrated development environment) used is NetBeans 8.2 and the programming language used is Java created by James Gosling in 1994 and publicly released in June 8, 1995. Java is a robust programming language that effectively work with databases. Several reasons ride the choice of using Java for this system, one of which is its extensive portability and use over several web host servers on the internet. Also, Java possesses several inbuilt functions which allow it to integrate well with the widely used and accepted database

storage management system for the MySQL. Due to its wide use, several documentations are available online which will guarantee that materials about any aspect of its use will be easily found.

### **4.3 IMPLEMENTATION**

The new system is designed to be put into efficient use. Here, I will look into the various technical aspects that influenced the successful implementation of this system and determine the effective operation of the system. System implementation follows the approval of the system proposals and its objectives, thus it is to arrive at a satisfactory, implemented, completed, and function evaluated automated system.

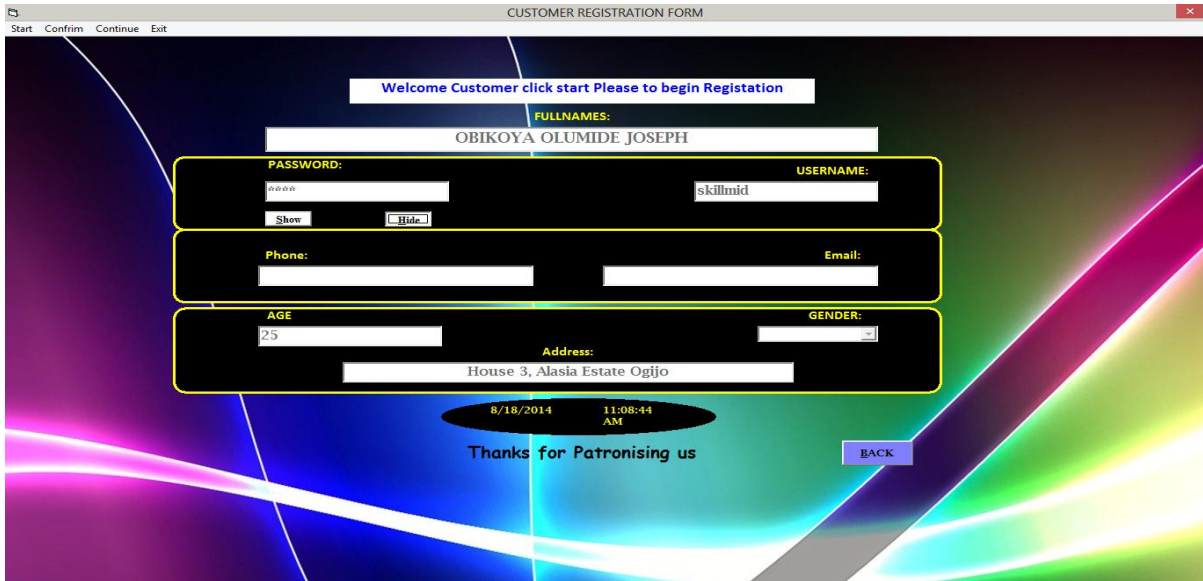
#### **4.3.1 Software Testing**

This software is a high standard program that can weather the storm of technology advancement, it is most needed in all supermarkets and it is an antidote for poor business speed and transaction with record keeping and maintenance, it will be very helpful to clients and customers in the marketing business. All it needs is a computer literate operative to make it work.

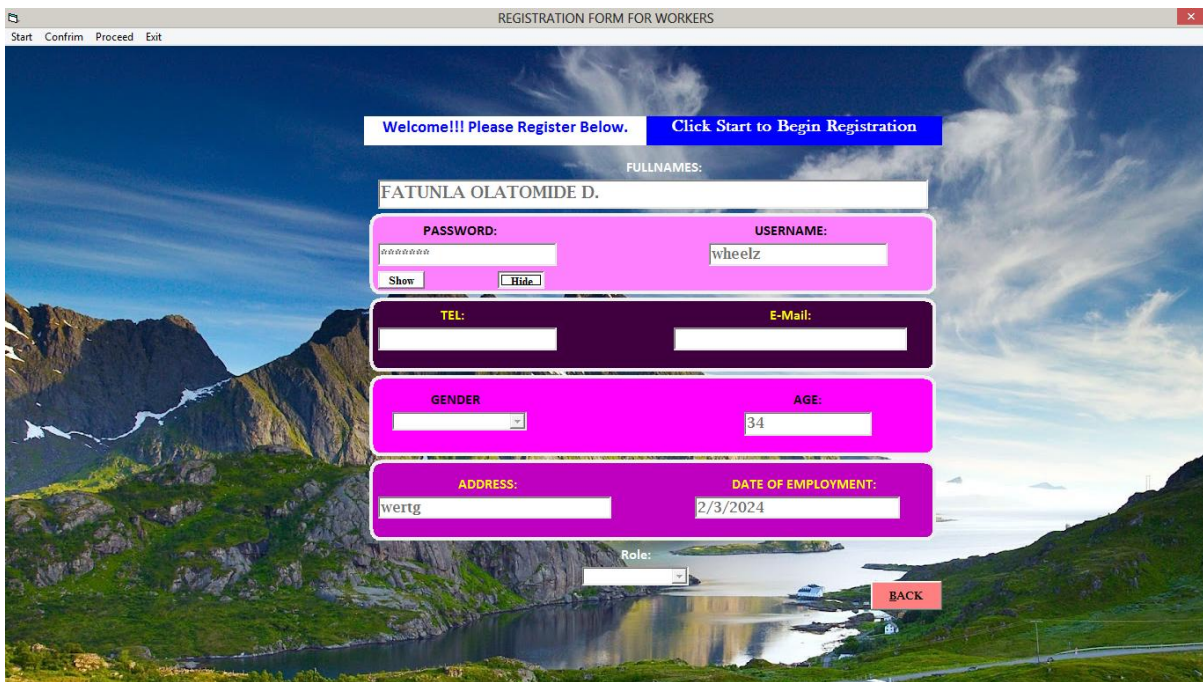
##### **i. Output Design**

In a very competitive world that we are, a good and attractive GUI is needed to make customers and administrators enjoy the services of a system, which would serve as a system to increase productivity in supermarket business below are previews of the output designs.

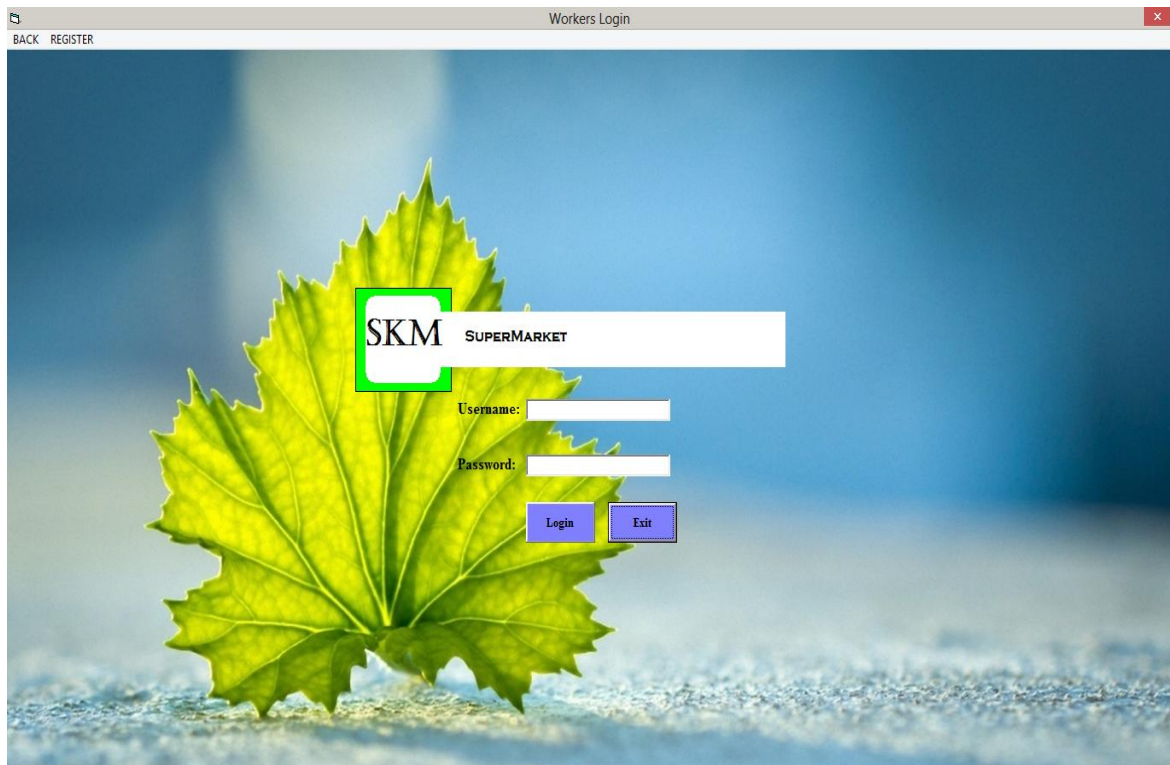
The previews of the output view of the design is shown in figure 3.5 – 3.8



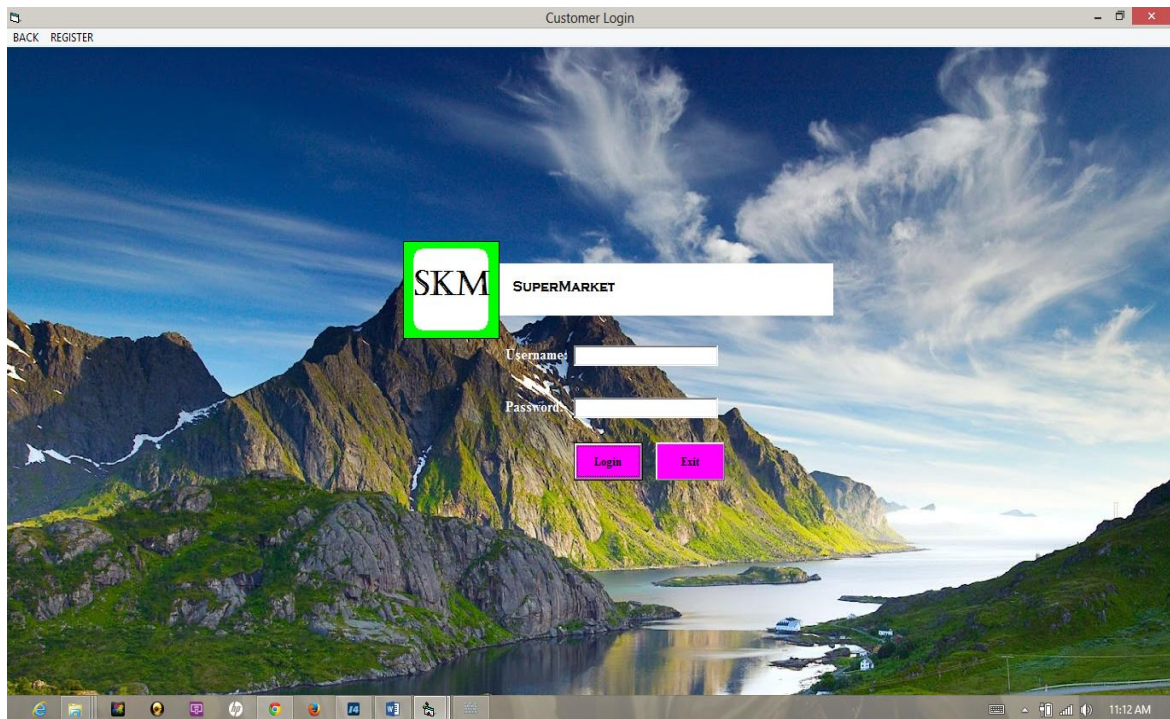
**Figure 4.1: Preview of Output Design to Add New Customer Details**



**Figure 4: Preview of Output Design to Add New Workers Details**



**Figure 4.3: Preview of Output Design for Workers Login**



**Figure 4.4: Preview of Output Design for Customer Login**

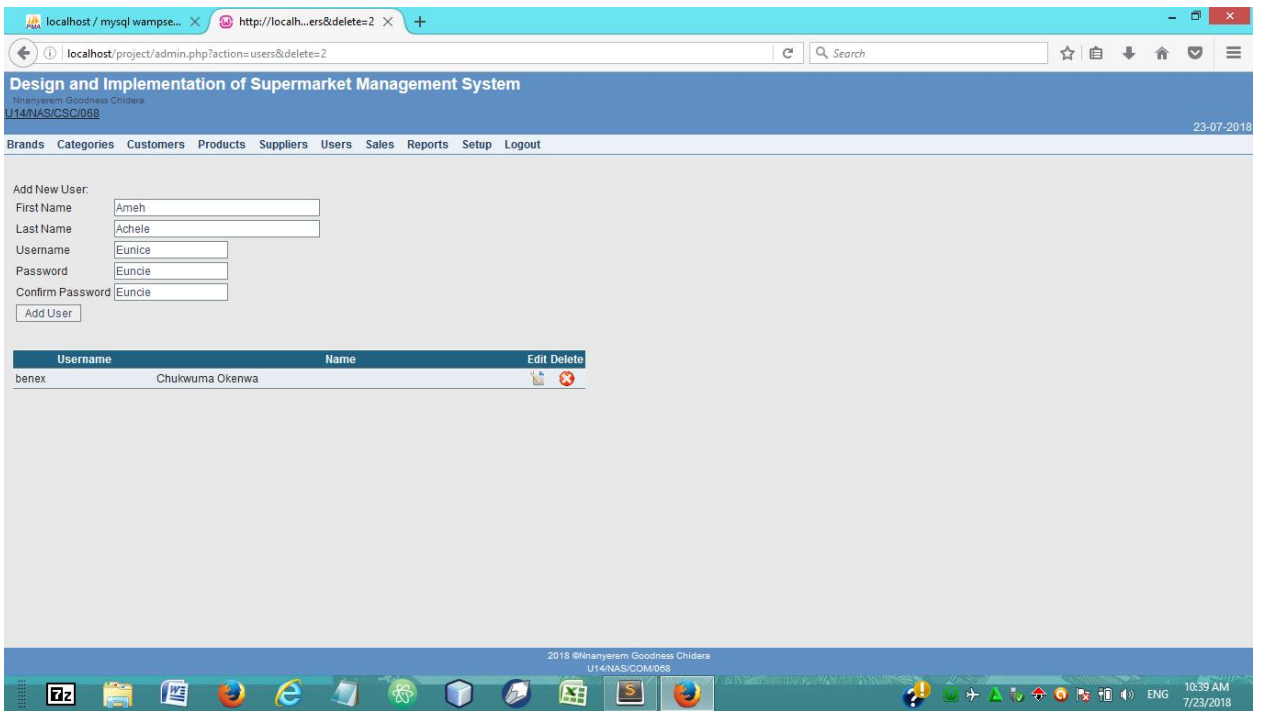


Figure 4.5: To Add New User

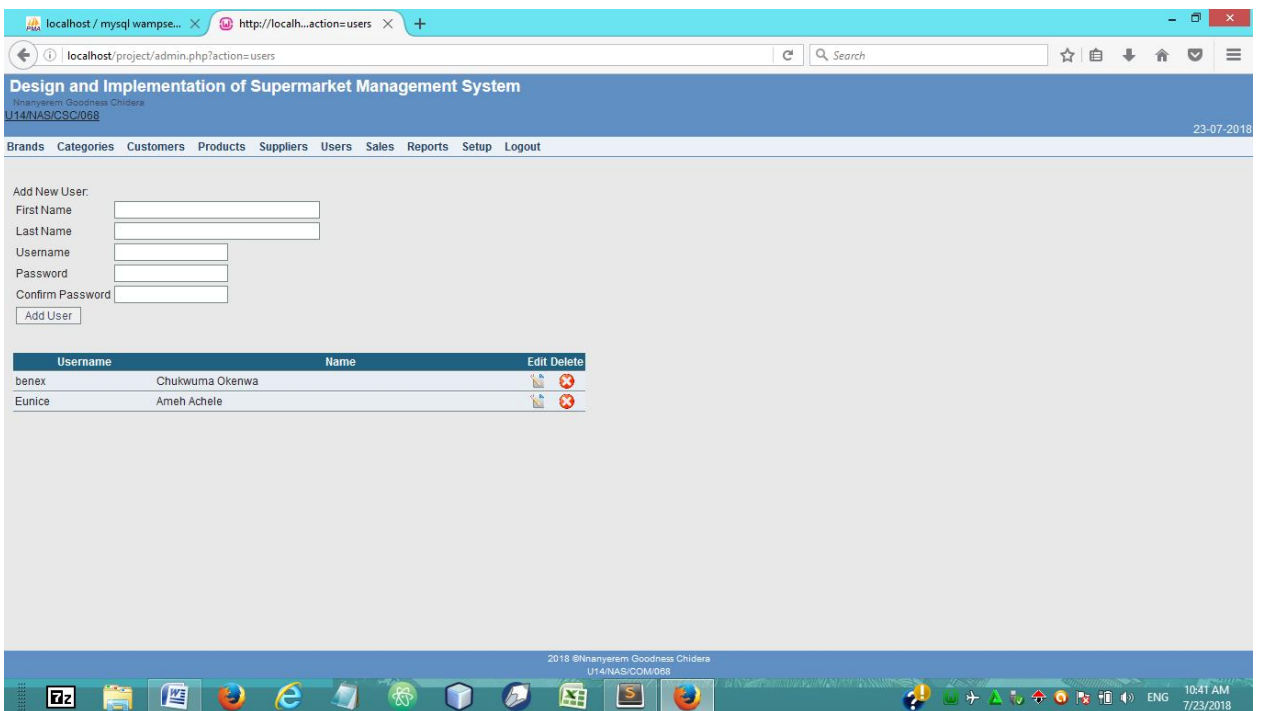


Figure 4.6: Result of the new user added

## 4.4 DOCUMENTATION

**4.4.1 Installation Procedure:** This program is already packaged having its installer package some computer programs can be executed by simply copying them into a folder stored on a computer and executing them but this is quit advanced in nature because of the advancement technology. Other programs are supplied in a form unsuitable for immediate execution and therefore need an installation procedure. Once installed, the program can be executed again and again, without the need to reinstall before each execution.

The following are the step involve in installing Skillmid supermarket management system:

1. Install the general programming language platform.net frame work. Go to [www.Microsoft.com](http://www.Microsoft.com) and install the latest version of .net frame work appropriate for your computer (Windows, Mac, and Linux).
2. Copy the skillmid supermarket database file to your Windows root folder  
*Locating Root Folder.....Click on Computer...Click on Local disk c...navigate to windows.....paste the file.....*
3. Click on Setup
4. Follow the installation step and ignore all Prompted display
5. Go to All Programs
6. Click on Skillmid Supermarket

### 4.4.2 User Manual

The program may be maintained on the ground that the system requires an upgrade. When there is a new field to be added or a new form to be added in other to serve users well. Though it is compiled as standalone software the database can be tempered with but it's advisable that the admin put a password on the file to secure the database from intrusion.

## **THE FOLLOWING PRECAUTION SHOULD BE DONE**

- Ensure that the computer is kept in clean areas.
- System should be kept in cool places.
- Air conditioner is important to reduce room temperature and keep it constant.
- Backup of data is important

## **CHAPTER FIVE**

### **SUMMARY AND CONCLUSION**

#### **5.0 SUMMARY**

This project is on the design and implementation of product expiry alert management system. To effectively drive home the meaning and concept of this system, the project is subdivided into five chapters, the first chapters evaluates the background of the study, stating the problems that the newly proposed system is about to resolve. In furtherance it explicated the significance, and defines the terms and terminologies required for the implementation and use of this system. The second chapter of this project reviewed relevant literatures that reiterated on the necessity of the implementation of management system in the management of supermarkets. Shoprite was used as a case study. The third chapter of this project evaluated the system analysis and design. It laid emphasis on the nature of the manual systems and described the need for the new system and its advantages over the old system. The fourth chapter is based on the system implementation and how to use the system for effective performance. The final chapter summarised and draw conclusion based on the functionality of the system and make possible recommendation on how to enhance the management of supermarkets in Nigeria.

#### **5.1 CONCLUSION**

In conclusion, Product Expiry Alert Management System has to do with making appropriate effort to stop the rising problem to all manual supermarket operation in order to enhance the operation of such supermarket. In this project, the software or system that can be used to aid all supermarkets that are still operating manually have been successfully developed. The software can be implementing in all types of supermarket as mentioned in the second chapter.

The software has a large memory of storing all the goods in the supermarket and also keeping record it is highly effective and accurate.

## **5.2 RECOMMENDATION**

In the development of this management system, I will recommend that if there is going to be any modification the new writer should endeavor to improve on the limitations such as inclusion of the billing and printing to further increase the system architecture and to satisfy users need more for writing of the source code, latest PHP version should be used and Microsoft access for the database. There are some limitations during the development of this supermarket management system that will require improvement as stated in previous chapter writer should put them in mind and face it as a challenge and not a problem.

## **5.3 LIMITATION OF STUDY**

The major limitation experienced during this research process was during the actual software development. Java source codes required for the display of notifications was difficult to obtain. This made me use the available but less preferred codes for development.

Also, due to time and basic factors like unstable electricity, poor networks, unavailability of concrete business idea and many more this research has been limited to item details registration, registration histories, product expiration monitor and notification display.

A lot of challenges surfaced during the development of this incredible application though it tried stopping this project but the doggedness and consistency of the writer was in match with the challenge.

The following are some of the problems or challenges encountered.

- Expensive internet facility.
- Inadequacy of power supply and many more.
- Time factor on research to get a way of packaging the application

successively.

#### **5.4 FURTHER RESEARCH**

In the future, the following components can be added to the system in order to improve the effectiveness and efficiency of the system, which includes:

1. An advanced password system that will be embedded into all login pages to increase the security of the system.
2. A good Printing module should be included.
3. A good internet backup should be automated after everyday sales.
4. Internet Transactions should be allowed.

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## APPENDIX

### CODE FOR: ADMIN.PHP

```
<?php
include("config.php");
include("languages/" . POS_DEFAULT_LANGUAGE . ".php");
require_once("database.php");
$db = new database($dbhost,$dbuser,$dbpassword,$dbname);
if(isset($_GET['action']) && $_GET['action']=="logout"){
session_destroy();
header("Location:admin.php");
}
if(isset($_POST['adminlogin'])){
if($adminname == trim($_POST['adminname']) &&
$adminpassword == md5(trim($_POST['adminpassword']))) {
$_SESSION['admin'] = trim($_POST['adminname']);
$_SESSION['user'] = trim($_POST['adminname']);
}
}
?>
<html>
<head>
<title></title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<link href="pos.css" rel="StyleSheet" type="text/css">
<script language="javascript" src="general.js"></script>
</head>
<body>
<table width="100%" height="100%" cellspacing="0" cellpadding="0">
<TR height="20"><TD>
<?php
require_once("header.php");
?>
</TD></TR>
<TR><TD valign="top">
<?php
if(!isset($_SESSION['admin'])){
?>
<br><br>
<center><b class="blt"><?php echo LOGIN_WELCOM; ?></b></center>
<form action="admin.php?action=login" method="POST" class="loginform">
<table align="center" class="tlogin">
```



```

if(frm.firstname.value==" || frm.lastname.value==" || frm.username.value=="
|| frm.password.value==" || frm.password.value !=
frm.confirm_password.value){
alert("Error, verify fields!");
return false;
}
else return true;
}
function validate_edit_form(frm){
if(frm.firstname.value==" || frm.lastname.value==" || frm.username.value=="
|| frm.password.value != frm.confirm_password.value){
alert("Error, verify fields!");
return false;
}
else return true;
}
</script>
<?php
if(isset($_GET['edit'])){
$sql = "select * from users where id=" .$_GET['edit'];
$result = $db->query($sql);
$row = mysql_fetch_row($result);
?>
<form action="admin.php?action=users" onsubmit="return
validate_edit_form(this);" method="POST">
<input type="hidden" name="user_id" value="<?php echo $_GET['edit']; ?>">
<table>
<TR><TD><?php echo TXT_FIRSTNAME; ?></TD><TD><input type="text"
name="firstname" size="40" value="<?php echo
htmlspecialchars($row[1]); ?>"></TD></TR>
<TR><TD><?php echo TXT_LASTNAME; ?></TD><TD><input type="text"
name="lastname" size="40" value="<?php echo
htmlspecialchars($row[2]); ?>"></TD></TR>
<TR><TD><?php echo TXT_USERNAME; ?></TD><TD><input type="text"
name="username" value="<?php echo
htmlspecialchars($row[3]); ?>"></TD></TR>
<TR><TD><?php echo LOGIN_PASSWORD; ?></TD><TD><input
type="text" name="password">(*)</TD></TR>
<TR><TD><?php echo LOGIN_CONFIRM_PASSWORD; ?></TD><TD><input
name="confirm_password"></TD></TR>
<TR><TD colspan="2"><small>(*)<?php echo
EDIT_PASSWORD_INFO; ?></small></TD></TR>

```

```

<TR><TD colspan="2"><input type="submit" name="edituser" value="<?php
echo TXT_SAVE ?>"></TD></TR>
</table>
</form>
<?php
}
else{
?>
<form          action="admin.php?action=users"          onsubmit="return
validate_form(this);" method="POST">
<?php echo ADD_NEW_USER; ?><br>
<table>
<TR><TD><?php echo TXT_FIRSTNAME; ?></TD><TD><input type="text"
name="firstname" size="40"></TD></TR>
<TR><TD><?php echo TXT_LASTNAME; ?></TD><TD><input type="text"
name="lastname" size="40"></TD></TR>
<TR><TD><?php echo TXT_USERNAME; ?></TD><TD><input type="text"
name="username"></TD></TR>
<TR><TD><?php echo LOGIN_PASSWORD; ?></TD><TD><input
type="text" name="password"></TD></TR>
<TR><TD><?php echo LOGIN_CONFIRM_PASSWORD; ?></TD><TD><input
type="text" name="confirm_password"></TD></TR>
<TR><TD colspan="2"><input type="submit" name="submituser"
value="<?php echo USER_SUBMIT ?>"></TD></TR>
</table>
</form>
<br>
<script language="JavaScript">
function delete_user(user){
op = confirm("<?php echo CONFIRM_DELETE_USER; ?>");
if(op)document.location.href="admin.php?action=users&delete="+user;
}
</script>
<table cellspacing="0">
<TR><TH width="150"><?php echo TXT_USERNAME; ?></TH><TH
width="400"><?php echo TXT_NAME; ?></TH><TH><?php echo
TXT_EDIT; ?></TH><TH><?php echo TXT_DELETE; ?></TH></TR>
<?php
$sql = "select * from users";
$result = $db->query($sql);
while($row = mysql_fetch_row($result)){

```

```

?><TR><TD
                                class="tvalue"><?php
                                echo
htmlspecialchars($row[3]); ?></TD><TD
                                class="tvalue"><?php
                                echo
htmlspecialchars($row[1] ." " . $row[2]); ?></TD><TD
                                class="tvalue"
                                align="center"><a
                                href="admin.php?action=users&edit=<?php
                                echo
                                $row[0]; ?>"></a></TD><TD
                                class="tvalue"
                                align="center"><a
                                href="javascript:delete_user(<?php
                                echo
                                $row[0]; ?>)"></a></TD></TR><?php
}
?>
<TR><TD></TD></TR>
</table>
<?php
}
?>
</div>

```

### CODE FOR: SUPPLIERS.PHP

```

<?php
if(!isset($_SESSION['admin'])) {
header("Location:admin.php");
}
if(isset($_POST['submitsupplier'])) {
$sql = "insert into suppliers(supplier, address, city, pcode, state, country,
phone_number,
                                contact,
                                email,
                                comments)
values('".$_POST['supplier']."' .','.'" . $_POST['address'] .','.'" . $_POST['city'] .','.'" .
$_POST['pcode'] .','.'" . $_POST['state'] .','.'" . $_POST['country'] .','.'" . $_POST['
phone_number'] .','.'" . $_POST['contact'] .','.'" . $_POST['email'] .','.'" . $_POST['
comments'] .'")";
$db->query($sql);
}
if(isset($_POST['editsupplier'])) {
$sql = "update suppliers set supplier='".$_POST['supplier'] .','.'" .
address='".$_POST['address'] .','.'" . city='".$_POST['city'] .','.'" .
pcode='".$_POST['pcode'] .','.'" . state='".$_POST['state'] .','.'" .
country='".$_POST['country'] .','.'" .
phone_number='".$_POST['phone_number'] .','.'" .
contact='".$_POST['contact'] .','.'" . email='".$_POST['email'] .','.'" .
comments='".$_POST['comments'] .'" where id='".$_POST['supplier_id'];
$db->query($sql);
}
if(isset($_GET['delete'])) {
$db->query("delete from suppliers where id='".$_GET['delete'];");
}
?>

```

```

<script language="JavaScript">
function validate_supplier(frm){
    if(frm.supplier.value==""){
        alert("<?php echo ERROR_SUPPLIER_SUBMIT; ?>");
        return false;
    }
    else return true;
}
function delete_supplier(supplier){
op = confirm("<?php echo CONFIRM_DELETE_SUPPLIER; ?>");
if(op)document.location.href="admin.php?action=suppliers&delete="+supplier;
}
</script>
<div class="admin_content">
<?php
if(isset($_GET['add_supplier']))){
?>
<form          action="admin.php?action=suppliers"          method="POST"
onsubmit="return validate_supplier(this);">
<table>
<TR><TD><?php echo TXT_SUPPLIER; ?></TD><TD><input type="text"
size="60" name="supplier"></TD></TR>
<TR><TD><?php echo TXT_ADDRESS; ?></TD><TD><input type="text"
size="60" name="address"></TD></TR>
<TR><TD><?php echo TXT_CITY; ?></TD><TD><input type="text"
size="40" name="city"></TD></TR>
<TR><TD><?php echo TXT_PCODE; ?></TD><TD><input type="text"
size="20" name="pcode"></TD></TR>
<TR><TD><?php echo TXT_STATE; ?></TD><TD><input type="text"
size="40" name="state"></TD></TR>
<TR><TD><?php echo TXT_COUNTRY; ?></TD><TD><input type="text"
size="50" name="country"></TD></TR>
<TR><TD><?php echo TXT_PHONE; ?></TD><TD><input type="text"
size="20" name="phone_number"></TD></TR>
<TR><TD><?php echo TXT_CONTACT; ?></TD><TD><input type="text"
size="60" name="contact"></TD></TR>
<TR><TD><?php echo TXT_EMAIL; ?></TD><TD><input type="text"
size="60" name="email"></TD></TR>
<TR><TD
                valign="top"><?php
TXT_COMMENTS; ?></TD><TD><textarea rows="5" cols="50"
name="comments"></textarea></TD></TR>
<TR><TD colspan="2"><input type="submit" name="submitsupplier"
value="<?php echo SUPPLIER_SUBMIT; ?>"></TD></TR>

```

```

</table>
</form>
<?php
}
//Edit a supplier
if(isset($_GET['edit_supplier'])){
$result = $db->query("select * from suppliers where
id=" .$_GET['edit_supplier']);
$row = mysql_fetch_row($result);
?>
<form action="admin.php?action=suppliers" method="POST"
onsubmit="return validate_supplier(this);">
<input type="hidden" name="supplier_id" value="<?php echo $row[0]; ?>">
<table>
<TR><TD><?php echo TXT_SUPPLIER; ?></TD><TD><input type="text"
size="60" name="supplier" value="<?php echo
htmlspecialchars($row[1]); ?>"></TD></TR>
<TR><TD><?php echo TXT_ADDRESS; ?></TD><TD><input type="text"
size="60" name="address" value="<?php echo
htmlspecialchars($row[2]); ?>"></TD></TR>
<TR><TD><?php echo TXT_CITY; ?></TD><TD><input type="text"
size="40" name="city" value="<?php echo
htmlspecialchars($row[3]); ?>"></TD></TR>
<TR><TD><?php echo TXT_PCODE; ?></TD><TD><input type="text"
size="20" name="pcode" value="<?php echo
htmlspecialchars($row[4]); ?>"></TD></TR>
<TR><TD><?php echo TXT_STATE; ?></TD><TD><input type="text"
size="40" name="state" value="<?php echo
htmlspecialchars($row[5]); ?>"></TD></TR>
<TR><TD><?php echo TXT_COUNTRY; ?></TD><TD><input type="text"
size="50" name="country" value="<?php echo
htmlspecialchars($row[6]); ?>"></TD></TR>
<TR><TD><?php echo TXT_PHONE; ?></TD><TD><input type="text"
size="20" name="phone_number" value="<?php echo
htmlspecialchars($row[7]); ?>"></TD></TR>
<TR><TD><?php echo TXT_CONTACT; ?></TD><TD><input type="text"
size="60" name="contact" value="<?php echo
htmlspecialchars($row[8]); ?>"></TD></TR>
<TR><TD><?php echo TXT_EMAIL; ?></TD><TD><input type="text"
size="60" name="email" value="<?php echo
htmlspecialchars($row[9]); ?>"></TD></TR>
<TR><TD
valign="top"><?php echo
TXT_COMMENTS; ?></TD><TD><textarea rows="5" cols="50"

```

```

name="comments"><?php
htmlspecialchars($row[10]); ?></textarea></TD></TR>
<TR><TD colspan="2"><input type="submit" name="editsupplier"
value="<?php echo TXT_SAVE; ?>"></TD></TR>
</table>
</form>
<?php
}
if(!isset($_GET['edit_supplier']) && !isset($_GET['add_supplier'])) {
?>
<input type="button" value="<?php echo ADD_NEW_SUPPLIER; ?>"
onclick="document.location.href='admin.php?action=suppliers&#038;add_supplier'"><br><br>
<table cellpadding="0">
<TR><TH width="250"><?php echo TXT_SUPPLIER; ?></TH><TH
width="60"><?php echo TXT_PHONE; ?></TH><TH width="60"
align="left"><?php echo TXT_CONTACT; ?></TH><TH width="250"
align="left"><?php echo TXT_EMAIL; ?></TH><TH><? echo
TXT_EDIT; ?></TH><TH><? echo TXT_DELETE; ?></TH></TR>
<?php
$result = $db->query("select id,supplier,phone_number,contact,email from
suppliers");
while($row = mysql_fetch_row($result)){
?>
<TR><TD class="tvalue"><?php echo
htmlspecialchars($row[1]); ?></TD><TD class="tvalue"><?php echo
htmlspecialchars($row[2]); ?>&nbsp;</TD><TD class="tvalue"><?php echo
htmlspecialchars($row[3]); ?>&nbsp;</TD><TD class="tvalue"><?php echo
htmlspecialchars($row[4]); ?>&nbsp;</TD><TD class="tvalue"
align="center"><a
href="admin.php?action=suppliers&#038;edit_supplier=<?php echo
$row[0]; ?>"></a></TD><TD class="tvalue"
align="center"><a href="javascript:delete_supplier(<?php echo
$row[0]; ?>)"></a></TD></TR>
<?php
}
?>
</table>
<?php
}
?>
</div>

```

**CODE FOR: DATABASE.PHP**

```

<?php
<?php
class database{
var $conn = null;
function database($server, $username, $password, $database){
$this->conn = mysql_connect($server, $username, $password);
if ($this->conn) mysql_select_db($database);
}
function close() {
mysql_close($this->conn);
}
function query($query) {
$result = mysql_query($query, $this->conn);
return $result;
}
function getConnection(){
return $this->conn;
}
}
?>

```

### CODE FOR: CLINITE.PHP

```

<?php
if(!isset($_SESSION['admin'])){
header("Location:admin.php");
}
if(isset($_POST['submitcustomer'])){
$sql = "insert into customers(first_name, last_name, account_number, address,
city, pcode, state, country, phone_number, email, comments)
values('".$_POST['firstname']."' ,".$_POST['lastname']."' ,".$_POST['account
_number']."' ,".$_POST['address']."' ,".$_POST['city']."' ,".$_POST['pcode]' .
" ,".$_POST['state']."' ,".$_POST['country']."' ,".$_POST['phone_number']."' ,
" ".$_POST['email']."' ,".$_POST['comments'] .")";
$db->query($sql);
}
//Edit customer data
if(isset($_POST['editcustomer'])){
$sql = "update customers set first_name='".$_POST['firstname']."' ,
last_name='".$_POST['lastname']."' ,
account_number='".$_POST['account_number']."' ,
address='".$_POST['address']."' , city='".$_POST['city']."' ,
pcode='".$_POST['pcode']."' , state='".$_POST['state']."' ,
country='".$_POST['country']."' ,

```

```

phone_number="" .$_POST['phone_number'] ."', email="" .$_POST['email'] ."',
comments="" .$_POST['comments'] ." where id="" .$_POST['customer_id'];
$db->query($sql);
}
//Delete a customer
if(isset($_GET['delete'])){
$db->query("delete from customers where id="" .$_GET['delete']);
}
?>
<div class="admin_content">
<?php
if(isset($_GET['add_customer'])){
?>
<form action="admin.php?action=clients" method="POST">
<table>
<TR><TD><?php echo TXT_FIRSTNAME; ?></TD><TD><input type="text"
name="firstname" size="40"></TD></TR>
<TR><TD><?php echo TXT_LASTNAME; ?></TD><TD><input type="text"
name="lastname" size="40"></TD></TR>
<TR><TD><?php echo TXT_ACCOUNT_NUMBER; ?></TD><TD><input
type="text" name="account_number" size="30"></TD></TR>
<TR><TD><?php echo TXT_ADDRESS; ?></TD><TD><input type="text"
size="60" name="address"></TD></TR>
<TR><TD><?php echo TXT_CITY; ?></TD><TD><input type="text"
size="40" name="city"></TD></TR>
<TR><TD><?php echo TXT_PCODE; ?></TD><TD><input type="text"
size="20" name="pcode"></TD></TR>
<TR><TD><?php echo TXT_STATE; ?></TD><TD><input type="text"
size="40" name="state"></TD></TR>
<TR><TD><?php echo TXT_COUNTRY; ?></TD><TD><input type="text"
size="50" name="country"></TD></TR>
<TR><TD><?php echo TXT_PHONE; ?></TD><TD><input type="text"
size="20" name="phone_number"></TD></TR>
<TR><TD><?php echo TXT_EMAIL; ?></TD><TD><input type="text"
size="60" name="email"></TD></TR>
<TR><TD
                valign="top"><?php
TXT_COMMENTS; ?></TD><TD><textarea
                rows="5"
                cols="50"
                name="comments"></textarea></TD></TR>
<TR><TD colspan="2"><input type="submit" name="submitcustomer"
value=""<?php echo CUSTOMER_SUBMIT; ?>></TD></TR>
</table>
</form>
<?php

```

```

}
if(isset($_GET['edit_customer'])) {
$result = $db->query("select * from customers where
id=" . $_GET['edit_customer']);
$row = mysql_fetch_row($result);
?>
<form action="admin.php?action=clients" method="POST">
<input type="hidden" name="customer_id" value="<?php echo $row[0]; ?>">
<table>
<TR><TD><?php echo TXT_FIRSTNAME; ?></TD><TD><input type="text"
name="firstname" size="40" value="<?php echo
htmlspecialchars($row[1]); ?>"></TD></TR>
<TR><TD><?php echo TXT_LASTNAME; ?></TD><TD><input type="text"
name="lastname" size="40" value="<?php echo
htmlspecialchars($row[2]); ?>"></TD></TR>
<TR><TD><?php echo TXT_ACCOUNT_NUMBER; ?></TD><TD><input
type="text" name="account_number" size="30" value="<?php echo
htmlspecialchars($row[3]); ?>"></TD></TR>
<TR><TD><?php echo TXT_ADDRESS; ?></TD><TD><input type="text"
size="60" name="address" value="<?php echo
htmlspecialchars($row[4]); ?>"></TD></TR>
<TR><TD><?php echo TXT_CITY; ?></TD><TD><input type="text"
size="40" name="city" value="<?php echo
htmlspecialchars($row[5]); ?>"></TD></TR>
<TR><TD><?php echo TXT_PCODE; ?></TD><TD><input type="text"
size="20" name="pcode" value="<?php echo
htmlspecialchars($row[6]); ?>"></TD></TR>
<TR><TD><?php echo TXT_STATE; ?></TD><TD><input type="text"
size="40" name="state" value="<?php echo
htmlspecialchars($row[7]); ?>"></TD></TR>
<TR><TD><?php echo TXT_COUNTRY; ?></TD><TD><input type="text"
size="50" name="country" value="<?php echo
htmlspecialchars($row[8]); ?>"></TD></TR>
<TR><TD><?php echo TXT_PHONE; ?></TD><TD><input type="text"
size="20" name="phone_number" value="<?php echo
htmlspecialchars($row[9]); ?>"></TD></TR>
<TR><TD><?php echo TXT_EMAIL; ?></TD><TD><input type="text"
size="60" name="email" value="<?php echo
htmlspecialchars($row[10]); ?>"></TD></TR>
<TR><TD
valign="top"><?php echo
TXT_COMMENTS; ?></TD><TD><textarea rows="5" cols="50"
name="comments"><?php echo
htmlspecialchars($row[11]); ?></textarea></TD></TR>

```

```

<TR><TD colspan="2"><input type="submit" name="editcustomer"
value="<?php echo TXT_SAVE; ?>"></TD></TR>
</table>
</form>
<?php
}
if(!isset($_GET['add_customer']) && !isset($_GET['edit_customer'])) {
?>
<script language="JavaScript">
function delete_customer(customer){
op = confirm("<?php echo CONFIRM_DELETE_CUSTOMER; ?>");
if(op)document.location.href="admin.php?action=clients&delete="+customer;
}
</script>
<input type="button" value="<?php echo ADD_NEW_CUSTOMER; ?>"
onclick="document.location.href='admin.php?action=clients&#038;add_custom
er'"><br><br>
<table cellpadding="0">
<TR><TH width="250" colspan="2"><?php echo TXT_NAME; ?></TH><TH
width="60"><?php echo TXT_PHONE; ?></TH><TH width="250"
align="left"><?php echo TXT_EMAIL; ?></TH><TH><?php echo
TXT_EDIT; ?></TH><TH><?php echo TXT_DELETE; ?></TH></TR>
<?php
$result = $db->query("select * from customers");
while($row = mysql_fetch_row($result)){
?>
<TR><TD class="tvalue"><?php echo $row[0]; ?></TD><TD
class="tvalue"><?php echo htmlspecialchars($row[1]
"
.$row[2]); ?></TD><TD class="tvalue"><?php echo
htmlspecialchars($row[9]); ?>&nbsp;</TD><TD class="tvalue"><?php echo
htmlspecialchars($row[10]); ?>&nbsp;</TD><TD class="tvalue"
align="center"><A
href="admin.php?action=clients&#038;edit_customer=<?php echo
$row[0]; ?>"></A></TD><TD class="tvalue"
align="center"><A href="javascript:delete_customer(<?php echo
$row[0]; ?>)"></A></TD></TR>
<?php
}
?>
</table>
j

```