

CHRISTIAN SERVICE UNIVERSITY COLLEGE
COMPUTER SCIENCE DEPARTMENT

TOPIC:

AN E-COMMERCE WEBSITE FOR THE SALE OF KENTE CLOTHES

PRESENTED

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STATEMENT OF AUTHENTICITY

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Supervisor's Declaration

I hereby declare that the Preparation and Presentation of this Dissertation Were Supervised In Accordance With the Guidelines on Supervision Laid down by Christian Service University College.

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Abstract

An electronic commerce is said to lack behind the rate of Internet growth due to lack of confidence users have in online transactions. During our preliminary study we found out that our client's customers complain of poor user-friendliness, cases of fraudulence, time consuming process during transactions, difficulty in identifying a particular product and many others. These problems were occurring because Appau Kente Solutions Limited do not have a website that sell one particular product. In solving this problem, Appau Kente Solutions decided to develop an online store where only one particular product we be sold and a central database was built to keep in check of all various activities such as transactions, payments, customer comments, personalization and among others. The results of the project was successful and at the end problems which were reported earlier by customers were resolved. Appau Kente Solutions Limited benefited in terms of profit since cases of fraud and theft on the part of some workers in the company and other business partners.

Acknowledgement

We wish to express our intense gratitude to the Almighty God for the strength, wisdom, knowledge and grace He has granted us through the development and compilation of this ecommerce site.

Our next appreciations go to our supervisor Mr Samuel King Opoku for his immense supervision and guidance in the course of the study.

Moreover, we thank the entire teaching staff for their support and advice that took us through our four years of study. We also thank the authors whose handy works helped us in the writing of this case study.

May the good Lord Richly Sanctify Everyone.

Dedication

This book is dedicated to the Almighty God for seeing us through to this far and our parents, siblings and all loved ones.

CHAPTER ONE

INTRODUCTION

1.1 Background of study

Appau Kente Solutions Limited is a company which sells kente clothes and accessories in Kumasi, Ghana. The company used to sell kente clothes to their customers using other ecommerce sites such as Olx, Tonaton, and other social platform such Facebook, and many others.

The company wishes to have an online store in adding up to its existing brick-and-mortar.

Online shopping is a method in which goods and services are traded between the vender and customer without a middle-man using Internet.

The project work is an endeavor in delivering the importance of an electronic shopping to users and customers who have accepted to transact with Appau Kente Solutions Limited.

The meaning of commerce can be define as an exchange of transaction done between two or more individuals where a product or an item is sold or bought or a service delivered or taken.

When the 'E' is added in front of commerce with a hyphen then we can have e-commerce when 'E' means digital or electronic while's commerce comprises of allocation of transaction of a service help between a vendor and receiver.

The meaning of above explanation implies that when a transaction took place between a seller and buyer over the Internet, Extranet and Intranet then it is said to be an electronic commerce. The major advantage of electronic commerce is that, transaction process takes place at a fast rate.

(Kaur, 2018)

The Akan cloth, Kente called **nwentoma** is a kind of silk and cotton material which is made of linked cloth of strips and is an innate to the Akan ethnic group of West Ghana. The word kente originated from the word **kenten**, meaning a basket in Akan dialect Asante.

Some of the types of kente clothes includes;

Adwinasa, Obaakofo Mmu Man, Sika Futoro, Abusua Ye Dom, Kyeretwie, Wofro Dua Paa Na Yepia Wo, Nyankoton and many others.

Some kente patterns and their meaning

ADWINASA



Factual gist “**all elegances are used.**”

The old people tell us that the innovator of this cloth decided to weave an exceptional to satisfy the King of Asante. In his strength, decided to use all the themes which was famous to weavers in weaving a single cloth.

At the end the cloth was seen as a top class and admirable cloth which was woven to only Kings in Asante.

It demonstrates CROWN HEADS, ELEGANCE, CREATIVE TALENT, WEALTH, RELEVANCE and HUGE PERFORMANCE.

OBAAKOFO MMU MAN



Factual significance “**A national is govern by all but not an individual.**”

The governance system pertaining to Akan tradition is based on hands-on fairness. The four-sided figure comprising of nine denote MPUANKRON (nine tufts of hair) a celebrated hair style made by noble officials found close to the King who assist in decision making.

The former president Nkrumah was having a wife named “Fathia” and this cloth was said to name after her that is FATHIA FATA NKRUMA.

This demonstrate SHARING EQUALITY, NOTICE ALONGSIDE OPPRESSIVE GOVERNANCE.

SIKA FUTURO



Factual sense “**gold powder.**”

In the olden days, gold dust was the main item of exchange for goods and services in Asante Kingdom and it was highly recognized as a sign of affluence and fortune. Colors such as yellow, orange, red imitate graphical features of gold dust.

It represents TREASURE, ROYALS, CLASS, DIVINE CLEANLINESS and MORAL ATTAINMENT.

ABUSUA YE DOM



Factual connotation “**the extended family is a force.**”

People of Asante consider the extended family is the pillar among the family types. The family people are to help and assist each other in terms of provision of goods and divine welfare, community safety and defence to all associates. The woven demonstrates rejoice and support which is normally found among extended family.

Having plenty distinctions as far as shades are concern denotes TIGHT FAMILY TIE, IMPROTANCE OF HARMONY, COLLABORATIVE EFFORT, DUTY and TEAMWORK.

EMMA ADA



Factual implication “**it has not happened before**” or “**it has no precedence.**”

Nana Kwasi Afranie of Bonwire, a sole weaver for Asantehene made us it known that this cloth was made and named by an Asante King who was amazed by its exceptionalities in terms of

arrangement and said “Eyi de emma da” denoting, “a superior one.” Kings are said to wear this cloth debunk from any individual use until recently that it was allow for use by highly ranked personalities.

Figured as ORIGINAL SKILL, INVENTION, INDIVIDUALITY, EXCELLENCE and EXCELLENT ATTAINMENT.

TOKU KRA TOMA

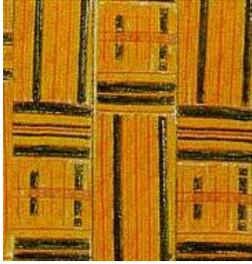


Factual introduction “**Toku’s soul apparel**”.

There came a queen in Asante who was known for her courageous and was a fighter too and Nana Opoku Ware who was a King that time decide to name the apparel in her name since this courageous fighter died during battle. In the year of 1731-1742, this woman was said to be the only brave person who stood to defend her Kingdom. Due to this, the cloth is highly ranked and worn by heads of royal families and respected people within the Kingdom.

The apparel demonstrate FEARLESS MANAGEMENT, EPIC ACTS, SELFLESSNESS, CELESTIAL VIGOUR and PROFIT.

WOFRO DUA PA A NA YEPIA WO



Factual implication “**one who climbs a tree worth climbing gets the help deserved.**”

In Akan Kingdom, an individual moral sweat is acknowledge in public believed. One who decides to ascend on a fruit bearing tree, all people under the tree decide to give him or her a pact at the back because once the fruits are get hold all people under the tree will benefit. This tells that cooperation is a must in achieving praiseworthy passage.

Represents AMBITION, FAITH, JOINT WELFARES, and DISTRIBUTION plus UPRIGHT ACTS.

KYERETWIE

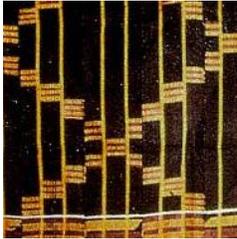


Factual significance “**the lion catcher.**”

During the reign of King Kwaku Dua in the year 1838-1867, he ordered his brave fighters to catch a leopard alive. The term “Kyeretwie” was then assigned to the various Kings in Asante who exhibit braveness and headship abilities as they were compared to brave men who catch live leopards.

Cloth denotes BRAVERY, BOLDNESS, SPECIAL ATTAINMENT and INSPIRATIONAL GOVERNANCE.

AKYEMPEM

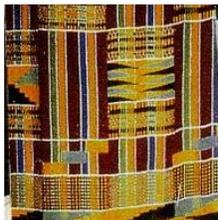


Accurate gist “**thousands shields.**”

It references the armors used by vastly effective soldiers comprising of men and women made of thousands who protected the Kingdom of Asante alongside outside force. From the views of martial policy of the people of Asante, Akyempemhene bear the King’s buffer accompanied by his own sons who serve as watches of the King.

The cloth indicates ARMED EXPERTISE, HARMONY THROUGH MARTIAL STRENGTH, COURAGE, PARTISAN VIGILANCE and DIVINE DEFENSIVENESS.

NYANKOTON



Actual importance “**God’s eye brow (the rainbow).**”

This apparel was made in adulation of rainbow marvel as far as attractiveness and secret is concern.

Bend threads imitates graphical features.

It signifies GODLY PREITINESS, DIGNITY, GODLIKE SKILLS, and INDIVIDUALITY plus DECENT SIGN.

Drawing conclusion, quality and cost of a specific kente apparel depends on worth of thread, type (s) designs, colours, the number of days used in weaving the cloth. Also the black and red kente clothes are mostly worn during funeral ceremonials and any colour apart from these can be worn during festive seasons.

The need for carrying out this project is to improve the customer requirement, promote the business, follow the customer, reduce operating cost, and get more customers.

One of the need for carrying this project is to improve customer requirement, as pertaining to the existing physical store where customers is limited due to inadequate information from workers to customers and also other e-commerce website such as Tonaton in which Appau kente solution sells some of its products to customers is not known for selling one particular product making it complex to get customer requirement since it is very difficult to know the knowledge of customers.

Secondly, one of the major need of the project is to promote the business where by the business will be known globally with the online store in place which will help expand the business from the physical location to a global reach. This online store will expand the business since many customers can buy from anywhere.

Thirdly, with online store, the customer will register with us and this will enable us to follow the customer and his or her preferences which will enable us to e-mail him or her about a particular product which may interest him or her. Following the customer, we may have the knowledge about the number of customers who buy from us and also one time sales made.

Reduction in the operational cost of a business is the key aspect of setting up a business. This as a need, having an online store rather than spending huge sum of money building a physical store will help reduce the business operation cost since few workers can manage the store online.

Furthermore, ubiquity is one the uniqueness of electronic commerce where people are able to buy from anywhere either at home, work, offices, etc. and with the online store in place many people will buy from us both within and outside the country and through this the business will get more customers at the end.

In conclusion, improving the customer requirement, promoting the business, following the customer, reducing operating cost, and getting more customers are the need for this project.

Other works on this project includes; Zuva, Kisua, Onyche, Moon look, Olx, Tonaton, and many others. These projects worked on selling different products and brands but our project works on one particular product and its accessories.

Our application is different from others in terms of user-friendliness such as Payment Systems (PS) and delivery, Navigation, Authentication, Search, and Chat.

One of the user-friendliness is payment systems we have put in place such as mobile money form of payment is secure and safe to be used as a form of transaction within the country. Credit card or debit card form of payment is not well known to many people within the country. Also for customers outside the country can use credit card as a form of payment for purchases to be made.

Delivery is made to all the areas within the country and some parts of the world.

Secondly, the site navigation is easy and simple since all the products and brands are can be seen from the home page making users to open an intended page as fast as possible. Also various links to leads to the home page and one can go back to the home page from any another page.

Thirdly, we have a secured authentication mechanism in place and our database is encrypted with a high encryption algorithms and customers details are well secured with us. Digital certificates is also another way used to ensure information transmitted is well secured.

Moreover, the online store deals in a particular product and it accessories allowing users to find the product of a brand they are looking for at ease through the search. Searching for a particular item is fast and customers are able to find all that the look for without any stress.

Further, messages sent by customers get responses in a short time as compare to other sites which can take almost a day.

Conclusion, mode of payments and delivery, authentication, site navigation, search and chat are some of the user-friendliness in which the site has which differ from other site which are into a similar business.

1.2 Problem Statement

An electronic commerce is becoming the tendency these days as the brick-and-mortar shops are trailing behind online shops due to a massive increase in Internet users in the world mostly Africa. Currently, Appau kente solutions limited use Ox, Tonaton and other social media platforms such as Facebook. Instagram, LinkedIn among others in selling products to the customers adding to its physical store.

Some of the problems faced by customers who buy from Appau kente solution limited are;

- It is less user-friendly
- Difficulty in identifying the needed item
- Limitation in product description
- Completing a transaction is a time consuming process
- Less secure form of transaction.

Firstly, one of complains received by the business from the customers is difficulty in searching for a particular product since the various sites sell different types of products and brands. The site navigation is very difficult and customers lost their way out in moving through the pages. Also messages get reply over a day and those responses are not well detailed.

Secondly, customers find it difficult in identifying a product since there is no product description and no links for product details and end up buying a product they never intended making it difficult for the business to get enough profit budgeted for. Also the business do not know the size of the customers they have since they have less knowledge about their customers.

Thirdly, is timing consuming when customer wants to buy a product since their signup sessions take a long process to complete and the site cost customers huge bandwidth making them incurred additional money after making a purchase. The various sites in which the business sell their products to the customers has a poor site layout making it difficult and stressful.

Moreover, lack of trust exhibited by customers' shows the business has to come out with their own online store so that they can monitor all the actives from product ordering and payments and delivery to customers by recording various transactions histories in the business own database. With the business monitoring their own transaction online will be able to fight against fraud within or outside the business, theft, phishing, viruses, Trojans, and other attacks from hackers online.

In conclusion, less user-friendliness, difficulty identifying a particular product, product description, time consuming process of transactions, and less secure form of transaction were the problem statement.

1.3 Objectives

As part of this study, the following objectives were addressed:

- To assess the security mechanisms of effective online shopping system
- To develop mechanisms for comparing different kente clothes
- To develop mechanisms for integrating different payment systems
- To implement secure online shopping system for kente clothes

One of the objectives is to assess the security mechanisms of effective online shopping system.

The various security mechanisms such as **Confidentiality, Integrity, Availability, Authenticity,**

Non-Reputability are been put in place to ensure that our customers privacy is well protected.

Information is vital to companies and any breach or leak may cause a loss of dignity and reputation to the individual or organization. With this, companies are advice to put at least basic security measures in place to prevent data disruption, destruction and unintended deletion of information.

Data confidentiality ensures that a given resources or information is accessible to only authorized people. This ensures that customer privacy is well managed. Integrity safeguards information in transit where third parties are prevent from deleting data inadvertently or modifying a data in transmission. Data availability ensures that information is accessible for every given time pertaining to the number of DDOS attacks. Security measures must check to ensure that an individual cannot deny taking a transaction or performing an activity online and this is term as non-repudiation.

Secondly, various mechanism has been designed to compare various products based on their brands and various brands have been listed on the site as navigations for customers to see and select a particular brand or brands of choice when purchasing.

Moreover, form of payments integrated are mobile money form of payment or transaction and credit card payment. Locally. Majority of customers transact business using their mobile money as payment for every transactions so integrating this mode of payment will help many people to buy from us within the country since few people make use of credit card payment system.

Furthermore, implementation of secure online shopping system for kente clothes is in place to ensure that information flowing between the business and customers are well secured and available all time when needed. Also customers can decide to delete their accounts or open a new one without any difficulties.

Conclusion, the various objectives in place are to assess the security mechanisms of effective online shopping system, to develop mechanisms for comparing different kente clothes, to develop mechanisms for integrating different payment systems, to implement secure online shopping system for kente clothes.

1.4 Research Questions

During our research study, questions listed below were addressed:

- How many form of payment systems used and its implementation?
- What will go on in item price comparability?
- How secure is the platform?
- How does customer privacy and potential threat handled?

During the study, one of the questions addressed was form of payments to be implemented and at the end, credit card payments and mobile money form of transaction were the two payments system to be used.

Also, in item price comparability, various products and their brands have will be listed on the homepage or customers can view all products on the page to compare prices before making a purchase.

Moreover, the platform security was also discussed and various security mechanism were put in place includes data confidentiality, data availability, data integrity and information non-repudiation to ensure that the platform is well secured.

Furthermore, customers' privacy and potential threat are to be handled through encryption, security certificates, and digital signature. Most sensitive information which are in transit or installed is sometimes in plain text making it very easy to be stole, corrupted or destroyed by an unauthorized user. With this, an individual and organizations must encrypt their sensitive data. Encryption is the process of scrambling plain text into cypher text using an encryption algorithms. Also digital signatures can be used to enable information authenticity whiles security certificates signifies a single id which is digital used in verification of individual user or web site.

The various questions listed above were the research question gathered through the study.

1.5 Justification

Appau kente solution limited used other e-commerce sites such as Olx, Tonaton and other social media platforms such Facebook, Instagram, Twitter and among others in selling their kente products to its customers. Due to this they find it difficult in keeping the records and history of sales made from all these platforms mentioned above.

Secondly, it will enable users to know the relationships between the quality and cost of materials of kente clothes. Appau kente solution e-commerce site will have a history navigation link which will educate users about history of kente, kente patterns, colours, and days it will take an average kente weaver to complete when given some colours and patterns.

Thirdly, the kente e-commerce site will enable users to contact us by sending their personalization in terms of quality, patterns and colours they want us to weave for them and we will reply them with cost within 24 hours.

In support of Appau kente solution limited, the Group4-IT Solutions wants to simplify and streamline its permit application and fulfillment procedure.

To this end, we plan to build a digital store which will allow users to make purchases from anywhere without necessary coming to the physical store via the Internet.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Advancing in cutting-edge technologies have greatly changed the way things are done, ranging from education, governance, manufacturing, shopping, and among others. This research paper on section 2.2 debates about electronic commerce overview (history, definition, types, advantaged and limitations). The various research works relating to this topic that is section 2.3 talks about work done by other researchers. Online payments systems with its subheadings such as background of electronic assessment on online payments systems and security mechanisms of various electronic malls, a framework for developing mechanisms for integrating different payment systems and a framework for implement a secure online shopping system is found on section 2.4 with its subsections 2.4.1, 2.4.2 and 2.4.3. Developmental tools with its subheadings on section 2.5 and subsections 2.5.1 and 2.5.2 conferences about various tools and programming or scripting languages used in developing electronic commerce websites and comparisons and contrast of various tools used in Web development and database management systems and mechanisms and tools used in comparing products prices. The last session which is on section 2.6 summarizes the various major points used in this research work.

2.2 Overview of Electronic Commerce

The evolution of electronic transaction is said to occur way back in 40 years and its growth is phenomenal due to the growth of Internet users around the world. According to internetworldstats.com the Internet user's penetration is so high that in some years to come majority of businesses found in isolated locations can be seen closer to us using the Internet.

In the study conducted by Michael Aldrich in 1979 and who is from United Kingdom stated that the hazards and hush experiences people found themselves when shopping from the physical store is going to be a thing of the past as electronic commerce is here to improve on people safety, convenience, less stress in price comparability online, and fast transactions.

With the introduction of World Wide Web by Tim Burners Lee in 1994 has brought a lot of prospects as many websites can be found on the Internet. It is said that amazon was the first online commerce to emerge in the world and continues to be the most valuable company in the world. It is also said that marijuana was the first item of transaction to be done when e-commerce first started and this study was done by Stanford students to Massachusetts Institute of Technology students in the United States in 1972. (Miva, 2011)

An electronic commerce can be define as a process of using Internet, intranet or extranet to buy and sell goods and services and also to trade data. (Asare, 2018)

The types of electronic commerce includes;

- **Business-to-business (B2C):** It is a form of online transaction where goods and services are mostly exchange between the seller and the buyer. This type of websites make their money mostly through sales.

- **Business-to-Business (B2B):** Businesses sometimes sell goods and services to other business in a large quantity and the business which made the purchase later sell it to its customers in a smaller quantity. Example is **Go2Paper** which sells newspapers in large quantity to other businesses.
- **Consumer-to-Consumer (C2C):** This enable people to sell used or new items to people online by posting them on their websites. Such websites make their money through transactions fee and advertising fees. Example is eBay. Tonaton, Olx, and among others.
- **Mobile ecommerce (M-commerce):** The e-commerce is gradually shifting from where users were commonly found at a fixed location using desktop computers to purchase goods and services online. Today, mobile users have increased and people can make a purchase from their work places, hair salons, traffic, homes, and the rest and this type of e-commerce is becoming popular each day. Users can use their tablets, and mobile phones to search and compare prices from the various e-commerce websites in their own convenience without any stress.
- **Social ecommerce:** These days many social media platforms allow users to advertise their products by creating their own customized pages and example of this social platforms are Facebook, Twitter, Instagram, LinkedIn, and the rest.

Among the types of electronic commerce listed above, this research work makes use of **Business-to-Consumer (B2C)** form of transaction where there is someone (mostly companies) who is selling and another one who is willing to buy. The business is said to sell kente and its accessories to customers through an online store. This research work has implemented an e-commerce website where quality and affordable kente and accessories will be sold to customers using either Internet, intranet or extranet

Some of the merit and demerit pertaining to electronic commerce are listed below.

Advantages

Benefit to the Business:

- With e-commerce majority of businesses are moving from a mere physical store to an online store as it is low-cost to move to the online store; small workers are needed and natural resources are put to good use. Remote businesses are brought to a lime light with the introduction of an online transaction.
- With the development of electronic commerce the cost of getting a land, buying of building materials, contacting building contractors to put up the physical store is over. The cost of hiring security men to watch over the physical store both the day and night is not needed as the store is located on online and this has dramatically cut done cost in setting up a business online.

Benefit to the Customer:

- Electronic commerce has allowed may Internet users to transact goods and services in their own convenient time without any propel. With this people are able to shop online 24/7 in each day from their homes, restaurants, offices, work places and among others without necessarily taking a transport to the company's physical store.
- In the olden days of shopping where customers have to be in the physical store to choose items of choice is over as with introduction of electronic commerce customers can compare prices from different e-commerce websites within a short time before making a purchase. This has help customers to get quality goods and services at an affordable prices.

Benefit to the Society:

- Electronic commerce has increase the standard of living of people in the sense that people are able to budget well as there are many e-commerce websites online similarly selling products or services and each of them has their fixed prices on various items which allows people to transact within the estimated budget.
- Electronic commerce has contributed to the reduction of traffic on our major roads as people can buy and sell online without taking a transport to the physical location where the store is. (Asare, 2018)

Disadvantages

Technical limitations

One of the limitation of electronic commerce site is an inadequate telecommunication bandwidth for Internet users. In Africa especially Ghana the cost of telecommunication bandwidth is unbearable which impedes many people from buying goods and services online as it might cost less when an individual decides to take a transport to the physical store. Also many software are incompatible with electronic commerce sites.

Fear

As Internet users continue to grow, many fraudsters, scammers, and hackers also continue to emerge duping some users online each day. Due to this people are not willing to trade, buy or sell online and continue to transact businesses from their physical stores.

Legal issues

In Ghana our already existing laws is not able to cater for cybercrimes which allows fraudsters, scammers popularly known in our local parlance as ‘sakawa’ to continue to operate and dubbed people online each day and frequently this occurs on social media platforms and most dating sites. Also in some parts of the world the government charge taxes on goods and services from various e-commerce websites on each item a customer buys preventing people to transact online.

Cultural Differences

Many culture exists in this world especially in Africa and to transact business online every company should consider the people it is selling its goods and services to as what is ethical in one country may seem unethical in another country. E-commerce should cater for all these to ensure there is no discrimination or bias in any sense in transacting business. The customer is always right so e-commerce sites should allow customization and personalization to allow customers to make or select what they see fit. Cultural differences as people belonging to different ethnic groups are not willing to embrace the work.

(<https://accountlearning.com/limitations-or-disadvantages-of-electronic-commerce/>, 2019)

2.3 Related Works

EMitra Abhijit (2013) recommended that with the emergence of 4G and 5G and its distribution will continue to change the old ways where businesses are made of physical stores to an online store which is popularly known as web stores. This evolution in electronic commerce will boost the way businesses are conducted, proper allocation of resources both human and natural and the process of making huge profits and revenues by dipping cost.

According to internetworldstats.com as of June 30, 2018 the population of Africa was 1,287,914,329 and Internet users in Africa was 11.0% at a growth of 10,199% since 2008-2018. This is a positive sign that as Internet users continue to grow, the way of business will change from merely physical location to an electronic storefronts where users can buy and sell from anywhere around the world. This research work is with the view that as Africa and world Internet users penetration rate which stands at 36.1% and 55.1% (internetworldstats.com) means electronic commerce is the future of shopping and moving Appau Kente Solution limited from only been physically located to an online store will help in expanding the business by getting more customers not only in Ghana but across parts of the world. As the growth of Internet users continue to increase so shall Internet security becomes hard as hackers, viruses, worms and Trojans intercept or destroy sensitive information shared online. In this research work, Secure Socket Layer (SSL) was employed to enable end-to-end encryption of communication and information shared between the business and their customers. With implementation of this security measures in addition to business Internet address will ensure that sensitive data and customers' privacy are well protected and secured.

Chanana Nisha and Goele Sangeeta (2012) suggested that as Electronic commerce continues to grow due to the number of Internet users growing each year in mostly Africa and Asia will bring many challenges which might be complex to address with high level of cybercrimes and which most legal laws do not address in many countries around the world.

The days people all over the world fancy in travelling for tourist attraction centers around the world and various countries in the world is boosting the attraction areas within the countries since is said to generate huge profits to the government.

The coming of electronic commerce is not difficult to predict as stated by **Chanana Nisha and Goele Sangeeta (2012)**. This is because as majority of world population continue to embrace the use of Internet, people will like to find everything they want at a fastest rate and some of the things ranges from latex cars on the market, quality design products, and home services and many others. People will be unwilling to move outside their homes to buy or sell since all these can be done with the use of Internet. In Ghana, Internet users as of 2016 stated by internetlivestats.com shows that with a population of over 28 million people the number of Internet users is 7,958,675 with a penetration rate of 28.4%. This demonstrate that ecommerce future is very positive as majority of businesses in Ghana will move from physical store to an online store which will increase revenue and profits thereby enlarging the boundaries of business transactions.

On the other hand, with coming of mobile electronic commerce, e-commerce sites offering many payment options for customers to choose from, online stores collaborating with other shipping companies to deliver their goods to customers and rich content provided by some web stores as stated by **Chanana Nisha and Goele Sangeeta (2012)** was accurate as many online stores have implemented these into their Web stores. We integrated two form of payment options in this research work and these options are credit card and mobile money forms of payments. In Ghana majority of mobile users have registered mobile money as form of electronic wallet with their vendors where users are able to save and retrieve money as when needed. With the survey made and information gathered from internetworldstats.com stated that as Internet users in Ghana continues to grow more transactions will be done online and users will pay for goods and services using their mobile money electronic wallet as people prefer to save in the electronic wallet rather than at the bank as they find it very convenient and fast. Also with the implementation of credit

card, customers who do not have mobile money account can make use of credit card to buy goods from Appau Kente Solution Limited especially customers outside the country.

These days people in Ghana and around the world is able to buy goods from some electronic sites such as Alibaba, Amazon, Tonaton, Olx and many others by sitting in their homes, offices, shops, workplaces and in the traffic connecting their mobile phones or desktop computers to the Internet and transact or buy a product(s) or receive a service without any manhandle and this study was conducted by **Awais Muhammad and Samin Tanzila (2012)**.

Indeed the world is a global village now with the introduction of Web 2.0 where many social sites such as Facebook, Instagram, Twitter and many blog sites have emerged where users can share resources, edit and delete their social media accounts, advertise their goods and services among others. In the future ecommerce sites with introduction of Web 3.0 in which machine to machine communication will be possible many sites will implement voice search, animations, and ecommerce delivery drones. Many Internet users in Ghana can be found among and if not all some of the mentioned social media platforms in use today as when news get broken its spread across all these social media handles and pages as a fastest time.

Due to the rise of information and resources, some media platforms reports misinformation and false stories especially our Ghanaian culture as most similar electronic commerce which are into the sale of African prints have little information about these products. This research work ensures that kente products and its accessories is match with its brand and history behind the brand names.

The research work website page has a section named history where guest and customers can read about various products history and how kente came into existence in Bonwire which is found in Ashanti Region, Ghana.

W. Ken Harmon, Zabihollah Rezaee and Kenneth R. Lambert (2006) recommendations shows that electronic commerce encompasses different disciplines and with introduction of this as a course or to be integrated into various courses offered in our schools around the world will not only help create a world of future generations with an entrepreneur skills but also ease the tension on the government in creating jobs for the people. If the awareness is created from the junior high schools into the tertiary level will help the students to know how they should conduct themselves well and take the advantage the use of Internet brings to our businesses through various advertisement and among others.

The looking at the recommendation stated above is factual in the sense that if various institutions across the world especially in Ghana can implement e-commerce into our education system as our education system is more of academics works and with infusion of e-commerce many students will be well quipped practically on how to use the Internet to sell, purchase, trade data, goods and services and will become self-employed after school.

Also the government should that various network communications implements 4G and 5G properly in Ghana and cost of Internet bandwidths is reduce this will enable majority of the population to buy and sell goods and services online.

Kim (2006) says the aesthetic beauty is what people fancy these days when looking for something to buy online from the various electronic commerce online. They want eye-catching looks and wish that whatever they are looking for online can be done with a twinkle of an eye. Also no physical contact and paperless transaction are mostly done in these web stores. Customers buy products without knowing the person who sold to him or her physically and also may not have a feel about the item been bought unless is delivered. Due to this, Kim suggested that electronic

commerce should be user friendly and payments systems should be well secured in order to attract the confidence from their customers.

From the research work the website developed contain a help navigation link with detailed explanations of how secure transaction can be done on the website and the site functionality and what the customer can do to minimize risk associated with online payments systems. The web interface is user friendly as various navigations for products and brands is listed for customers to access them easily since our navigation links contain no drop down lists to confuse customers in finding their way out. Also another strategy we made use of is focusing on quality over quantity. If we focus on only two factors stated by Kim we may lose as a business if we do not consider selling quality product to our customers. Appau Kente Solution Limited as the name suggest sells quality and affordable kente and its accessories to customers and this will make us stay on top of business.

From the various similar websites visited and research made, the information listed below suggest the strong and weaknesses.

- Places where most resources are found in the various sites, explanations given are in 72% accurate.
- Most cases 11% basic explanation's are given making it complex to be understandable by customers who wishes to buy.
- About 70% of electronic commerce sites want users who wish to buy any product from them to sign up first before making any checkouts.

- Users want things to be done as fast as they want and may wish to have a one-time registration with various e-commerce sites they want to transact with but we saw that only 5% offered this process.
- Most customers fear to share their credit card details due to less trust they have with online shops either they are buying from the original store or just a fake websites. Due to this electronic commerce sites must have an information link (s) which explain to customers or guest on how they (customers and guests) conduct themselves when making payments. We found out that only 5% have these information on their websites.
- 87% of the electronic commerce stores receive payments made by customers during transactions themselves while others deal with middle men (mostly banks) where payments are directed to their accounts before getting to them.
- From the survey, 61% online stores will direct as to how various details about customers are stored. Type of firewalls (both software and hardware) placed on the network, outbound and inbounds allowed into the network, which payment systems in use and the reasons behind it, integration of various APIs and how they work, mode of delivery and among others.
- Only 10% of the websites make use of third parties in accepting the transaction on their behalf with a protected payment operation systems, have a help session page where education is offered to customers on how to make safe transaction when making a purchase.

2.4 Online Payment Systems

In the early days of electronic commerce, various transactions made by customers were mostly paid offline where an invoice is sent to customers email address or done via telephone messages. As the evolution of electronic continue to become popular, e-commerce shops started to accept payments online from their customers after transactions are made and this payments are either paid directly to the business accounts or a third party accounts. Some of the businesses works with other vendors which receives the online payments on their behalf and later the vendor transfers the money the business account by charging a small fee. Examples of third party companies which receives the online payments on behalf of their clients are PayPal, Google, Click2pay and among others.

2.4.1 A Background of Electronic Assessment online Payments Systems and Security Mechanisms of various Electronic Malls.

As electronic commerce websites began to accept payments online several security issues and threat has also arise as hackers, scammers and Internet fraudsters each day want to trick users online by stealing their credit or debit card details. This trend has become a major issue and most of online shops has contracted trusted third party corporations to receive the online payments on their behalf since they believe with their modern technology systems in place could minimize the risk associated with online payments systems.

Some suggestion were made by Hegarty et al. (2013) that the remedy to the problems can be cited based on the information given below.

- An integral characteristics of payment systems found in various product which are sold online

- The design, physical and logical security measures in place as far as electronic commerce sites are concern.
- Various operations of sale products payments methods and their security structures.
- Procedures and policies are also needed to serve as a guide to workers and customers which will help in preventing the breach of security measures and its establishments.

If proper measures are taken by electronic commerce sites on the part of their payments systems online will increase the confidence and trust that their customers have in them.

Some of security mechanisms in use from the study of various e-commerce websites includes;

Authentication

Electronic commerce sites have a registration navigation link where customers can sign up with them before making a checkout. In most online store from the research study conducted, customers are said to register with the business by creating their own accounts and business use email and password provided by customers during registration to authenticate them. Forgotten password link also allows customers to reset their passwords.

Non-repudiation

Recently, there are many cases of frauds where many credit card holders deny making a purchase online complaining that someone somehow had tampered their cards details. Due to this concerns raised most electronic commerce sites are taking various measures to at least minimize this risk. With end-to-end encryption and implementation of digital certificates will help ensure false pretenses and denial of responsibilities from some part of customers.

Confidentiality

Aside the importance electronic commerce provides to customers, they are also expecting that their privacy is properly adhere to by the various e-commerce sites they trade data with. When their concerns on how their private life becomes confidential is address, they will be willing to provide the support and be willing to give credible details about themselves. Most of the e-commerce visited allow customers to pay offline by sending them an invoice to their emails and this helps by ensuring that confidential information are shared between only the business and the customer.

Integrity

For example a customer buying a product that cost Gh¢100.00 and paying for them using the credit card or debit card at the same time from an electronic commerce website later find out that his or her bill is now Gh¢150.00 instead of Gh¢100.00. This example illustrate an inconsistency in the transaction processes and with this issue that integrity comes into play to ensure that data in transit is what it is during and after receiving and there is no changes on the data in transmission.

Also information shared between the business and the customer should not be altered in any sense.

Privacy Protection

Many governmental security agencies sometimes request information about people through businesses and organizations these people work or trade with without the knowledge of the people. These agencies have their central database connected to those business database making them to monitor the various activities exhibited by the people over the Internet.

On the other hand, some of these business sells these information to other parties for money without their customers' knowledge. Due to this issues people business who are more reliable and can shield their private information from any third parties.

Availability

Availability ensures that e-commerce sites are up and running for 24/7. Most of the sites visited goes done in the night and even in the day time too. Online business is very competitive and to safeguard stiff competition e-commerce site should be up and running all time. Availability of detailed online help links will aid in guaranteeing secure transactions done by customers. Also help lines should be active all time so that customers can call for assistance when lost.

From the information gathered through the various sites visited and their security mechanisms in place, we decided to implement these three forms of security mechanisms in our research work.

These security mechanisms are Confidentiality, Integrity and Availability which sometimes acronym as CIA. The reason been that if information shared between the business is very confidential in the sense that no third party gets to know the information in transit due to various encryption algorithms been implemented customers will have a trust in us that we are able to protect their sensitive information. Also the research work ensures that the e-commerce in place can be found online for 24/7 that is availability and our help navigation link contains detailed information about how customers can buy a product(s) in a secure and safe way thereby minimizing risks associated with online security payments. The site has a customer service lines which customers can call for further information when needed. Integrity of information as data in transit is not altered in any form and it is what it is as sent by the sender and received. The research

work ensure that data integrity is maintained on our e-commerce and customers transactions done accurate.

In conclusion, with the implementation of confidentiality, integrity and availability as a security mechanisms in the e-commerce site will help achieve the level of online security we needed.

2.4.2 A framework for Developing Mechanisms for Integrating Different Payment Systems

Looking at the importance attach to an online payments systems as it a paperless form of transaction which is fast and convenience if it is properly handle by these electronic commerce websites which accept the payments themselves. In addition, those third party corporations who receives payments on behalf of their clients must handle those transaction in a very secure manner. The progress of electronic commerce will be much concern on an online payments and various security mechanisms in place and their implementations on the part of the various e-commerce sites (Slozko and Pello, 2015).

Through the research work we came to find out that these payments methods were used by the majority of the sites visited.

Credit Card

From the survey made we came to know that credit card was mostly used by customers in making a purchase online. With credit card, users can buy items and pay for them by the banks in the form of a credit. These banks charge a minimum fee based on the credit requested by the user. Some interested can be paid by customers if they are not able to pay back the money request on the due date. Recently, there has been an integration of verification number added to payments of items using credit cards.

Debit Card

Users of these card bearers may have enough money to pay for all the products bought online since they have enough money in their bank accounts in contrast to credit card holders who make purchases online on credit and later pay for them.

Smart Card

Smart card users upload monies into it electronically and can be used to make an online transactions and can pay their utility bills, purchase and among many others.

Electronic Wallet

One can have access to both credit card, debit card and the rest and such a user may wish there will be a system in place that can integrate these cards into one in which funds can be move from one card to another. So with this issue an electronic wallet was introduced to defray the challenges of these cards bearers.

Mobile Money Transaction

The new form of online payment which is emerging now in electronic ecommerce sites is the mobile money transaction. Here customers can upload money electronically from their money vendors into their electronic wallet.

Net Banking

Most e-commerce sites are directly working with some banks in which most of their customers have an accounts there. This allows their customers to make a payment directly from their bank accounts and these banks make payments on behalf of the customers through their bank accounts.

This has ended the situation of having either a credit card, debit card, smart card and among others before making a purchase.

From survey gathered from visited e-commerce websites these APIs were used.

Hardware and another hardware device can communicate using a software. These software is made of codes which speed communication and also interfaces with other software program. Some of the APIs are listed below.

Product Details APIs

Product information is vital for customers and guest to read more about a particular product before making a purchase and this can be realize by electronic commerce websites by implementing and integrating this APLIs.

Site Search APIs

Product search on e-commerce sites by customers are becoming more importance as they want to find what they are looking for within a second (s) without necessary clicking several navigation links before getting things done.

From growth of electronic commerce, voice search will become very vital as items can be search with the customer's voice. To ensure customers do not hustle in looking searching for a particular

Site search APIs is said to be used to make item search more fast and easy. Example of business which has implemented this is Cherrybrook which is noted for niche dog products.

Social Proof APIs

Many Internet users are mostly found in the social media platform and to get the attention of some these people into an electronic commerce sites means you have to find way of integration the two

together. Social proof APIs allows us to pull majority of the users found in Twitter, Facebook, LinkedIn, Instagram and rest by redirecting their attention into your product pages.

Personalization APIs

Customization and personalization is becoming common as customers prefer how their items should like before making a purchase. This personalization APIs enable them to personalized their goods before adding them to the checkout. Also the business is able to know the knowledge of a particular customer based on the personalization made on previous visit so that they can produce such items in the days to come to draw their attention to it.

Shipping APIs

The major work to be done by electronic commerce websites is how to transport the goods bought to the door steps of customers following their personal details in hand. In Ghana the addressing system is not all that good and many web stores find it difficult in locating the various places and this is mostly done through post offices within the suburbs in Ghana where users are directed to go and reclaim their items. Sometimes electronic commerce sites is not able to confirm either the customer received the item or not and spoilt items in delivery is difficult to be notice. With the implementation of shipping APIs, e-commerce sites can trace goods ordered to customers to know if it was receive by them or not.

Price Comparison APIs

The aim of most customers is to get quality and affordable products from e-commerce site to buy and they are able to find these through the comparisons of various sites. Price comparison APIs allows customers to compare prices of products within the visited e-commerce site pages or compare different web stores in the short time. This APIs also e-commerce site to compare their

product price to know either listed product prices are high or low and helps in competing with other similar sell sites.

From the review some of the payments systems used by the visited sites are net banking, smart card, credit and debit card, e-wallet and many others. Our research work is making use of only two payments system such as credit card and mobile payment. Mobile payment will enable majority of people within the country are into mobile transaction and with the implementation of credit card can aid customers outside the country to make purchases on the business website. Credit card is mostly used and we are with the view that implementing these will facilitate day-to-day transaction the business and the customers.

Also, various APIs in use as stated in the review such as product information APIs, site search APIs, Social proof APIs, personalization APIs, shipping APIs and price comparison APIs. In this research work, product information APIs, shipping APIs and price comparison APIs were used.

2.4.3 A framework for implementing a Secure Online Shopping System

Anytime users are searching for electronic commerce sites to buy an item they should check their browser address bar to see if they can locate a locked paddock and if they do then it means they are on a secure website and vice versa. The insecurity within most websites can be resolve when secure socket layer is implemented. Some customers may not be aware of the various security measures in place but at least they can read if provided on the help navigation link. When awareness is created people will be happy and confident knowing that their privacy is protected.

(Hegarty et al. 2003).

2.5 Developmental Tools

In e-Commerce project, time is the most valuable asset. Typically, the actual development takes a lot of time. But there are tools that developers can use to code faster. Some of the developmental tools are; Sublime Text, Brackets, LemonSync, Envato, CodeMyUI, Twitter Bootstrap, Markup Validation, Firebug, jsFiddle, Fakeimg.pl, and many others.

During research work from the visited sites we came across the following developmental tools.

JavaScript: This is a developmental tool used in developing a dynamic webpages and mostly less acceptable and used by developers.

Python: This is becoming a trend that frequently used by developers scattered across the world due to its effectiveness and readability

PHP: This is considered as the most acceptable and widely used development tool by e-commerce developers.

Html: Hypertext mark-up language is used to build e-commerce web pages.

MySQL: The most popular database system used with PHP.

Java: This has feature that is code 'once' run everywhere and it is very strong in making developers of e-commerce sites more creative.

CSS: This determines the look and feel of most web pages and gives more attractiveness to web pages.

2.5.1 Mechanisms and tools used in comparing different products prices.

In most e-commerce sites product comparison APIs is used to compare prices between their rival sites who are into a similar selling product. Using product APIs prices can be change (dynamic pricing) not like the one in a fixed price in product catalogs. This occurs when a customer logged

in the seller's site through the login page by entering the customer email and password to be authenticate and later "my account" page is open for him or her. Examples of e-commerce sites such as American Airlines, Amazon and others show their competitor prices based on price comparisons. After comparing prices, customers can add to the cart or shopping cart if he or she is satisfied and then do the checkout and decides either to pay online or offline.

2.5.2 Comparison and contrast of various tools for Web development and relational database management systems.

Electronic commerce sites need a database to store both inventories and records transactions made every day. They are able to do this with the use of database management system (DBMS). This DBMS interfaces between the database, its users and other application programs. A database management system enable database administrators to create, delete and modify existing database or database tables.

Database management systems consist of the following;

Hierarchical Database Management System

It has a relation of one-to-many with a single root as the schema for order is concern. It has a tree like edifice which link unlike 'owner' and 'parent' of the key record. Recording of information concerning group of parent child relations. Fields are obtained from the various collections of records with only unique value. Links connect various records together which is easy and quick. Previous knowledge has to be known as with this model.

Advantages:

This type of database works well when working on entities which require one-to-many relations. Modification and deletion can be done easily.

Disadvantage:

This allows one parent to a child relationship and permission is not allow between children no matter how much sense it contains from a logical point of view.

Network Database Management System

This model allows multiples files or records to be connected to multiple owner files and many others. Separate parents records and child multiple records is allowed that can be view from the point of visualized structure which looks like a web connected histories.

Advantages:

Designing a network database is practically effortless and stress-free. Accessing data is simple in comparison with hierarchical model.

It takes care of data complexity using it many-to-many relations.

Disadvantages:

One major demerit relate the use of pointers to preserve the records in the database.

Novice finds it difficult in suing Network database.

Relational Databases Management System

Creating tables using rows and columns is known in relational database and this allows quick allocation and retrievable of data inside database. The word “relational” inform as that tables created are interactive to each other. It starts with bits, Byte, records, field, file and database itself.

Advantages:

Relational database has help in getting rid of traditional way of storing information. It has minimized data conflict and data duplication when creating new tables or databases. It has security features which can be used in avoiding privilege escalation. Primary and secondly keys giving some entities enables us to identify various dominant or dependencies. Data normalization into various forms enable us to avoid data duplications.

Disadvantages:

One demerit of relational database management system is it sole reliance on hardware performance. If there are many tables or entities building relations among them become very complex and query (s) retrieval becomes slow to respond. Installation of relational database comes with cost as hardware has to be bought.

Some of the various Web development tools are listed below;**Sublime Text**

This the most one of the best text editor e-commerce developers can boost of due to its unique features which handy and very sufficient with its fastest speed. There are other types but this one is preferable to others.

Chrome Developer Tools

This enable e-commerce sites developers to edit their Html and CSS pages in a concurrent manner and full performance examination can be done on the web site.

JQuery

Various animations, addition of plug-ins and navigation through the documents.

Twitter Bootstrap

This tool allow web sites to have an equal resolution if a user either visit the site with a tablet, mobile, desktop computer and among other devices. This cut down dramatically amount of coded which is needed in building web pages.

Angular.js

This is was developed by Google and lets e-commerce developers extend their Html syntax that makes it quick, clear and mobile.

Listed Web development tools above aid in building a successful project as it contains features necessary for developing a Web site.

In conclusion, among the listed tools above, the follow were used during the research work; **Sublime Text, HTML, CSS, Php, JavaScript and jQuery** were used as Web development tools for this project and database management system used is **Relational Databases Management System** because of its unique features and support for the project.

2.6 Summary

The development of electronic is not much seen in Ghana pertaining to the amount of penetration growth in Internet users as suggested by internetworldstats.com. We can see this growth in the electronic commerce then government has to infuse this course into other disciplines such as economics, accounting, business management, entrepreneurship and many others so that students can learn from the basic level into the tertiary level. Also the government should absorb the huge cost communication bandwidth so that a lot of people within the country can afford. In Ghana, banks and communication networks should make rely on suitable security tools, policies and procedures to protect their customers' privacy. The coverage of communication networks should

be extended to the rural areas; distribution and operation of 4G and 5G be extended to all the corners within the country.

Some of Web development tools and relational database management systems used in this study includes; Php, Sublime Text, MySQL database, JavaScript, Chrome (browser), jQuery, Html, and CSS.

CHAPTER THREE

ACTIVITIES OF THE METHODOLOGY

3.1 Introduction

The study uses a predictive approach (waterfall model) for the system development life cycle of the proposed system and analyses why there is the need for Appau Kente Solution Limited to have its own electronic commerce website.

3.2 Preliminary Investigation

Through the research work, we noticed that every electronic commerce website is developed for a certain purpose. Currently, our contractor Appau Kente Solution Limited sells kente products to customers using some platforms such as Tonaton, Olx, Facebook, Instagram, LinkedIn, Twitter and many others. Also the company has a physical store where customers usually visit to make a purchase.

3.2 Analysis

The woven of kente is done in slim strip refer to as “ntomaban” or “bankuo” which is around 3-5 inches wideness and 5-6 feet lengthy. Few strips are stitched together to make broader portion of apparel to be use by men and women. Making a 12 yards of men cloth may consist of 24 strips which amount to 5 by 8 feet. Also making women two-piece apparel will take 8-12 strips every single piece and their cloth is 6 yards.

Several designs may complicate things for he weaver making him or her charge more since it takes many days to complete. From the local weavers, three kinds lacing is known and these **are simple, double and triple.**

The complicate ones with several designs can take an average weaver 7-8 hours to make a strip. Users can bring personalized their own designs for the weavers.

Simple: This contains only one design and can take an average weaver 1 week to complete 12 yards of men cloth or 6 yards of woman cloth.

Double: This is mostly made of two designs which can take an average weaver 2-3 weeks to complete.

Triple: This is also made of 3 designs which is capable of taking an average weaver 1 month 2 weeks to complete.

Uncooked Resources

- Materials listed below are used for weaving;
- **Metal thread** – this add brightness to cloth.
- **Silk** – It is costly and mostly used by local weavers.
- **Rayon** – This is an artificial fibre.
- **Cotton** – Mostly grown in the northern part of Ghana.

3.2.1 Relationship between quality and types of materials used.

Kente quality depends on the type of silk used and rayon.

The background of kente is design with the cotton and rayon or silk is use to design the kente. The silk is mostly expensive and quality than rayon. Rayon thread is not as strong as a silk thread.

3.2.2 Relationship between cost and type of materials used.

Some kente clothes (Nnwentoma) is mostly design using only hands and is the most expensive and can take an average weaver 4-5 months to complete.

The cost of kente depends on the design (s) used, thread used, colours and number of days the weaver will use to complete.

These days' kente cloth threads are becoming quality each day as compare to olden days.

It was impracticable for us to interview the entire workers in Appau Kente Solution Limited. We used probability sampling technique together with interview approach of collecting our data.

With this technique the chance of each case or element being selected from the population was known.

Per the data gathered and analyzed, we prioritized the service of the electronic commerce website to its client as follows:

- The electronic commerce website must be manage by e-commerce website administrator(s).
- There should be a third party to handle the online payment system.
- The e-commerce site must have a domain name the client want. The following names popped up.

| Name | Population sample percentage |
|---------------------|------------------------------|
| Kente.solution.com. | 20% |
| Appau.kente.com. | 55% |
| Askente.com. | 19% |
| Ghana.kente.com | 6% |

- The website must be hosted by a third party hosting company since the business cannot afford to host it by itself.

- The administrator and customers should be comfortable using the system.

System requirement

- 5 gag or more free space of hdd.
- 512mb or better memory.
- A Pentium processor or above that would do.

3.3 Design

This phase of the waterfall model lies in user request, analysis and program coding. This stage places basic foundation for developing the real artifact.

The program consists of various webpages that is made up of the website and a database to process, store and retrieve an information when needed.

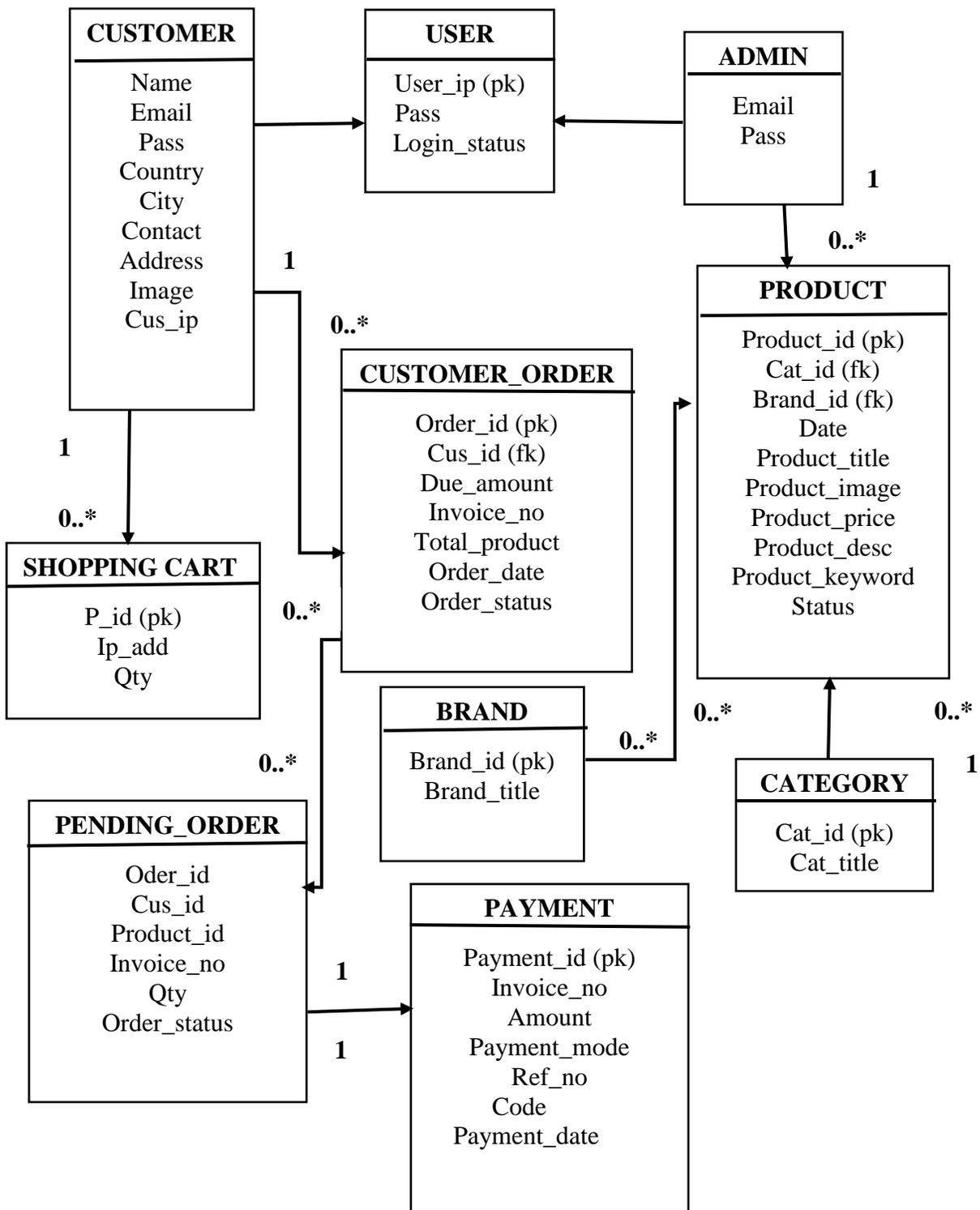


Figure 3.3.1 Database Architectural Design

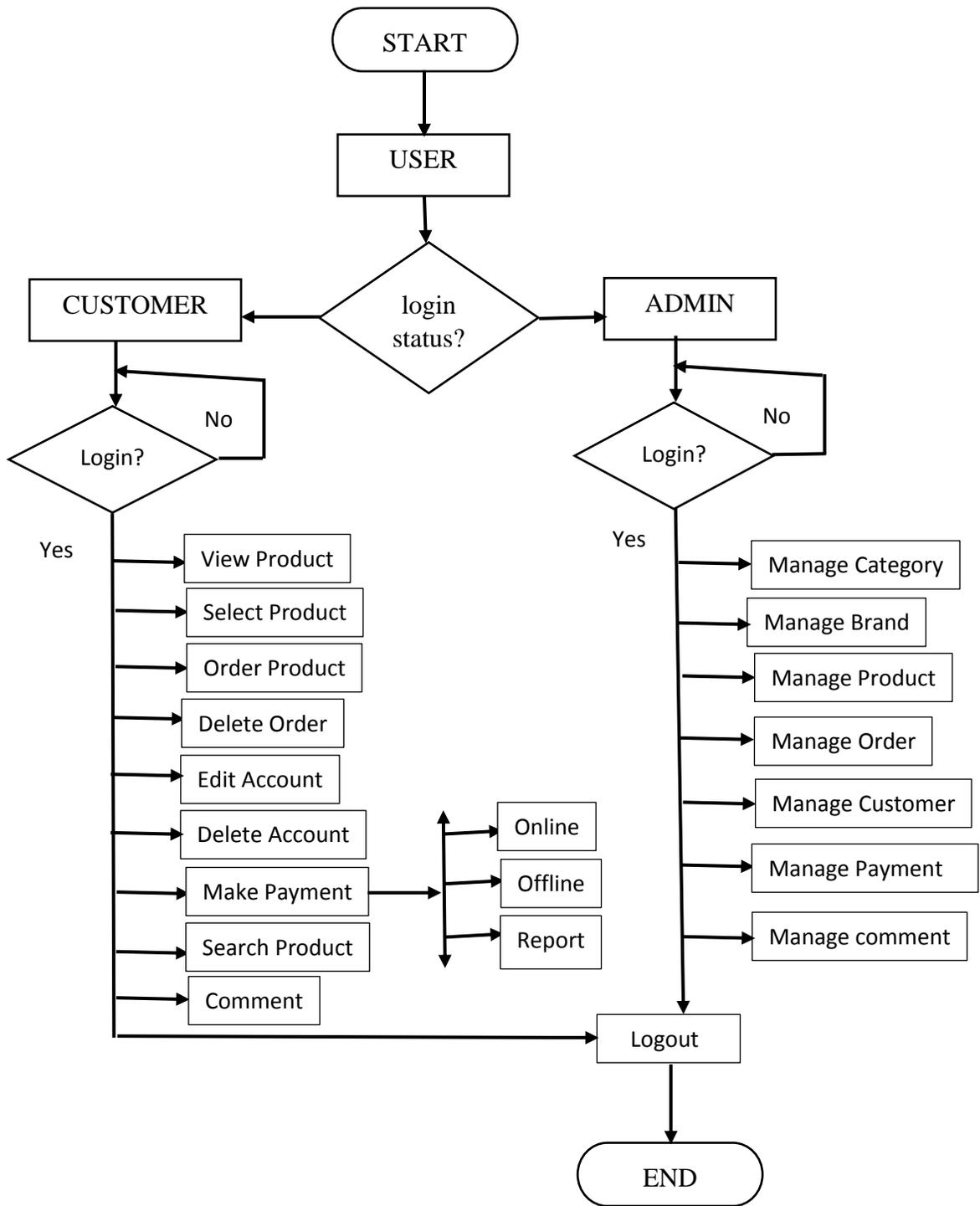


Figure 3.3.2 E-commerce Website Flowchart

3.4 Modules

The system is broken down into the following modules;

- Administrator
- Customer

The administrator has the superior power in using this system and its various activities are found in administrator page and is authorized to manage customer and various products.

Administrator module is breaking down into smaller modules.

- Manage Category
- Manage Brand
- Manage Product
- Manage Order
- Manage Customer
- Manage Payment
- Manage Comment

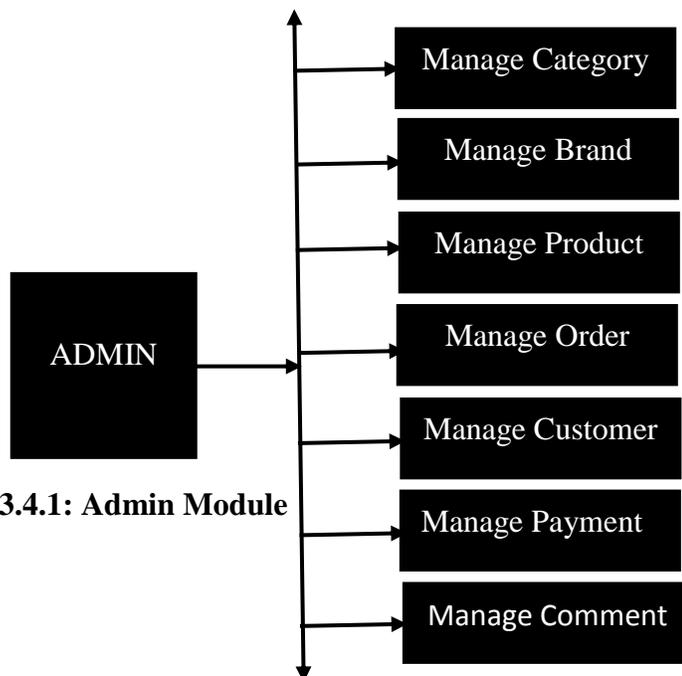


Figure 3.4.1: Admin Module

3.4.1.1: Manage Category

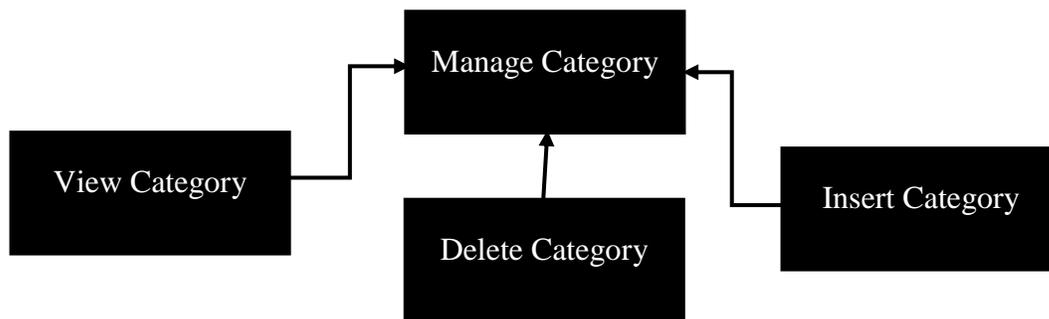


Figure 3.4.1.1 Manage Categories

Insert Category:

This session enable an admin to add a new category of product.

View Category:

Admin is able to view all products categories from this page.

Delete Category:

Category(s) which is not needed can be delete from this session.

3.4.1.2 Manage Brand

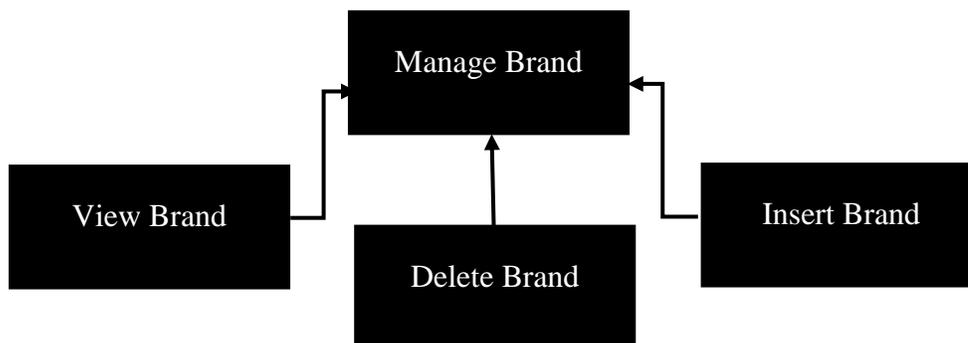


Figure 3.4.1.2 Manage Brands

Insert Brand:

This session enable an admin to add a new brand of product.

View Brand:

Admin is able to view all products brands from this page.

Delete Brand:

Brand(s) which is not needed can be delete from this session.

3.4.1.3 Manage Product

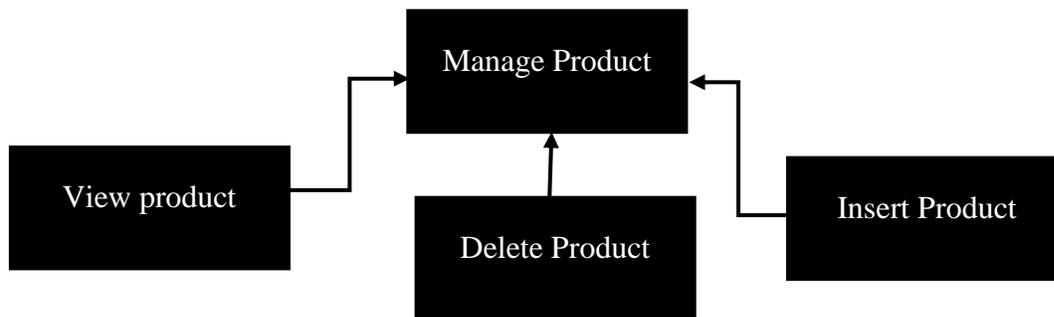


Figure 3.4.1.3 Manage Products

Insert Product:

Administrator can add a new product by clicking on insert button to add the new item image(s).

Products have many classifications usually by product name.

View Product:

The admin can view all products stored in the system. Product searching can also be done.

Delete Product:

Deletion of product can be done by clicking on 'delete' in the view all product page.

3.4.1.4 Manage Order



Figure 3.4.1.4 Manage Orders

View Order:

This session allows administrator to view all orders made by customers and can prove all the transaction details.

Delete Order:

Deletion can be done after the product is transported to the customer successfully.

3.4.1.5 Manage Customer

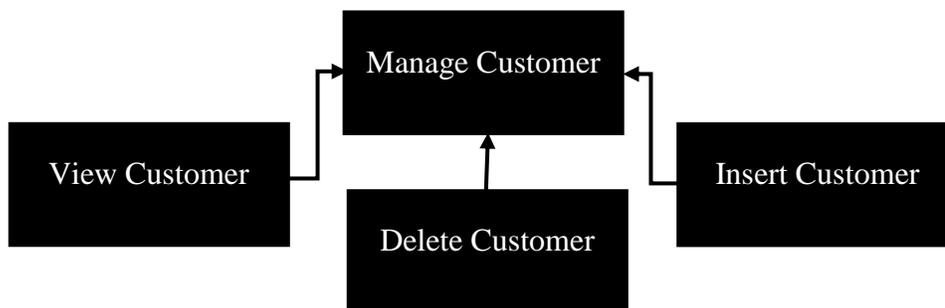


Figure 3.4.1.5 Manage Customers

Insert Customer:

A new customer can be added by administrator himself or herself.

View Customer:

All customer register with the company can be monitored by administrator.

Delete Customer:

Customer deletion can be done when the user becomes inactive for some time.

3.4.1.6 Manage Payment

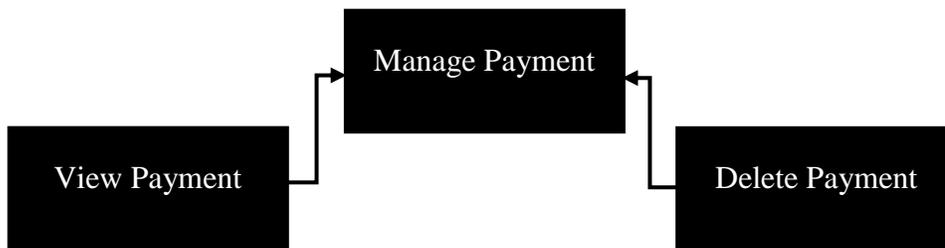


Figure 3.4.1.6 Manage Payments

View Payment:

Payments made by customers can be view by administrator

Delete Payments:

Admin can delete payment from the payments list after product delivery.

3.4.1.7 Manage Comment



Figure 3.4.1.7 Manage Comments

View Comment:

Comments or feedback from customers can be view by the administrator. Also personalization details concerning type of kente colors, thread or designs preferred by the customer can be sent through the contact us page.

Delete Comments:

All comments which has been attended to can be deleted by the administrator.

3.4.2 Customer Module

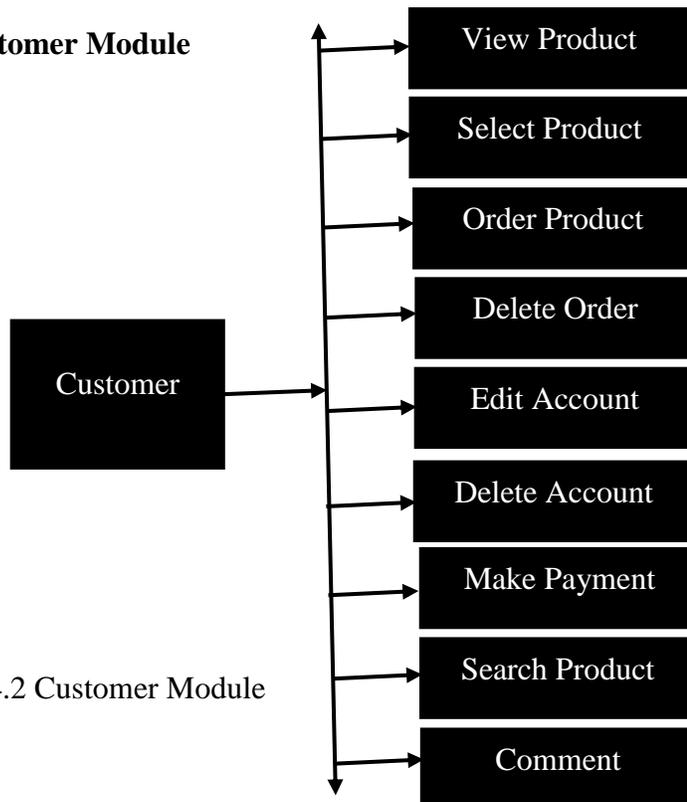


Figure 3.4.2 Customer Module

Register:

A guest to the site who may wish to buy an item may have to register by providing his or her details on the registration page.

Login:

After registration, a user will be provided with a login page to enter his or her credentials in order to be authenticated or existing customer has to enter his credential during login.

View Product:

Various product can be view by the customer on view product page.

Select Product:

Customer can choose to select an item by clicking on “”add to chart”

Button if interested in such item (s) and wish to purchase. However, product deletion can be done after adding a product to chart r basket.

Order Product:

Orders can be made by customers by clicking on checkout link.

Delete Order:

Orders made can be deleted after delivery is received.

View History:

The view history page allow customer(s) to view previous transaction(s) done.

Delete History:

Transaction history can be deleted by customer.

Edit Account:

Modification of personal details can be done by the customer if necessary.

Delete Account:

The customer can delete the profile.

Make Payment:

Customer can make payment by clicking on the confirm payment link.

Comment:

Feedback can be send by users or customers from the contact us navigation link. Personalization or customization details concerning type of kente colours, thread or designs ideal by the customer can be sent through the contact us page.

CHAPTER FOUR

INTRODUCTION

This session discuss the results attained during the coding, implementation, texting and maintenance of the website.

At this stage, the flowchart and data base architecture are used in building the site using some scripting languages specified.

Since there are sufficient details about the proposed system, coding can be done efficiently. Codes were written for all the modules to function as needed. After that the various modules were merged together to give us the proposed system.

Html, CSS and JavaScript were used to design the interfaces or pages, Php and MySQL were used to store customer details, sales, orders and product categories and brands.

4.1 Guest Home Page



4.2 Customer Registration Session

This the page the customer has to register with the company by providing his or her details.

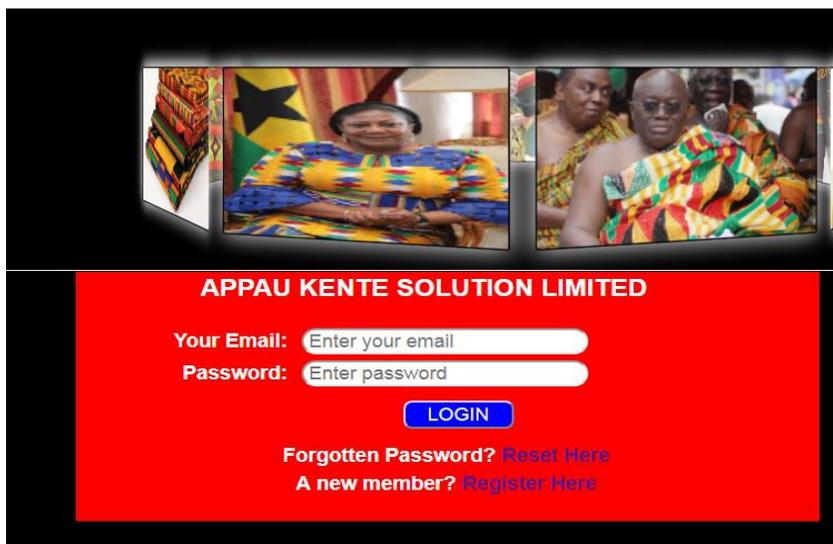


The registration form is set against a red background. At the top, there are three small images: a woman in a graduation gown, a man in a patterned jacket, and a woman in a colorful wrap. Below the images, the text "CREATE AN ACCOUNT" is centered. The form fields are as follows:

- Name:
- Email:
- Password:
- Country:
- City:
- Mobile Number:
- Address:
- Image: No file chosen

4.3 Customer Login session

After the customer has registered with the company, he or she will be authenticated with the customer email and password.



The login form is set against a red background. At the top, there are three small images: a stack of colorful fabrics, a woman in a colorful wrap, and a man in a colorful wrap. Below the images, the text "APPAU KENTE SOLUTION LIMITED" is centered. The form fields are as follows:

- Your Email:
- Password:

[Forgotten Password? Reset Here](#)
[A new member? Register Here](#)

4.4 Reset Password

Here, customer can reset his or her forgotten password by providing below an email address where the new password will be send to.



APPAU KENTE SOLUTION LIMITED

Your Email:

Password:

[LOGIN](#)

Forgotten Password? [Reset Here](#)
A new member? [Register Here](#)

Enter your email below, your password will be send through the email.

Email: [GET PASSWORD](#)

4.5 Customer Welcome Page



Home Products Contact Us My Account History Sign Up Basket Help Search a Product Search

Welcome: kmichael56@yahoo.com - Shopping - Total Items: 0 - Total Price: 00 - Go to Cart - Logout

Categories

- Clothes
 - Men Wear
 - Women Wear
 - Women Bags
 - Funeral Wear
 - Festive Wear

Brand

- Adwinsa
- Sika Futuro
- Ayempem
- Emaa Da
- Kyeretwie
- Nyankonton

Nyankonton design



Classic Men Wear



Quality Cloth



4.6 Customer Account Page

After the customer is registered with the company. A new account page is provided in which he or she can manage his or her own account.

Home All Products Contact Us My Account History Basket Help

Profile **Welcome! kmichael55@yahoo.com** [Logout](#)



- [My Account](#)
- [My Orders](#)
- [Edit Account](#)
- [Change Password](#)
- [Delete Account](#)
- [Send Message](#)
- [Logout](#)

MANAGE YOUR ACCOUNT HERE

IMPORTANT!

You have 2 Pending Order(s)
Please you can see orders details by clicking this [LINK](#) or you can [Pay Offline](#)

4.7 Update Account

Here, customer can update his or her details from this session.

Profile **Welcome! kmichael55@yahoo.com** [Logout](#)



- [My Account](#)
- [My Orders](#)
- [Edit Account](#)
- [Change Password](#)
- [Delete Account](#)
- [Send Message](#)
- [Logout](#)

MANAGE YOUR ACCOUNT HERE

UPDATE YOUR ACCOUNT:

Customer Name:

Customer Email:

Customer Password:

Customer Country:

Customer City:

Mobile Number:

Customer Address:

Customer Image: No file chosen 

4.7 Delete Account

This session allows customer to delete his or her account with the company.

| | | |
|---|--|---------------|
| Profile | Welcome! kmichael55@yahoo.com | Logout |
|  My Account My Orders Edit Account Change Password Delete Account Send Message Logout | MANAGE YOUR ACCOUNT HERE <p style="text-align: center;">Are you sure you really want to delete your account?</p> <p style="text-align: center;"><input type="button" value="Delete Account"/> <input type="button" value="Undelete Account"/></p> | |

4.9 Change Password

A new password can be set up by the customer himself or herself when found necessary

| | | |
|---|---|---------------|
| Profile | Welcome! kmichael55@yahoo.com | Logout |
|  My Account My Orders Edit Account Change Password Delete Account Send Message Logout | MANAGE YOUR ACCOUNT HERE <p style="text-align: center;">Change your password:</p> <p>Enter Current Password: <input type="text" value="Enter current password"/></p> <p>Enter New Password: <input type="text" value="Enter new password"/></p> <p>Enter New Password Again: <input type="text" value="Re-type new password"/></p> <p style="text-align: center;"><input type="button" value="Change Password"/></p> | |

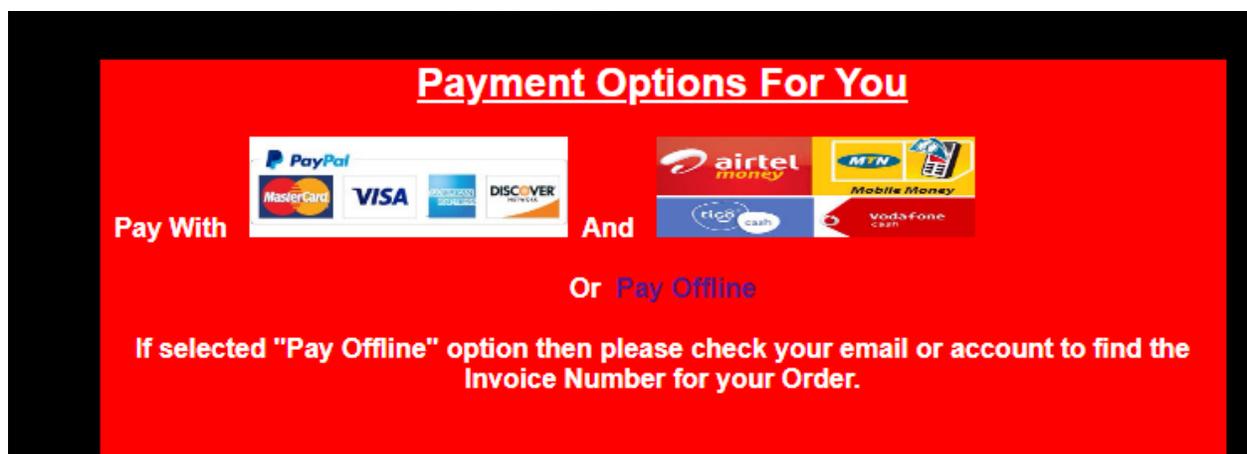
4.10 Checkout Page

This page allows customer to make payment for products added to chart or basket.



4.11 Payment Option (offline or online)

Customer can make both online payments especially those outside Ghana can make payments through PayPal and those in Ghana can make offline payment through mobile money (Momo account) since during the time of this project, Ghana was blacklisted from using PayPal account.



4.12 Offline Payment Methods

With offline payments, customers can pay through Western Union, Banks and Mobile Money.

| OFFLINE PAYMENT METHODS | |
|-------------------------|--|
| BANK ACCOUNT DETAILS: | Bank Name: UBA Account Number: 1908005471526936 Branch code: 4325 Branch Name: Alaba road, Ash Town |
| MOBILE MONEY DETAILS: | Vendor: MTN Name: Michael Anokye Mobile Number: +233540227792 |
| WESTERN UNION DETAILS: | Full Name: Anokye Michael N.I.C #: 12457892147 Mother Name: Alice Amoah Country: Ghana |

View Customer Order (s)

This session allows customer to view all orders and confirm payment for the items.

| Profile | Welcome! kmichael55@yahoo.com | Logout | | | | | | | | | | | | | | | | | | | | | |
|---|---|------------|----------------|---------------------|----------------|---------------------------------|-------------|--------|---|-----|------------|---|---------------------|--------|---------------------------------|---|-----|------------|---|---------------------|--------|---------------------------------|--|
|  My Account My Orders Edit Account Change Password Delete Account Send Message Logout | <h3>MANAGE YOUR ACCOUNT HERE</h3> <h4>ALL ORDERS DETAIL:</h4> <table border="1"><thead><tr><th>Order No</th><th>Due Amount</th><th>Invoice No</th><th>Total Products</th><th>Order Date</th><th>Paid/Unpaid</th><th>Status</th></tr></thead><tbody><tr><td>2</td><td>100</td><td>1071116503</td><td>1</td><td>2019-01-22 09:09:08</td><td>Unpaid</td><td>Confirm Payment</td></tr><tr><td>3</td><td>800</td><td>1321326294</td><td>2</td><td>2019-03-04 19:04:20</td><td>Unpaid</td><td>Confirm Payment</td></tr></tbody></table> | Order No | Due Amount | Invoice No | Total Products | Order Date | Paid/Unpaid | Status | 2 | 100 | 1071116503 | 1 | 2019-01-22 09:09:08 | Unpaid | Confirm Payment | 3 | 800 | 1321326294 | 2 | 2019-03-04 19:04:20 | Unpaid | Confirm Payment | |
| Order No | Due Amount | Invoice No | Total Products | Order Date | Paid/Unpaid | Status | | | | | | | | | | | | | | | | | |
| 2 | 100 | 1071116503 | 1 | 2019-01-22 09:09:08 | Unpaid | Confirm Payment | | | | | | | | | | | | | | | | | |
| 3 | 800 | 1321326294 | 2 | 2019-03-04 19:04:20 | Unpaid | Confirm Payment | | | | | | | | | | | | | | | | | |

4.13 Confirm Payment Page

Payment methods include bank transfers, Western Union, Mobile Money, and PayPal.

Appau Kente Solution Limited
Please Confirm Your Payment Below

Invoice Number:

Amount Sent:

Select Payment Mode:

Transaction/Reference ID:

Code:

Payment Date:

4.14 History Page

Hello. Please you are welcome to our history session.



Asantehene Otumfuo Osei Tutu II (King of Ashanti)



INTRODUCTION

Kente is a ceremonial cloth which is hand woven on a horizontal treadle loom. Kente comes in strips measuring about 4 inches wide and sewn together into larger pieces of cloth. It comes in variety of colours and different designs.

Kente Royal cloths are very vital for their rich colours and meaningful designs. In fact the prominence of the Asante Monarchy is interfused with the kente cloth. The kente weavers give the each piece of cloth philosophical, historical, divine name and meaning. The origin of kente dates as far back as 17th century. Men cloth is made of 12 yards and women cloth consists of 6 yards. The type of designs, patterns, colours and type of thread to be used determine the quality and cost of the material to be wove. The kente cloth consists of strips and 7 strips makes one yard.

HISTORY OF KENTE

Legend has it that in the middle part of the 17th

4.15 Help Session

Hello. Please what can we help you with?

| | |
|--|--|
|  <p>Your Orders</p> <ul style="list-style-type: none">• Track Packages• Edit or cancel orders |  <p>Returns and Refunds</p> <ul style="list-style-type: none">• Return or Exchange Items• Print return mailing labels |
|  <p>Payments</p> <ul style="list-style-type: none">• Add payment methods• Edit payment methods |  <p>Account</p> <ul style="list-style-type: none">• Change email or password• Update login information |
|  <p>Troubleshoot</p> <ul style="list-style-type: none">• Find device help and support• Troubleshoot device issues |  <p>Secure Surfing</p> <ul style="list-style-type: none">• Change email or password• Update login information |

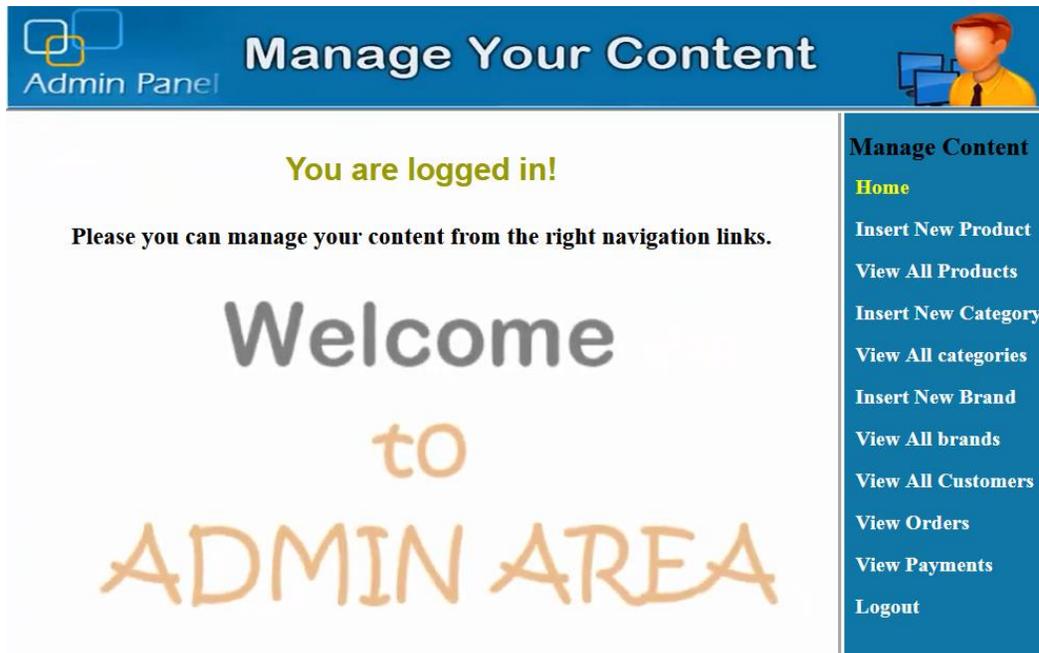
4.16 Administrator Login Page

This page authenticates administrator and authorization is granted to manage both all products categories, brands and also view customers and payments.



4.17 Admin Home Page

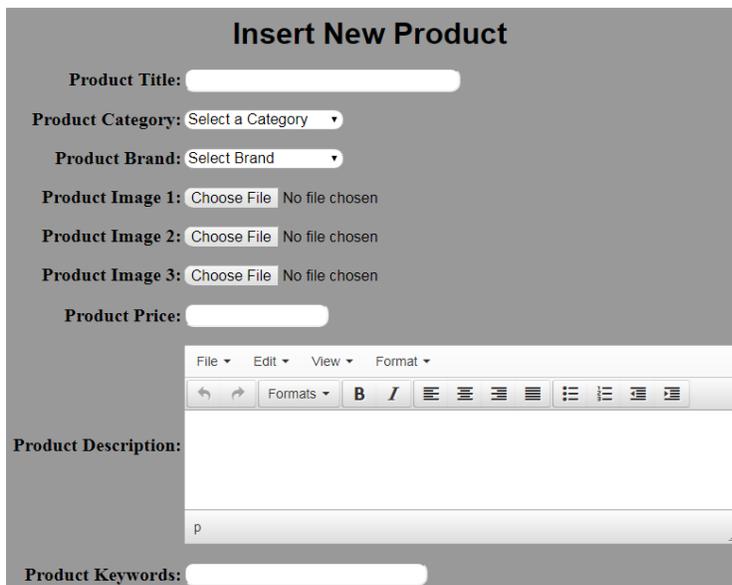
This page contains all the activities entrusted to the administrator to manage.



The screenshot shows the 'Admin Panel' interface. At the top, there is a blue header with the text 'Admin Panel' and 'Manage Your Content' next to a user icon. Below the header, a green message says 'You are logged in!'. A central message reads 'Please you can manage your content from the right navigation links.' Below this, a large 'Welcome to ADMIN AREA' message is displayed. On the right side, a blue sidebar titled 'Manage Content' contains a list of navigation links: Home, Insert New Product, View All Products, Insert New Category, View All categories, Insert New Brand, View All brands, View All Customers, View Orders, View Payments, and Logout.

4.18 Insert New Product:

This allow in an insertion of new item by filling the require fields before clicking on the add button.



The screenshot shows the 'Insert New Product' form. It includes the following fields and controls:

- Product Title:** A text input field.
- Product Category:** A dropdown menu with the text 'Select a Category'.
- Product Brand:** A dropdown menu with the text 'Select Brand'.
- Product Image 1:** A 'Choose File' button and the text 'No file chosen'.
- Product Image 2:** A 'Choose File' button and the text 'No file chosen'.
- Product Image 3:** A 'Choose File' button and the text 'No file chosen'.
- Product Price:** A text input field.
- Product Description:** A rich text editor with a toolbar containing 'File', 'Edit', 'View', 'Format', 'Formats', 'B', 'I', and various alignment and list icons.
- Product Keywords:** A text input field.

4.19 View Products

This allows admin to retrieve all products found within the database, can edit and delete an unwanted product all together.

| View Products | | | | | | | |
|---------------|-------------------|--|-------|------------|--------|----------------------|------------------------|
| Product No. | Title | Image | Price | Total Sold | Status | Edit | Delete |
| 1 | Nyankonton design |  | C700 | 0 | on | Edit | Delete |
| 2 | Nice Stole |  | C120 | 0 | on | Edit | Delete |
| 3 | Sika Futuro |  | C100 | 1 | on | Edit | Delete |
| 4 | Classic Men Wear |  | C200 | 0 | on | Edit | Delete |
| 5 | Quality Cloth |  | C300 | 0 | on | Edit | Delete |
| 6 | Quality Cloth |  | C140 | 0 | on | Edit | Delete |
| 7 | Nice Cloth |  | C300 | 0 | on | Edit | Delete |
| 8 | Nice Cloth |  | C500 | 1 | on | Edit | Delete |

4.20 Insert Into Category

This session allows an admin to insert a particular product category.



Manage Your Content



INSERT NEW CATEGORY

Insert Category:

Welcome to ADMIN AREA

- Manage Content
- Home
- Insert New Product
- View All Products
- Insert New Category
- View All categories
- Insert New Brand
- View All brands
- View All Customers
- View Orders
- View Payments
- Logout

4.21 View Categories

This contains all products categories, can edit and delete them all together.

| View All Categories | | | |
|---------------------|----------------|----------------------|------------------------|
| Category ID | Category Title | Edit | Delete |
| 1 | Clothes | Edit | Delete |
| 2 | Men Wear | Edit | Delete |
| 4 | Women Wear | Edit | Delete |
| 5 | Women Bags | Edit | Delete |
| 8 | Funeral Wear | Edit | Delete |
| 9 | Festive Wear | Edit | Delete |

to
ADMIN AREA

- Manage Content
- Home
- Insert New Product
- View All Products
- Insert New Category
- View All categories
- Insert New Brand
- View All brands
- View All Customers
- View Orders
- View Payments
- Logout

4.22 Insert Brand

It allows an admin to insert a new brand

INSERT NEW BRAND

Insert Brand:

Welcome
to
ADMIN AREA

4.23 View Brands

It allows modification and deletion of brand if found necessary by administrator.

| View All Brands | | | | |
|-----------------|------------------|----------------------|------------------------|--|
| Brand ID | Brand Title | Edit | Delete | |
| 1 | Adwinsa | Edit | Delete | |
| 2 | Sika Futuro | Edit | Delete | |
| 3 | Ayempem | Edit | Delete | |
| 4 | Emaa Da | Edit | Delete | |
| 5 | Kyeretwie | Edit | Delete | |
| 6 | Nyankonton | Edit | Delete | |
| 7 | Abusua Yedom | Edit | Delete | |
| 8 | Toku Kra Toma | Edit | Delete | |
| 9 | Obaakofo Mmu Man | Edit | Delete | |
| 10 | Nsasaawa | Edit | Delete | |

4.24 View Customers

All customers can be view form this page.

| View All Customers | | | | | | Manage Content |
|--------------------|--------|----------------------|---|---------|------------------------|----------------------|
| S.N | Name | Email | Image | Country | Delete | |
| 1 | Anokye | kmichael55@yahoo.com |  | Ghana | Delete | Home |

Welcome
to
ADMIN AREA

- [Insert New Product](#)
- [View All Products](#)
- [Insert New Category](#)
- [View All categories](#)
- [Insert New Brand](#)
- [View All brands](#)
- [View All Customers](#)
- [View Orders](#)
- [View Payments](#)
- [Logout](#)

4.25 View Orders

This session allows an admin to view all customer orders and can choose to delete an order also.

| View All Orders | | | | | | |
|-----------------|----------------------|-------------|--------|-----|---------|------------------------|
| Order No. | Customer Email | Invoice No. | Pro ID | QTY | Status | Delete |
| 1 | kmichael55@yahoo.com | 1071116503 | 6 | 1 | Pending | Delete |
| 2 | kmichael55@yahoo.com | 1321326294 | 13 | 1 | Pending | Delete |

Welcome

to

ADMIN AREA

Manage Content
[Home](#)
[Insert New Product](#)
[View All Products](#)
[Insert New Category](#)
[View All categories](#)
[Insert New Brand](#)
[View All brands](#)
[View All Customers](#)
[View Orders](#)
[View Payments](#)
[Logout](#)

4.25 View Payment

This session allows an admin to view payments and their mode of payment.



Manage Your Content

| View All Payments | | | | | | |
|-------------------|-------------|-------------|----------------|---------|-------|--------------|
| Payment No. | Invoice No. | Amount Paid | Payment Method | Ref No. | Code | Payment Date |
| 1 | 1071116503 | 700 | Bank Transfer | 124578 | 50002 | 2019-01-22 |

Welcome

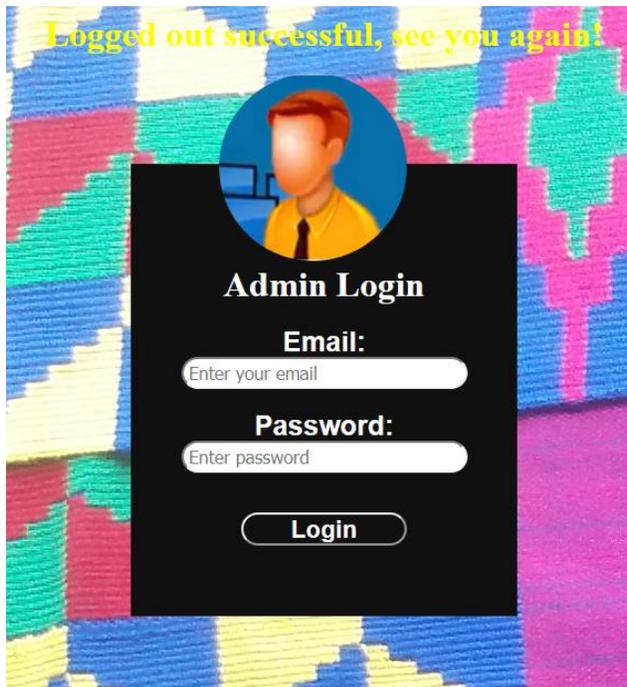
to

ADMIN AREA

Manage Content
[Home](#)
[Insert New Product](#)
[View All Products](#)
[Insert New Category](#)
[View All categories](#)
[Insert New Brand](#)
[View All brands](#)
[View All Customers](#)
[View Orders](#)
[View Payments](#)
[Logout](#)

4.26 Admin Logout

This session closes the admin page.



4.27 Texting and Implementation

At this stage of the model, a check was carried out on both smaller components and later join them to make a whole system. The system was tested in ascertaining develop system is free from virus and is able to perform particular task built for. Later the electronic commerce website was put to use by hosting it online.

4.3 Maintenance

Building a new system is not difficult as maintaining and system maintenance comes with additional cost. A new system has to be maintain after several year(s) in operation to ensure that it works to perfection and new features are added to it also.

After the software has been deployed to the client, our duty is to officially monitor our client website to view various activities and propose suggestions when needed.

If the administrator or customers suggest changes or enhancements on the website, the whole process would begin by starting from new requirement through to the final part.

At this stage, the electronic commerce website is updated to:

- Meet the changes the customer want.
- Adapted to accommodate changes in the external environment.
- Correct errors and oversights previously undetected.

After all these, observation would be made for feed backs from the clients (administrator and customers) in order to ascertain that the right system was built.

CHAPTER FIVE

CONCLUSION

In conclusion, the development of an electronic commerce website has offered us the opportunity to experience the practical aspect of our training as computer science students through the help of our supervisor and the use of the computer science process.

We have proposed an online shopping system that enables safe and secure transaction and require less skills in Information technology using it. The online shop is developed to suit the client's needs.

We hope this knowledge acquired would benefit us to develop more complex software in the future.

5.1 Limitations

1. In Mozilla Firefox, most button links do not work.
2. Google Chrome makes all header links visited.
3. Maximum security was not achieved such as attacks against SQL injection, and among others.

5.2 Future Works

1. News feeds would be provided.
2. Educational links and gadgets (calculator, currency convertor, etc.) would be added to the user session.
3. Users security would be upgraded which would serve as a solution to malware threats.
4. The company will be hosting the website locally on its own server(s).
5. Mobile Money APIs integration in online payment will be done.

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