DESIGN AND IMPLEMENTATION OF AN ONLINE MULTI-VENDOR TRADING PLATFORM FOR STUDENTS – UxTrade

By

EFOSA BLOSSOM UYIOGHOSA

PSC1808805

DEPARTMENT OF COMPUTER SCIENCE

FACULTY OF PHYSICAL SCIENCE

UNIVERSITY OF BENIN

BENIN CITY

JUNE, 2023.

DESIGN AND IMPLEMENTATION OF AN ONLINE MULTI-VENDOR TRADING PLATFORM FOR STUDENTS – UxTrade

By

EFOSA BLOSSOM UYIOGHOSA

PSC1808805

BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE BACHELOR OF SCIENCE(B.Sc) DEGREE IN COMPUTER SCIENCE, UNIVERSITY OF BENIN, BENIN CITY.

JUNE, 2023.

CERTIFICATION

This is to certify that this project work was carried out by EFOSA BLOSSOM UYIOGHOSA, in the Department of Computer Science of the Faculty of Physical Sciences, University of Benin.

_____ _____

Mr Obasohan E.E. Date

(Project Supervisor)

APPROVAL

This Project work is thereby approved by the Department of Computer science, Faculty of Physical Sciences, University of Benin, in partial fulfillment for the award of the award of Bachelor of Science (B.Sc) degree in Computer Science.

_____ _____

Prof. (Mrs.) A.O. Egwali Date

(Head of Department)

DEDICATION

This Project work is dedicated to God Almighty, the custodian of all wisdom, knowledge and understanding, for the grace, insight, and divine health throughout the course of this work.

ACKNOWLEDGEMENT

I wish to appreciate and give all glory to God Almighty for his abundance grace, guidance and protection throughout the period of this study. I sincerely acknowledge with great gratitude my supervisor Mr. Obasohan E.E for his support, encouragement, suggestions, advice and time he spent putting me through this project despite his busy schedule.

I also want to appreciate everyone that helped me throughout the period of this study, My Parents (Mr. and Mrs. Efosa), My Elder Sister (Mrs. Ighiesteme), My Elder Brother (Mr. Promise) and My Younger Sister (Miss Praise).

ABSTRACT

In an era marked by digital transformation and evolving consumer behaviors, the need for efficient and user-friendly online trading platforms has grown significantly. This document presents the design and implementation of a specialized online multi-vendor trading platform tailored to the unique requirements of students, developed using the PHP programming language.

The platform addresses the challenges faced by students in buying and selling various products, textbooks, and services within the academic community. With a focus on user experience, security, and scalability, this project offers a comprehensive solution to bridge the gap between student buyers and sellers.

Key features include user-friendly registration and product listing interfaces, secure payment processing, real-time communication channels, and a rating system for vendors. The use of PHP, a widely adopted server-side scripting language, ensures robustness and flexibility in the platform's architecture.

Throughout the development process, modern web development techniques and best practices were employed to ensure compatibility across multiple devices and browsers. Additionally, security measures were implemented to safeguard user data and financial transactions, promoting trust and reliability within the student community.

The implementation of this online multi-vendor trading platform represents a valuable contribution to the academic ecosystem, offering students an efficient and convenient means of trading products and services while fostering a sense of community engagement and entrepreneurship. Future enhancements and potential areas for expansion are also discussed, highlighting the platform's adaptability to evolving student needs and preferences.

In summary, this project showcases the successful design and deployment of an online multi-vendor trading platform, demonstrating the potential for similar solutions in niche markets. It underscores the importance of user-centric design and technological innovation in addressing the evolving demands of the digital age.

CHAPTER ONE

INTRODUCTION

Trading refers to the practice of buying and selling financial instruments, such as stocks, bonds, commodities, or currencies, with the aim of making a profit from short-term price fluctuations. It is a common activity in financial markets and can be conducted by individual traders, institutional investors, and financial firms.

However in this case, Trading on campus refers to the practice of buying and selling goods or services within a college or university environment. It often involves student-run businesses or initiatives that aim to provide convenient and accessible products or services to the campus community. Here are some key points about trading on campus:

- Student Entrepreneurship: Trading on campus provides an avenue for student entrepreneurs to showcase their skills, creativity, and business acumen. It allows students to turn their ideas into tangible products or services and gain practical experience in running a business.

- Product and Service Diversity: Trading on campus leads to a diverse range of products and services being available to students. This could include items like clothing, accessories, artwork, handcrafted goods, food and beverages, tutoring services, and more. It enhances the campus experience by offering unique and tailored offerings.

- Convenience and Accessibility: Trading on campus brings convenience to students by providing easily accessible goods and services right within their academic environment. It saves them time and effort by eliminating the need to travel off-campus for certain purchases or services.

- Community Building: Trading on campus fosters a sense of community among students, as they support their peers' ventures. It creates opportunities for networking, collaboration, and connecting with like-minded individuals. It can also serve as a platform for students to engage in social or philanthropic initiatives.

- Skill Development: Engaging in trading activities on campus allows students to develop essential skills such as entrepreneurship, marketing, sales, customer service, financial management, and problem-solving. It provides practical learning experiences that complement their academic studies.

- Learning Opportunity: Trading on campus offers students the chance to learn about various aspects of business, including market research, pricing strategies, inventory management, and customer feedback. They can gain insights into the challenges and rewards of operating a business in a real-world setting.

- Financial Independence: For student entrepreneurs, trading on campus can generate income and contribute to their financial independence. It allows them to earn money while pursuing their studies and potentially develop a foundation for future business endeavors.

Online Trading or E-commerce, short for electronic commerce, refers to the buying and selling of goods and services over the internet. It has revolutionized the way businesses operate and consumers shop by eliminating geographical barriers and providing convenient online transactions. Here are some key points about e-commerce:

- Online Retail: E-commerce has transformed the retail industry, allowing businesses to set up virtual storefronts and sell products directly to consumers through websites or online marketplaces. Customers can browse catalogs, compare prices, make purchases,

and have products delivered to their doorsteps, offering a convenient and efficient shopping experience.

- Global Reach: One of the major advantages of e-commerce is its ability to reach a global audience. Businesses can expand their customer base beyond local markets and tap into international markets without the need for physical store locations in each region. This opens up opportunities for businesses of all sizes to access a wider customer pool.

- Diverse Business Models: E-commerce encompasses various business models, including business-to-consumer (B2C), business-to-business (B2B), consumer-to-consumer (C2C), and more. B2C e-commerce involves selling products or services directly to individual consumers, while B2B e-commerce focuses on transactions between businesses. C2C e-commerce platforms enable individuals to sell products to other individuals through online marketplaces.

- Mobile Commerce: With the widespread use of smartphones and mobile devices, e-commerce has expanded into the realm of mobile commerce or m-commerce. Consumers can now make purchases, browse products, and engage in online transactions using mobile apps or optimized websites. Mobile commerce provides greater flexibility and convenience, catering to the on-the-go lifestyle of consumers.

- Payment and Security: E-commerce relies on secure online payment methods to facilitate transactions. This includes options such as credit/debit cards, digital wallets, and electronic fund transfers. Security measures, such as encryption and secure payment gateways, are in place to protect sensitive customer information and ensure safe online transactions.

- Personalization and Data Analytics: E-commerce platforms collect vast amounts of customer data, allowing businesses to personalize the shopping experience and offer targeted recommendations. Data analytics and tracking tools enable businesses to understand consumer behavior, preferences, and trends, which can inform marketing strategies and product offerings.

- Logistics and Fulfillment: E-commerce involves efficient logistics and fulfillment processes to deliver products to customers. This includes inventory management, order processing, packaging, shipping, and tracking. Businesses often collaborate with logistics partners or employ in-house fulfillment systems to ensure timely and reliable delivery.

E-commerce continues to evolve rapidly, driven by technological advancements, changing consumer behavior, and market trends. It offers immense opportunities for businesses to expand their reach, streamline operations, and provide convenient shopping experiences for consumers in the digital age.

1.1 STATEMENT OF PROBLEM

On many occasions, It has been observed that students graduating have need to sell of most of their properties since they're going to be leaving school and travelling back home most times and a lot of the times it proves to be an issue getting people to purchase these goods or they have a hard time delivering these goods to the desired costumer.

On other occasions too, student entrepreneurs want to sell some goods but have problem locating the right audience or distance barrier come in play.

At the end of the day, even if they are able to meet buyers physically (in person) and sell to them, it always tend to put a lot of stress on the seller.

Another problem noticed is that, some students want to buy a particular package or goods but have no idea where to find them…especially when they need it urgently and most times another student is trying to dispose of that same package.

Therefore, This Study aims at creating solutions to the above problems and many more…breaching the distant barrier between buyers and sellers,

Connecting sellers to buyers (either random students or student entrepreneurs), creating a platform where students can relate with other students to find any package they want to buy easily , reducing the stress on the seller by a lot.

1.2 OBJECTIVE OF STUDY

The Main Objective of this study is to design an E-commerce platform to solve the mentioned problems. The specific solutions are:

1. Breaching the distance barrier between buyers and sellers

2. Ease of trade: Making trading between users easy and stress free

3. Connecting Students

4. Creating easy revenue for students

5. Creating revenue for logistics partners

1.3 SIGNIFICANCE OF STUDY

This study bears major significance to the students and the major purpose of this study is to make trading between students of the university easier and a lot less stressful. It would of course benefit those involved, the buyers (acquiring the product they want easily and at a more favorable price), the sellers (making profit and revenue from selling those things which they may not even need easily and faster), the logistics company (delivering packages for the site is sure to bring about steady income since student buy and sell everyday and those products need to be delivered somehow).

1.4 LIMITATIONS OF STUDY

1. Restricted Development Time
2. Limited Budget
3. Personal Knowledge Restrictions

1.5 SCOPE OF STUDY

This Project would focus on building a multi-vendor E-commerce site…meaning multiple vendors (sellers) and multiple costumers (buyers) will be allowed to use the site at the same time. Therefore there'll be an interface for the vendor and a separate interface for the costumers, the costumers interface of the E-commerce site will include the Home & Login page, Sign up page, Shopping page, Shopping cart, Profile page, and Check Out page, while the vendor interface will include a Sign up page, Vendor Dashboard, Profile page, and Products page.
There would also be a third user (The Admin) which would oversee everything concerning the site, the Admin interface would include the Admin Dashboard where everything concerning the site can be accessed.

1.6 DEFINITION OF TERMS

- E-commerce : This refers to the buying and selling of goods and services over the internet.
- Vendor Dashboard: The vendor dashboard serves as a central hub for sellers to efficiently manage their activities and optimize their performance within the e-commerce marketplace or platform.
- Shopping cart: a shopping cart refers to a virtual container or system that allows online shoppers to accumulate items they intend to purchase during their browsing session. It simulates the traditional shopping experience of placing items into a physical cart or basket while shopping in a physical store
- Multi-vendor: Multi-vendor e-commerce refers to an online marketplace or platform where multiple independent sellers or vendors can sell their products or services to customers. It brings together various sellers on a single platform, allowing customers to browse and purchase products from different vendors within the same website or marketplace ecosystem.
- Signup: Signing up refers to the process of creating an account or registering for a service, platform, or website. It typically involves providing certain information and agreeing to terms and conditions to gain access to the features, functionalities, or benefits offered by the service.

- Profile page: A profile page is an online representation of an individual or entity within a website, application, or social media platform. It typically serves as a personal or business showcase, providing information, details, and a customizable space for users to present themselves to others.

CHAPTER 2

LITERATURE REVIEW

2.1 PREAMBLE

eCommerce, short for electronic commerce, refers to the buying and selling of goods and services over the internet. It has revolutionized the way businesses operate and how consumers shop. With the rapid advancement of technology and the widespread use of the internet, eCommerce has become a thriving industry, offering convenience, accessibility, and a global marketplace.

One of the key advantages of eCommerce is its convenience. Consumers can shop from the comfort of their homes or on the go using various devices such as computers, smartphones, and tablets. Online stores are open 24/7, allowing customers to make purchases at any time that suits them. This convenience factor has greatly contributed to the popularity and growth of eCommerce.

Moreover, eCommerce offers a vast array of products and services. Online marketplaces and retailers have an extensive product catalog, often surpassing what can be found in physical stores. This wide range of options enables consumers to compare prices, read reviews, and make informed purchasing decisions. It has empowered consumers by giving them more control over their shopping experiences.

Furthermore, eCommerce has eliminated geographical barriers. Traditional brick-and-mortar stores are limited to serving customers within a specific location. However, eCommerce enables businesses to reach customers worldwide. Small businesses and entrepreneurs can now compete on a global scale, accessing a larger customer base and expanding their market reach.

In addition to benefits for consumers, eCommerce offers advantages for businesses as well. Online stores have lower overhead costs compared to physical retail establishments, as they do not require physical storefronts or a large workforce. This allows businesses to offer competitive pricing and discounts to attract customers. eCommerce also enables businesses to gather and analyze data about customer preferences and behavior, which can be utilized to personalize marketing efforts and improve overall customer experience.

Despite its numerous advantages, eCommerce also presents some challenges. Security and privacy concerns, such as online fraud and data breaches, need to be addressed to maintain trust between businesses and consumers. Additionally, logistical considerations such as inventory management, shipping, and returns can be complex and require efficient systems to ensure smooth operations.

Overall, eCommerce has transformed the way we shop and conduct business. It has provided convenience, a wide range of choices, and global accessibility to consumers, while empowering businesses to reach larger audiences and streamline their operations. As technology continues to evolve, we can expect eCommerce to further expand and reshape the retail landscape.

2.2 STRUCTURE

The structure of a modern eCommerce site plays a crucial role in providing a seamless and user-friendly online shopping experience. Here are some key components typically found in the structure of a modern eCommerce site:

- Homepage: The homepage serves as the entry point to the eCommerce site. It often showcases featured products, promotions, and provides easy navigation to different product categories. The design should be visually appealing and provide a clear overview of the site's offerings.
- Product Pages: These pages provide detailed information about individual products. They typically include product images, descriptions, specifications, pricing, and customer reviews. The layout should be clean, and the information should be presented in a clear and concise manner to help customers make informed purchase decisions.
- Shopping Cart: The shopping cart is where customers can review and manage the items they intend to purchase. It should be easily accessible from any page, display the total

cost, and allow customers to modify quantities or remove items. A prominent "Checkout" button should be present to initiate the payment process.

- Search Functionality: A robust search feature allows customers to quickly find specific products or browse within categories. It should provide relevant search results, offer filtering options, and have an intuitive interface
- Navigation Menu: A well-structured navigation menu helps users explore different sections of the eCommerce site effortlessly. It often includes drop-down menus or mega-menus to display subcategories and facilitate easy navigation.
- User Accounts: User accounts allow customers to create personalized profiles, store shipping addresses, track order history, and manage preferences. It enhances the user experience by providing a convenient way for customers to access their information and streamline future purchases.
- Payment and Checkout: The checkout process should be streamlined and secure. It should offer multiple payment options, such as credit/debit cards, digital wallets, or bank transfers. A progress indicator should guide customers through the steps, including shipping address, shipping method, payment details, and order review.
- Responsive Design: With the growing usage of mobile devices, a modern eCommerce site should have a responsive design that adapts to different screen sizes. It ensures a consistent and optimized shopping experience across desktops, tablets, and smartphones.
- Trust Signals: To build trust and credibility, an eCommerce site may include trust signals such as security badges, customer reviews, testimonials, and secure payment logos. These elements reassure customers about the safety and reliability of the online shopping experience.
- Customer Support: Contact information, FAQs, live chat, or a dedicated customer support section should be readily available to assist customers with inquiries, issues, or returns. Providing prompt and helpful customer service contributes to customer satisfaction and loyalty.

Overall, the structure of a modern eCommerce site aims to provide a user-friendly interface, intuitive navigation, comprehensive product information, and secure transaction processes. It should prioritize a seamless customer experience to maximize conversions and foster long-term customer relationships.

2.3 REVIEW OF RELATED STUDIES

"The Impact of E-commerce on Business Performance: Evidence from Emerging Economies" by Chen et al. (2019): This study examines the impact of e-commerce on the performance of

businesses in emerging economies. It finds that e-commerce adoption positively influences sales revenue, market expansion, and profitability for businesses operating in these economies.

"Consumer Behavior in Online Shopping: A Literature Review" by Al-Debei et al. (2015): This literature review focuses on consumer behavior in online shopping. It explores factors influencing consumers' adoption of e-commerce, such as trust, perceived risk, convenience, and personalization. The study also highlights the role of social influence and word-of-mouth in shaping consumer behavior in online shopping.

"Mobile Commerce Adoption in Developing Countries: A Literature Review" by Mukhtar and Sahar (2019): This review paper investigates the adoption of mobile commerce (m-commerce) in developing countries. It discusses the factors affecting m-commerce adoption, such as technological infrastructure, perceived usefulness and ease of use, trust, and cultural influences. The study emphasizes the potential of m-commerce to bridge the digital divide in these countries.

"The Impact of E-commerce Logistics on Firm Performance: A Literature Review" by Ghobakhloo et al. (2019): This literature review explores the relationship between e-commerce logistics and firm performance. It discusses various aspects of e-commerce logistics, including warehousing, transportation, inventory management, and order fulfillment. The study highlights the importance of efficient logistics operations in improving customer satisfaction, reducing costs, and enhancing overall business performance.

"The Role of Social Media in E-commerce: A Systematic Literature Review" by Hsiao et al. (2020): This systematic literature review examines the role of social media in e-commerce. It analyzes how social media platforms, such as Facebook, Instagram, and Twitter, influence consumer behavior, online brand reputation, customer engagement, and purchase decision-making. The study also discusses the impact of social media marketing strategies on e-commerce success.

These studies provide valuable insights into different aspects of e-commerce, including its impact on business performance, consumer behavior, adoption in developing countries, logistics, and the role of social media. They collectively contribute to our understanding of the challenges and opportunities associated with e-commerce implementation and provide guidance for businesses and policymakers in this domain.

2.4 MORE RELATED STUDIES

The impact of e-commerce on businesses has been widely studied in the literature. Chen & Barnes (2007) conducted research on online trust and buyer behavior in the context of Taiwanese online bookstores. They found that online initial trust and familiarity with online purchasing have a positive impact on purchase intention (Chen & Barnes, 2007). The study also identified perceived technology, perceived risk, company competency, and trust propensity as determinants of online initial trust (Chen & Barnes, 2007). Another study by Chen & Barnes (2007) confirmed the importance of perceived usefulness, perceived security, perceived privacy, perceived good reputation, and willingness to customize in developing online initial trust (Chen & Barnes, 2007).

The growth of e-commerce has been recognized as a significant trend in the business world. highlighted that e-commerce is viewed as the future direction for organizations and is changing the way businesses operate (Shareef et al., n.d.). The diffusion of the internet has led to shifts in global business operations, presenting interesting and challenging issues related to the proliferation and adoption of e-commerce (Shareef et al., n.d.).

E-commerce has also been shown to have a positive impact on business transactions. Santy et al. (2021) conducted a study on the role of e-commerce in improving online business transactions. The results showed that e-commerce is useful in attracting buyers and enhancing business performance (Santy et al., 2021; . Ng, 2013) investigated the factors influencing the selection of e-commerce models in a business-to-business electronic environment. The study emphasized the importance of adopting appropriate e-commerce models to maximize success in the electronic environment (Ng, 2013).

The impact of e-commerce on small and medium-sized enterprises (SMEs) has also been explored. Nguyen & Dang (2017) examined the impact of e-commerce on Vietnamese SMEs and found that it enables access to global communication and trade, expands businesses to the global market, and increases sales while reducing costs (Nguyen & Dang, 2017). Additionally,

Llanes (2020) highlighted the potential of e-commerce as a tool to boost the development of Cuban agribusiness companies. The study proposed a strategy combining different e-commerce models and digital marketing techniques to attract new business partners and customers (Llanes, 2020).

Overall, the literature survey demonstrates that e-commerce has a significant impact on businesses, including enhancing trust, improving purchase intention, expanding market reach, and increasing business performance. The latest trends in e-commerce development include the adoption of appropriate e-commerce models, the use of digital marketing techniques, and the exploration of e-commerce opportunities for SMEs and specific industries such as agribusiness. These trends reflect the ongoing evolution and importance of e-commerce in the business landscape.

References:

Chen, Y. and Barnes, S. (2007). Initial Trust and Online Buyer Behaviour. Industrial Management & Data Systems, 1(107), 21-36. https://doi.org/10.1108/02635570710719034

Llanes, R. (2020). E-commerce As a Tool To Boost The Development Of Cuban Agribusiness Companies. Scientia Et Technica, 1(25), 120-126. https://doi.org/10.22517/23447214.22401

Ng, E. (2013). Making Strategic Decisions On B2b E-commerce Models: An Empirical Study On Australian Agribusinesses. International Journal of Electronic Commerce Studies, 1(4), 1-20. https://doi.org/10.7903/ijecs.995

Nguyen, H. and Dang, T. (2017). The Impact Of E-commerce In Vietnamese Smes. European Journal of Business Science and Technology, 2(3), 90-95. https://doi.org/10.11118/ejobsat.v3i2.106

Santy, R., Utomo, G., Utomo, G. (2021). E-transactions In Digital Era. International Journal of Research and Applied Technology, 2(1), 23-30. https://doi.org/10.34010/injuratech.v1i2.5909

Shareef, M., Dwivedi, Y., Williams, M., Singh, N. Introduction To E-commerce., 1-8. https://doi.org/10.4018/978-1-60566-412-5.ch001

Literature Survey on the Impact of E-commerce in Business and Latest Trends in E-commerce Development

The impact of e-commerce on businesses and the latest trends in e-commerce development have been the subject of recent research. Aslam et al. (2019) conducted a study on the underlying factors influencing consumers' trust and loyalty in e-commerce in Pakistan. The study found that website user interface quality, information quality, awareness of e-commerce, and perceived privacy are significant predictors of e-customer trust and e-loyalty, while perceived security risk had an insignificant impact on e-customer trust. The findings of this study contribute to enhancing customer trust and loyalty in the e-commerce industry.

Customer loyalty and trust are crucial for the long-term profitability and growth of organizations in the e-commerce domain. Holsapple & Singh (2000) proposed a unified view of electronic commerce, electronic business, and collaborative commerce from a knowledge management perspective. They argued that e-business is based on e-knowledge, which involves processes and technologies for managing knowledge. The knowledge-oriented perspective of e-commerce is beneficial in understanding and managing electronic organizations in the knowledge economy.

In terms of trends in e-commerce development, Ram & Zhang (2021) examined the needs to adopt big data analytics (BDA) in B2B organizations. Their study developed a model of needs for BDA adoption, which contributes to the understanding of technology adoption in the context of emerging technologies and B2B e-commerce. The findings of this study align with other studies published in top-tier journals, providing a foundation for further research on BDA in the B2B literature stream.

Overall, recent research has focused on understanding the factors influencing consumer trust and loyalty in e-commerce, as well as the role of knowledge management in e-commerce.

Additionally, there is a growing interest in the adoption of emerging technologies such as big data analytics in the B2B e-commerce context. These studies contribute to the ongoing development and understanding of e-commerce's impact on businesses and the latest trends in e-commerce development.

Study examines the impact of website quality on consumers' perceptions of product quality and purchase intentions in the context of e-commerce. The findings suggest that website quality plays a significant role in shaping consumers' perceptions of product quality and their intentions to make a purchase (Wells &Valacich, 2011). The study also highlights the importance of signal credibility and information asymmetries in influencing the relationship between website quality and product quality perceptions (Wells &Valacich, 2011). The implications of these findings for future research and website design are discussed.

This study investigates the factors influencing online initial trust and its impact on purchase intention in the context of Taiwanese online bookstores. The findings suggest that online initial trust is influenced by perceived technology, perceived risk, company competency, and trust propensity. Additionally, online initial trust and familiarity with online purchasing have a positive impact on purchase intention (Wells &Valacich, 2011). The study highlights the importance of building trust in the online environment to encourage purchase behavior (Wells &Valacich, 2011).

This chapter provides an introduction to e-commerce and its impact on business operations. It discusses the growth and integration of information and communication technology (ICT) and the emergence of the internet as a communication channel (Wells &Valacich, 2011). The chapter highlights the importance of e-commerce as the future direction for organizations and its role in changing the way businesses operate (Wells &Valacich, 2011). It emphasizes the need for organizations to adapt to the trends and challenges presented by e-commerce (Wells &Valacich, 2011).

This study explores the role of e-commerce in improving online business transactions. The findings suggest that e-commerce is useful in attracting buyers and enhancing business performance (Astuti &Ramayani, 2022). The study highlights the importance of e-commerce in

the digital era and its potential to transform business operations (Astuti &Ramayani, 2022). It emphasizes the need for organizations to leverage e-commerce to stay competitive and meet the evolving needs of customers (Astuti &Ramayani, 2022).

This study investigates the factors influencing the selection of e-commerce models in a business-to-business electronic environment. The findings suggest that the adoption of appropriate e-commerce models is crucial for organizations to maximize success in the electronic environment (Nurazila et al., 2023). The study emphasizes the importance of aligning e-commerce models with business objectives and strategies (Nurazila et al., 2023). It provides insights into the decision-making process for selecting e-commerce models in the context of Australian agribusinesses (Nurazila et al., 2023).

Overall, these recent studies highlight the impact of e-commerce on business and the latest trends in e-commerce development. They emphasize the importance of website quality, trust, and buyer behavior in shaping consumers' perceptions and purchase intentions (Wells &Valacich, 2011). The studies also highlight the role of e-commerce in transforming business operations, improving business transactions, and guiding strategic decisions on e-commerce models (Astuti &Ramayani, 2022; Nurazila et al., 2023). These findings contribute to the ongoing understanding and development of e-commerce in the business landscape.

, "Making Strategic Decisions on B2B E-Commerce Models: An Empirical Study on Australian Agribusinesses," International Journal of Electronic Commerce Studies (2013). doi:10.7903/ijecs.995

References:

(2011). What Signal Are You Sending? How Website Quality Influences Perceptions Of Product Quality and Purchase Intentions. Mis Quarterly, 2(35), 373. https://doi.org/10.2307/23044048

Aslam, W., Hussain, A., Farhat, K., Arif, I. (2019). Underlying Factors Influencing Consumers' Trust and Loyalty In E-commerce. Business Perspectives and Research, 2(8), 186-204. https://doi.org/10.1177/2278533719887451

Astuti, W. and Ramayani, M. (2022). E-commerce, the Digital Trend In Transaction. Journal of Business and Behavioural Entrepreneurship, 2(5), 41-50. https://doi.org/10.21009/jobbe.005.2.06

Chen, Y. and Barnes, S. (2007). Initial Trust and Online Buyer Behaviour. Industrial Management & Data Systems, 1(107), 21-36. https://doi.org/10.1108/02635570710719034

Holsapple, C. and Singh, M. (2000). Toward a Unified View Of Electronic Commerce, Electronic Business, And Collaborative Commerce: A Knowledge Management Approach. Knowledge and Process Management, 3(7), 151-164. https://doi.org/10.1002/1099-1441(200007/09)7:33.0.co;2-u

Llanes, R. (2020). E-commerce As a Tool To Boost The Development Of Cuban Agribusiness Companies. Scientia Et Technica, 1(25), 120-126. https://doi.org/10.22517/23447214.22401

Ng, E. (2013). Making Strategic Decisions On B2b E-commerce Models: An Empirical Study On Australian Agribusinesses. International Journal of Electronic Commerce Studies, 1(4), 1-20. https://doi.org/10.7903/ijecs.995

Nguyen, H. and Dang, T. (2017). The Impact Of E-commerce In Vietnamese Smes. European Journal of Business Science and Technology, 2(3), 90-95. https://doi.org/10.11118/ejobsat.v3i2.106

Nurazila, N., Hendarsyah, D., Eryana, N. (2023). The Effect Of E-commerce On People's Buying Interest In Traditional Markets. Tijab (The International Journal of Applied Business), 1(7), 01-11. https://doi.org/10.20473/tijab.v7.i1.2023.38914

Ram, J. and Zhang, Z. (2021). Examining the Needs To Adopt Big Data Analytics In B2b Organizations: Development Of Propositions And Model Of Needs. Journal of Business and Industrial Marketing, 4(37), 790-809. https://doi.org/10.1108/jbim-10-2020-0464

Santy, R., Utomo, G., Utomo, G. (2021). E-transactions In Digital Era. International Journal of Research and Applied Technology, 2(1), 23-30. https://doi.org/10.34010/injuratech.v1i2.5909

Shareef, M., Dwivedi, Y., Williams, M., Singh, N. Introduction To E-commerce., 1-8. https://doi.org/10.4018/978-1-60566-412-5.ch001

References:

Aslam, W., Hussain, A., Farhat, K., Arif, I. (2019). Underlying Factors Influencing Consumers' Trust and Loyalty In E-commerce. Business Perspectives and Research, 2(8), 186-204. https://doi.org/10.1177/2278533719887451

Chen, Y. and Barnes, S. (2007). Initial Trust and Online Buyer Behaviour. Industrial Management & Data Systems, 1(107), 21-36. https://doi.org/10.1108/02635570710719034

Holsapple, C. and Singh, M. (2000). Toward a Unified View Of Electronic Commerce, Electronic Business, And Collaborative Commerce: A Knowledge Management Approach. Knowledge and Process Management, 3(7), 151-164. https://doi.org/10.1002/1099-1441(200007/09)7:33.0.co;2-u

Llanes, R. (2020). E-commerce As a Tool To Boost The Development Of Cuban Agribusiness Companies. Scientia Et Technica, 1(25), 120-126. https://doi.org/10.22517/23447214.22401

Ng, E. (2013). Making Strategic Decisions On B2b E-commerce Models: An Empirical Study On Australian Agribusinesses. International Journal of Electronic Commerce Studies, 1(4), 1-20. https://doi.org/10.7903/ijecs.995

Nguyen, H. and Dang, T. (2017). The Impact Of E-commerce In Vietnamese Smes. European Journal of Business Science and Technology, 2(3), 90-95. https://doi.org/10.11118/ejobsat.v3i2.106

Ram, J. and Zhang, Z. (2021). Examining the Needs To Adopt Big Data Analytics In B2b Organizations: Development Of Propositions And Model Of Needs. Journal of Business and Industrial Marketing, 4(37), 790-809. https://doi.org/10.1108/jbim-10-2020-0464

Santy, R., Utomo, G., Utomo, G. (2021). E-transactions In Digital Era. International Journal of Research and Applied Technology, 2(1), 23-30. https://doi.org/10.34010/injuratech.v1i2.5909

Shareef, M., Dwivedi, Y., Williams, M., Singh, N. Introduction To E-commerce., 1-8. https://doi.org/10.4018/978-1-60566-412-5.ch001

CHAPTER 3

METHODOLOGY

3.0 Methodology

This project can be divided into two parts: The Frontend and The Backend. The Backend was designed using object-oriented methods. It was written in mainly PHP using Object-Oriented Programming (OOP).

3.1 OBJECT-ORIENTED PROGRAMMING

Object-Oriented Programming (OOP) is a programming paradigm that organizes code and data into self-contained units called objects. It provides a structured and modular approach to software development, emphasizing the concepts of encapsulation, inheritance, and polymorphism. OOP aims to model real-world entities and their interactions, making it a powerful and intuitive way to design and manage complex software systems.

Key Concepts of OOP:

1) Classes and Objects: A class is a blueprint or template that defines the properties (attributes) and behaviors (methods) that an object of that class will possess. An object is an instance of a class, created based on the class's blueprint.
2) Encapsulation: Encapsulation refers to the bundling of data (attributes) and the methods that operate on that data into a single unit (object). This helps in controlling access to data, ensuring data integrity, and promoting modular design.
3) Inheritance: Inheritance allows a class (subclass or derived class) to inherit properties and behaviors from another class (superclass or base class). This promotes code reuse and hierarchy in software design.
4) Polymorphism: Polymorphism enables objects of different classes to be treated as instances of a common superclass. It allows methods to be defined in a generic way, and

specific implementations are determined at runtime. This enhances flexibility and extensibility in code design.

Benefits of OOP:

1) Modularity: OOP encourages the creation of modular and reusable code, making it easier to maintain and extend software systems.
2) Abstraction: Abstraction allows developers to focus on essential aspects of an object and ignore irrelevant details. This simplifies complex systems and improves clarity.
3) Encapsulation: By encapsulating data and methods, OOP enforces data hiding and access control, enhancing security and preventing unintended interference.
4) Code Reusability: Inheritance and polymorphism facilitate code reuse, reducing development time and effort.
5) Flexibility: OOP allows for dynamic and runtime binding of methods, making it possible to change behavior without altering the calling code.
6) Scalability: OOP provides a structured approach to designing large and complex applications, making them more manageable and scalable.

Examples of OOP Languages:

1) Java: Java is a popular OOP language known for its platform independence and extensive use of classes and objects.
2) Python: Python supports OOP principles and provides a simple syntax, making it suitable for beginners and experienced developers alike.
3) C++: C++ is an extension of the C programming language that includes OOP features like classes, objects, and inheritance.
4) C#: C# is a Microsoft-developed language that heavily emphasizes OOP concepts and is commonly used for Windows applications.
5) Ruby: Ruby is known for its elegant and flexible OOP implementation, making it a favorite among web developers.

In conclusion, Object-Oriented Programming is a powerful paradigm that promotes modular, organized, and efficient software development through concepts like classes, objects, encapsulation, inheritance, and polymorphism. It has played a significant role in shaping the

modern software industry by enabling the creation of complex, maintainable, and scalable applications.

3.2 PHP AS AN OBJECT-ORIENTED PROGRAMMING LANGUAGE

PHP (Hypertext Preprocessor) is indeed an object-oriented programming (OOP) language. While PHP started as a procedural scripting language for web development, it has evolved over the years to include robust support for object-oriented programming.

PHP introduced object-oriented features in version 3, and since then, its OOP capabilities have been greatly enhanced.

Some key object-oriented features of PHP include:

1) Classes and Objects: PHP allows you to define classes and create objects just like in other OOP languages. You can encapsulate data and methods within classes and instantiate objects based on those classes.
2) Inheritance: PHP supports class inheritance, enabling you to create subclasses that inherit properties and methods from parent classes. This promotes code reuse and modular design.
3) Encapsulation: PHP lets you define access modifiers (public, private, protected) for class members, allowing you to control access to data and methods within objects.
4) Polymorphism: PHP supports polymorphism through method overriding and interfaces, allowing objects of different classes to be treated as instances of a common interface.
5) Abstraction: You can create abstract classes and methods in PHP, which provide a blueprint for subclasses to implement. This promotes abstraction and modularity in code design.
6) Magic Methods: PHP includes "magic" methods (prefixed with double underscores), which allow you to define how objects respond to certain actions, such as instantiation, property access, and method calls.
7) Namespaces: Namespaces in PHP help organize and encapsulate classes and functions, preventing naming conflicts and providing better code organization.
8) Autoloading: PHP provides autoloading mechanisms that automatically load class files when they're needed, reducing the need for manual inclusion.

While PHP has embraced object-oriented programming, it's important to note that it also retains support for procedural programming, which means you can mix OOP and procedural styles within the same application. This flexibility allows developers to choose the most suitable approach based on the project's requirements and their own preferences.

3.3 SYSTEM ANALYSIS

It is the process of gathering and interpreting data, figuring out problems, and breaking down a system into its constituent parts. It entails taking a broad view of the system, dissecting its components, and understanding how it functions to accomplish a specific objective.

System analysis is conducted to study a system or its parts to identify its objectives. It is a problem-solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose. Users of the current system can provide information, and information can also be acquired by reviewing papers that are typically produced as the system is used.

Two major methods for systems analysis and design are

1. Object-Oriented Analysis and Design Method
2. Structured System Analysis and Design Method

For this project, the Object-oriented Analysis and DesignMethod was used as the methodology (OOAD). In the object-oriented approach, the focus is on capturing the structure and behaviour of information systems into small modules that combine both data and process. The main aim

of Object Oriented Analysis and Design (OOAD) is to improve the quality and productivity of system analysis and design by making it more usable.

3.4 ANALYSIS OF EXISTING SYSTEMS

The E-commerce market is very saturated in Nigeria, some popular examples are Jumia, Konga, Ali Express, e.t.c. Jumia was used as a study of an existing system within the Nigeria context.

An examination of the current system was performed to find any issues and, if any flaws were discovered, to validate the new system. To accomplish this, oral interviews, observation, and testing techniques were used to build a solid foundation of knowledge needed to make judgments or offer ideas.

An explanation of each activity in detail of how the ordering process was obtained as we asked the past users of Jumia on the flow from onboarding, to the shopping of goods, to payments, and then to delivery of the items.

For the campus environment, there was no online platform that accommodated the vendors on campus, most especially students that trade to make income, therefore the new system will be used to make thing a lot easier, since it has been observed that the current system which entails vendors going from class to class or hostel to hostel manually looking for customers, this

is obviously a hassle, or customers looking for a particular item but have no one or nowhere to get it from.

3.5 PROBLEM OF EXISTING SYSTEMS

The following problems with the current system were found after a thorough analysis:

1. The existing e-commerce companies in Nigeria don't include vendors within and around the campus environment which are accessible for students and residents.
2. Due to the nature of non-computerized systems of trading existing in within and around the campus environment, mistakes are made when taking customers' orders
3. The ordering logs of vendors within and around campus are usually poor because it is done manually.

3.6 OVERVIEW OF THE PROPOSED SYSTEM

The proposed system which was name "UxTrade" as in "**U**niben E**x**change **Trade**" is a software whose sole purpose is to make trading within and around the campus easier for all users. The system was developed using relevant technologies that would enhance User Experience and User Interface.

To assist the customers and vendors in accomplishing their goals, the system should perform the following functions:

1. It will enable customers to place orders from the web on any device around the world .
2. It would notify each vendor whenever an order has been placed
3. It would allow vendors freely add new products, edit existing products or delete a particular product.

4. A well detailed order log will be designed for each vendor so they can always refer back to the records if necessary.
5. A well detailed order log will also be designed for the customer so they can always refer back to the records if necessary
6. It will enable vendors keep track of all their revenue so they know exactly how much they've made so far.
7. It would help delivery agents to get proper details of the vendors and customer involved in a particular order for quick delivery.
8. It will enable customers to negotiate prices of some products.

3.7 PROPOSED SYSTEM ARCHITECTURE

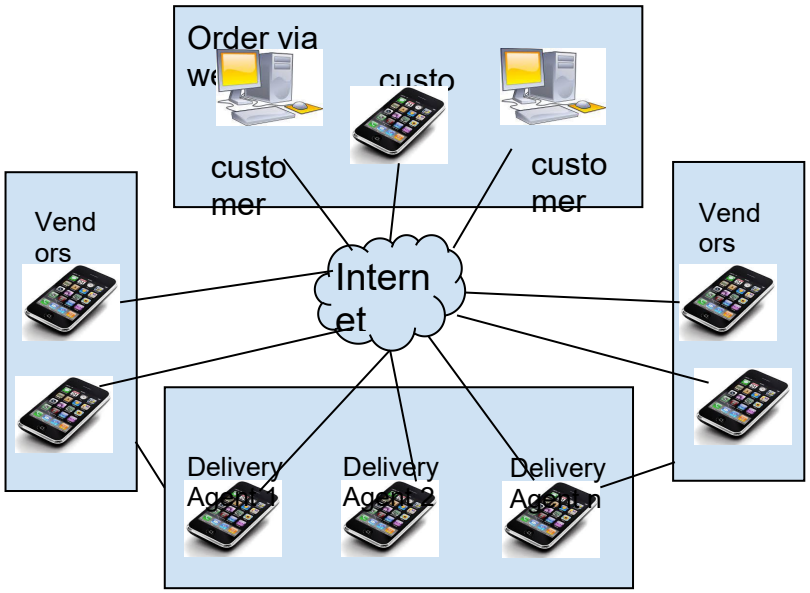


Figure 3.1 Proposed E-commerce System Architecture

3.8 SYSTEM DESIGN

It is the process of designing the architecture, components, and interfaces for a system so that it meets the end-user requirements. It may take a bottom-up or top-down approach, but either way, the process is systematic wherein it takes into account all related variables of the system that needs to be created from the architecture to the required hardware and software, right down to the data and how it travels and transforms throughout its travel through the system.

3.9 SYSTEM DESIGN TOOLS

System development requires the use of system design tools. It is comparable to creating a house's blueprint before actual construction workers. Software designers employ a variety of design tools, such as

1. **System Flow Chart:** The system flow chart is a diagrammatic representation that shows how a system operates. Compared to a long text, the diagrammatic representation is simpler to understand. One of the main tools used by the system analyst to display an overview of the processes in an entire system is the system flow chart.

2. **Data Flow Diagram (DFD):** It is a tool that defines how data moves through a system and the operations or processing that system carries out. It displays how data enters the system from external sources, how it travels from one process to another, and how it is logically stored. Every symbol used in the context diagram is also acceptable in the DFD.

3. **Unified Modelling Language (UML):** UML is a standardised language that is used to specify how to visualise, build, and document software systems as well as for business modelling. It is a crucial component of creating object-oriented software and the software development process, regardless of the chosen programming language or method.

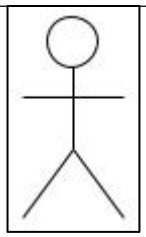
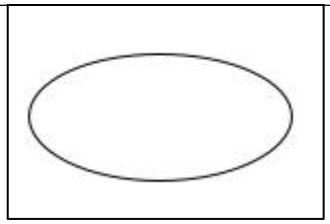
3.10 SYSTEM DESIGN TOOLS: UML

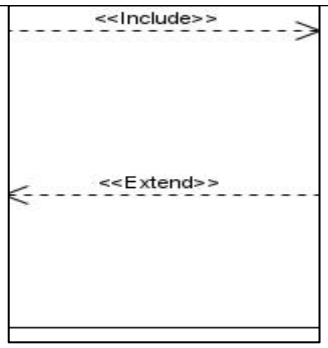
For modelling the designs for the software application, the Unified Modelling Language was used as the tool. UML diagrams such as use case diagrams, state machine diagrams, and class diagrams were utilised in order to clearly grasp how the system was designed for implementation. These elements were chosen because they are straightforward, suitable for the nature of the system, and, if properly developed, self-illustrative.

3.11 UML: USE-CASE DIAGRAM

Use-case diagrams aid in capturing the requirements for a system by modelling its behaviour. The scope and high-level functions of a system are described in use-case diagrams. The interactions between the system and its actors are also depicted in these diagrams. It shows what the system does and how the actors use it, but they do not show how the system works within.

Table 3.1 Use Case diagram notations and descriptions

Objects	Symbol	Description
Actor		They are the system's users. The actor may be a person, group, or external system. They play a part in how the system works.
Use Case		Use case is a list of steps, typically defining interactions between an actor and a system to achieve a goal.
System		A system is a rectangle spanning all the use cases in the system that defines the scope of your system. Anything within the box represents functionality that is in scope and anything outside is not

Relationship		Illustrates the relationship between an actor and a use case with a simple line. It also illustrates the relationship between use cases (include & extend)

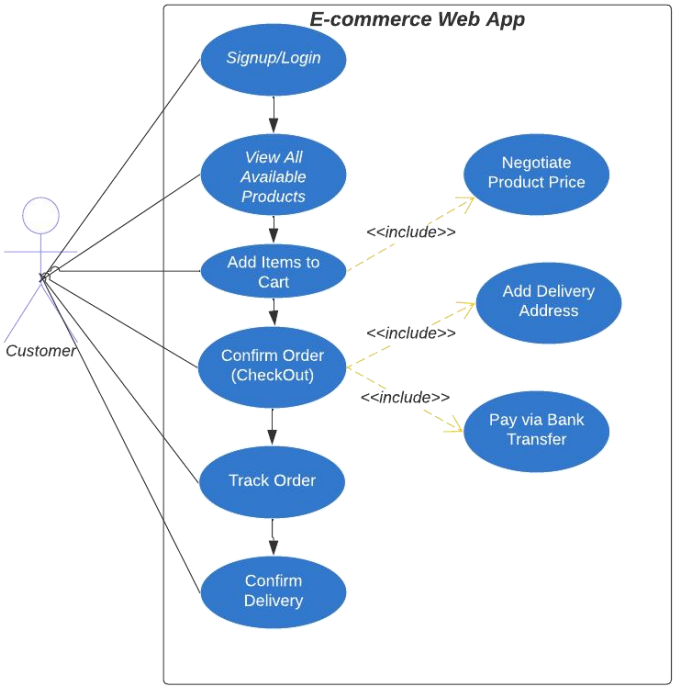


Figure 3.2: Use Case Diagram for Customer Side

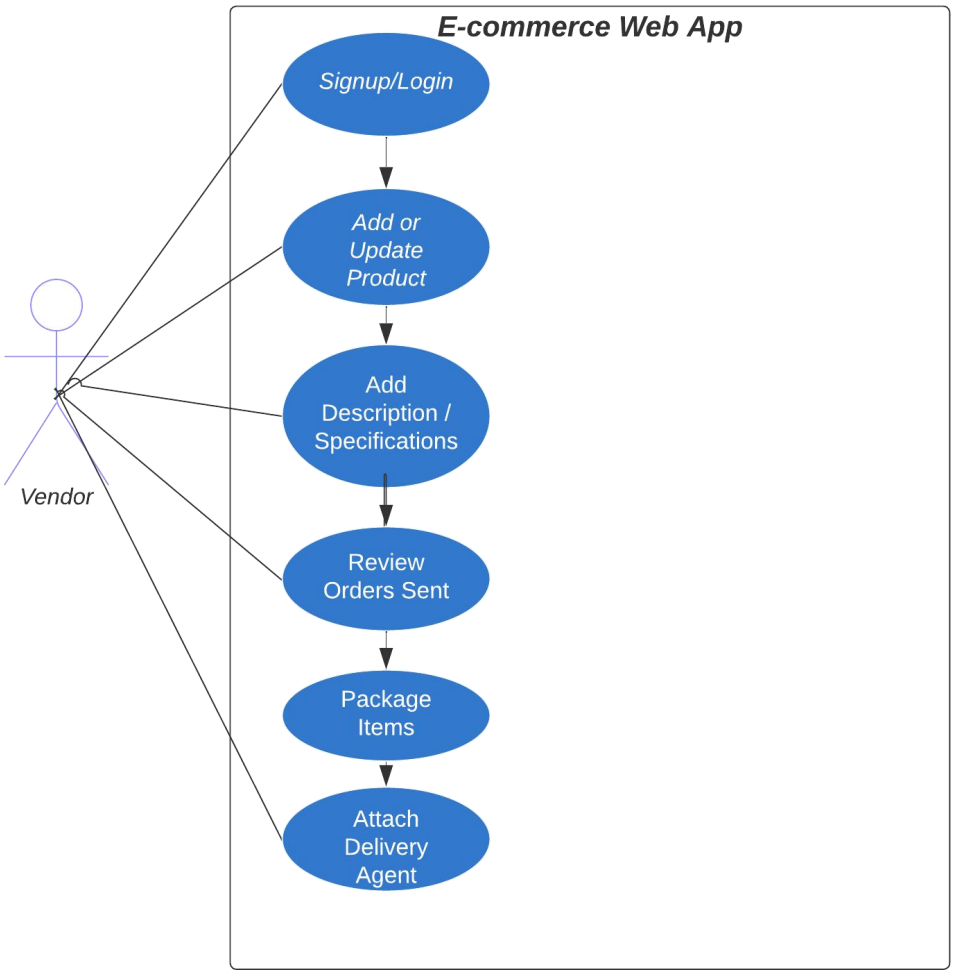


Figure 3.3: Use Case Diagram for Vendor Side

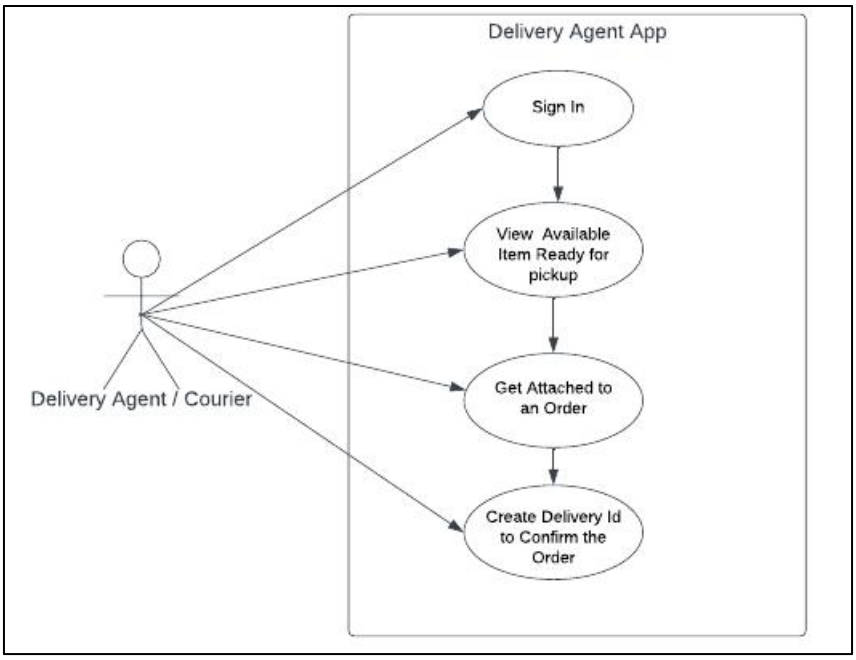
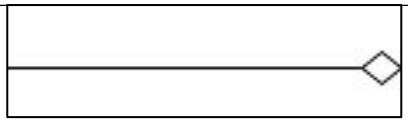


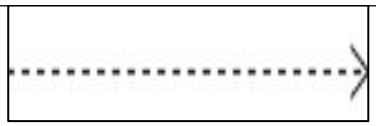
Figure 3.4: Use Case Diagram for Delivery Agent Side

3.12 UML: CLASS DIAGRAM

A class diagram in UML is a particular sort of static structure diagram that illustrates a system's classes, properties, methods, and relationships between objects to describe the structure of the system.

Table 3.3 Class Diagram Notations

Objects	Symbols	Description
Aggregation		Aggregation is a special type of association that models a whole-part relationship

		between aggregate and its part.
Dependency		A dependency means the relationship between two or more classes in which a change in one may force changes in the other

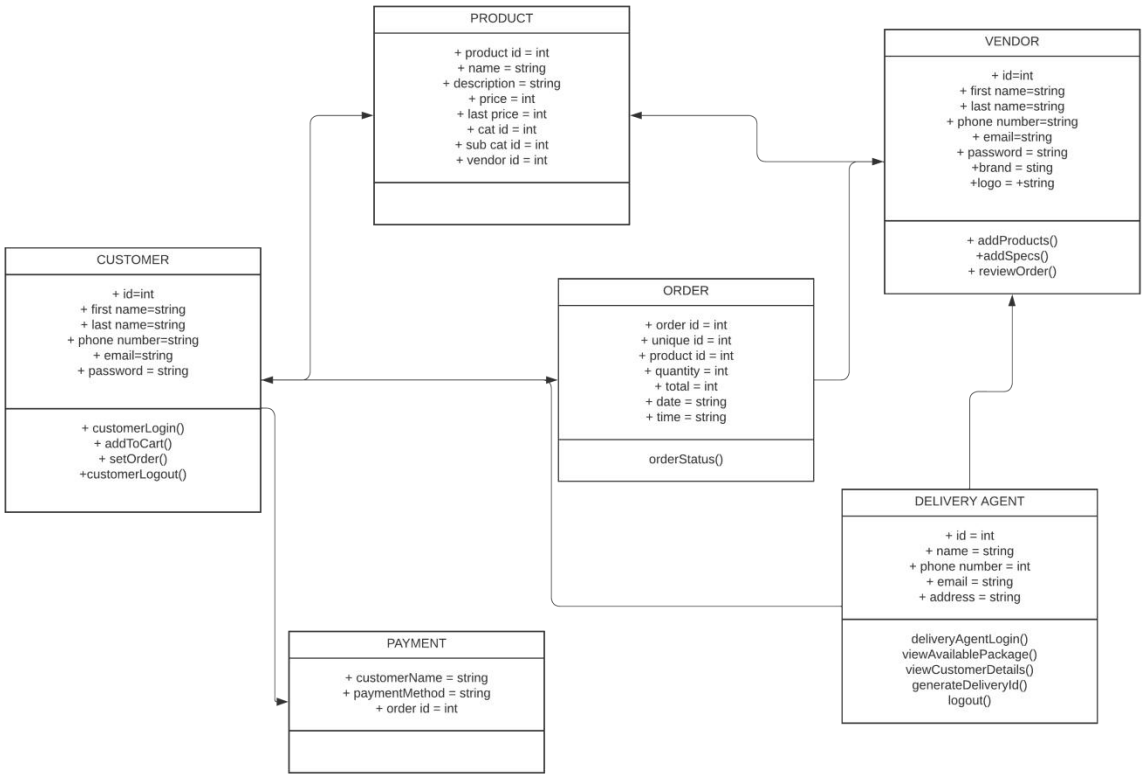


Figure 3.5 Class Diagram For The Ecommerce System

CHAPTER 4

IMPLEMENTATION AND CODE

4.1 SOFTWARE IMPLENTATION

Software implementation refers to the process of taking a software design or specification and turning it into a functional software system. It is a crucial phase in the software development lifecycle and involves the actual coding, testing, and deployment of the software application or system.

4.2 SOFTWARE IMPLEMENTATION TOOLS

The following software tools are highlighted for use in the implementation of the online trading system:

1. **Implementation Languages:** The following are the various languages used in this project's implementation:
    a. **Hyper Text Markup Language (HTML)**: This is a markup language used in building the semantics and the structure of the food delivery web application. It is part of the languages used by the web application's client-side (front-end).
    b. **Cascading Style Sheet (CSS):** This is one of the front-end technologies used for styling web pages built with HTML. It was used for a nice aesthetic feeling.
    c. **JavaScript:** This is the major front-end technology used to bring interactivity to the web app. It also helps connect and get data from the server.
    d. **PHP(Hypertext Preprocessor):** This is a widely-used, open-source scripting language that is commonly used for web development. It is particularly suited for server-side scripting. This was used to build the server side of the website.
    e. **MySQL:** This was used to build and manage the database of the site.

2. **Implementation Frameworks:** These are tools that provide ready-made components or solutions that are customised in order to speed up development. The Frameworks used in this project include:
    a. **Bootstrap:** Bootstrap is a popular open-source front-end framework that simplifies the process of designing and developing responsive and visually appealing websites and web applications. It was originally created by Twitter and is now maintained as an open-source project with contributions from a large community of developers. Bootstrap provides a set of pre-designed HTML, CSS, and JavaScript components and templates, making it easier for developers to create consistent and responsive web interfaces.
3. **Implementation Platforms:** Virtual Studio code is an Integrated Development Environment that was used in the development process. It provides a clearer visual outlook of the various files in the project and also integration to Version Control System (VCS) like Git of which Github was the remote VCS used.
4. **Operating System:** Windows OS was used to develop, test and deploy the program.

4.3 USER DOCUMENTATION – SYSTEM TESTING

System testing is a type of testing that verifies a fully integrated and finished piece of software. Its purpose is to evaluate the end-to-end system specifications. It also tests the design and behaviour of the system and also the expectations of the customer. The following was tested:

1. The Signup and Login functionalities for the customer, vendors, and delivery agent side.
2. Are customers able to view items from posted by the vendors?

3. Are customers able to add items to their cart?
4. Are customers able to update those items in their cart?
5. Are customers able to review and rate items?
6. Are customers able to make payment for their orders?
7. Are customers able to receive notifications and update on their orders?
8. Are customers able to edit and update their profiles?
9. Are customers able to change their password?
10. Are customers able to search for products from the interface with ease?
11. Are vendors able to add, update or remove products?
12. Are vendors able to view orders for their products?
13. Are vendors able to add specifications for already existing products?
14. Are vendors able to view and keep track of all orders coming in?
15. Are vendors able to view the reviews made the customers?
16. Are vendors able to get payment when items have been delivered?
17. Are delivery agents able to view assigned orders specifically for him/her?
18. Are delivery agents able to generate unique code to confirm order?
19. Are delivery agents able to view the customer details of the order they are attached to?
20. Are delivery agents able to view the details of restaurants that prepared the order?
21. Are the delivery agents able to receive notifications based on order status changes applicable to them?

4.4 SCREENSHOTS OF THE RUNNING SYSTEMS

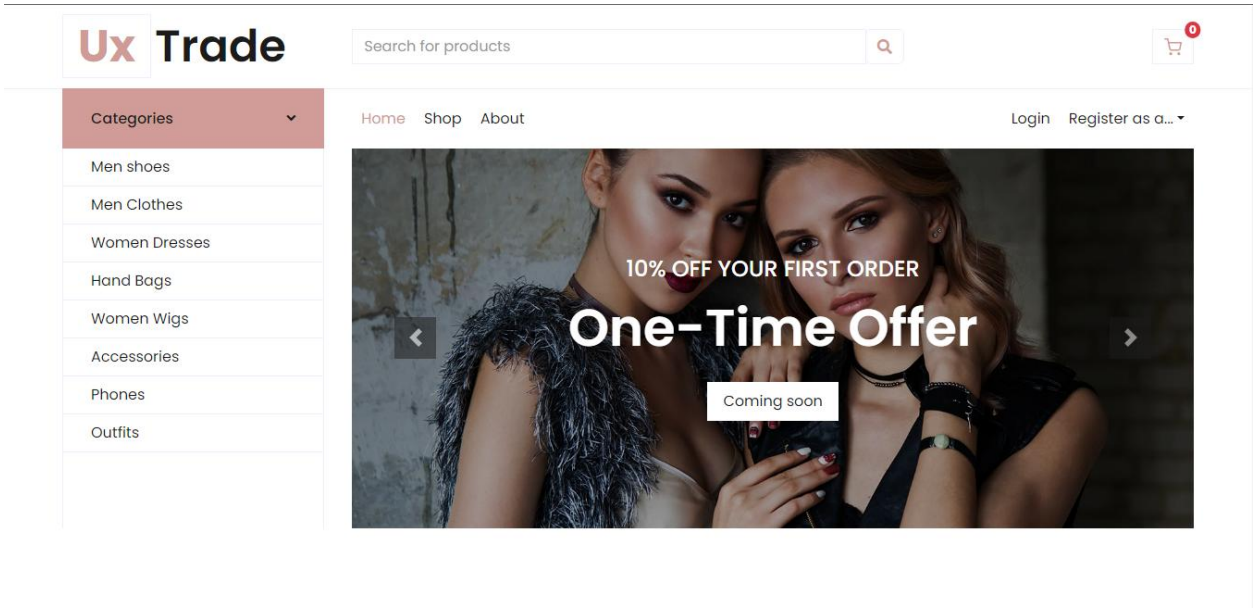


Figure 4.1 Home Page

The snapshot of the UxTrade site is shown in Figure 4.1 above. In addition to an image slide that displays current enticing promos, it includes all the different buttons for navigating around the different pages in the online application and a list of all available categories of the products to ease search process.

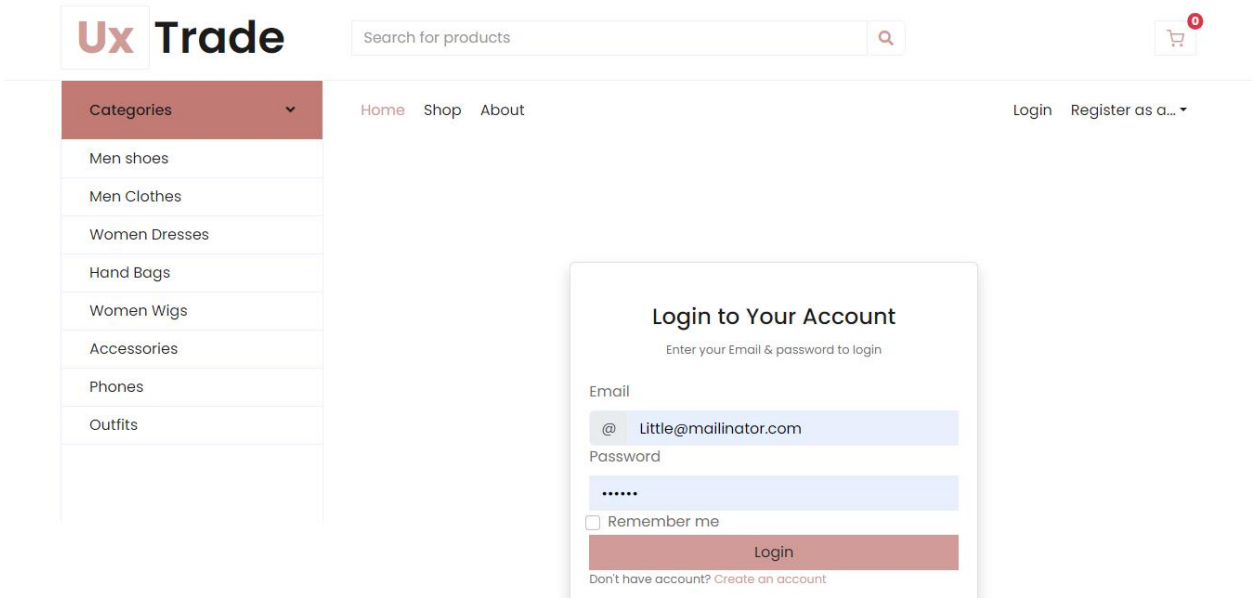


Figure 4.2 Login Page

Figure 4.2 shows the login page where already existing customers can log in using their respective emails and passwords.

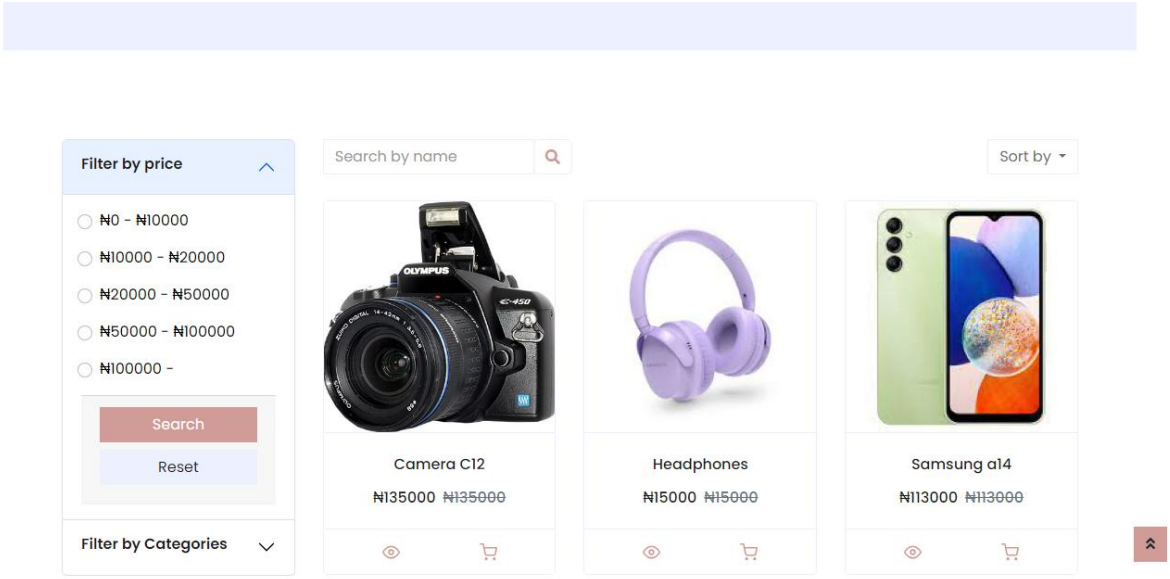


Figure 4.3 Shopping Page

Figure 4.3 shows the shopping page where already customers can browse through products posted by vendors, features of this page include filtering products on display, adding directly to cart, viewing products details.

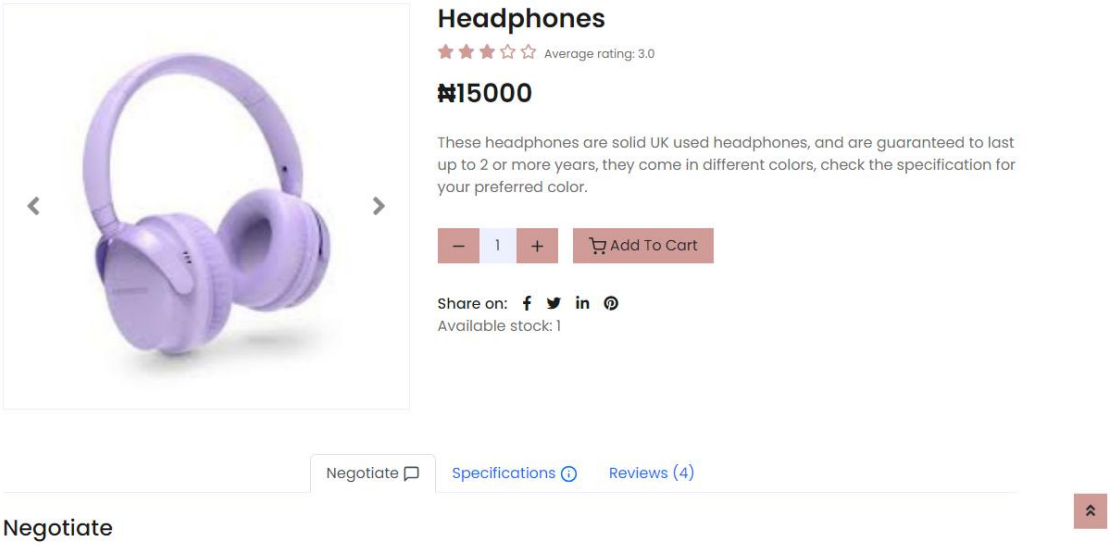


Figure 4.4 Product Description Page

Figure 4.4 shows the product description page which contains more information on that product, here users can add to cart, update the default quantity(1), review and rate the product, negotiate the price with the vendor, and view more specifications if available.

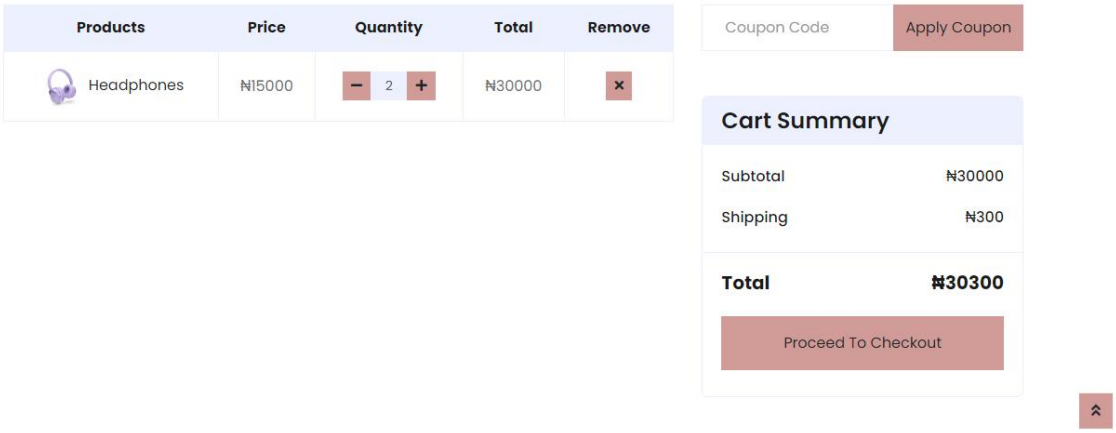


Figure 4.5 Cart Page

Figure 4.5 shows the user cart page, here products added to their cart will be displayed, then they can checkout once they are done shopping and are ready to purchase. Some features here include updating the quantity of products here already, application of coupon code for promo hasn't been implemented yet.

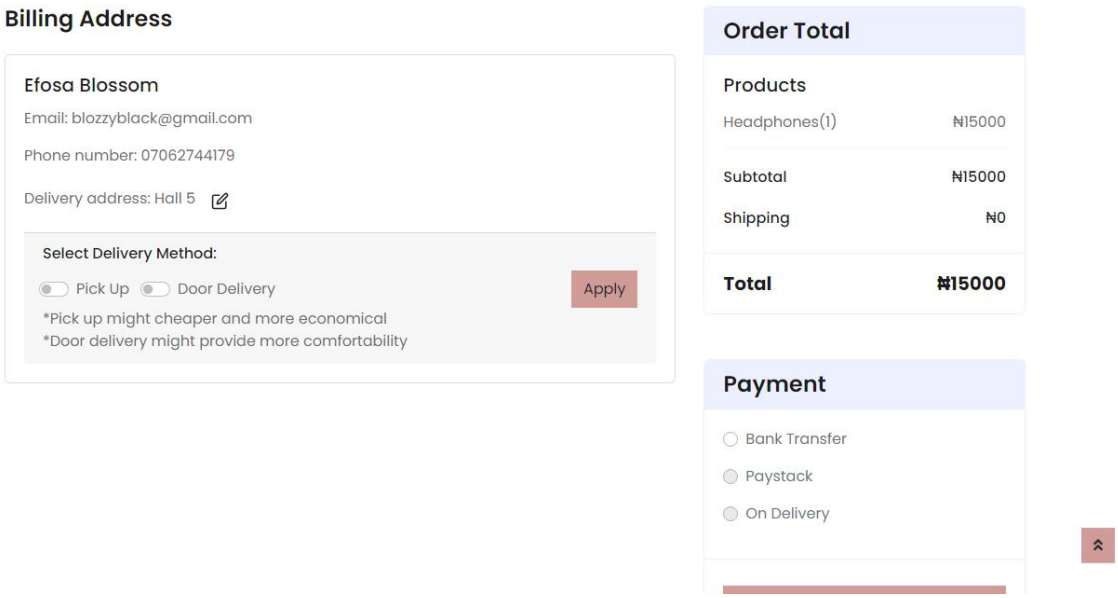


Figure 4.6 Checkout Page

Figure 4.6 shows the checkout page where the customer confirms their orders before making payment

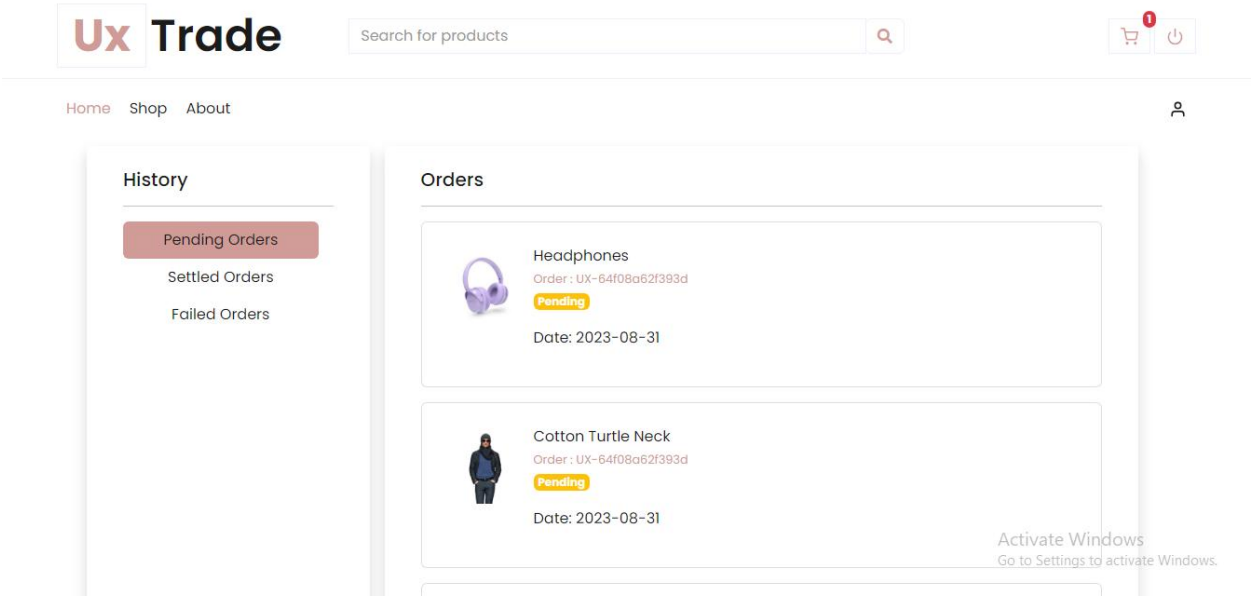


Figure 4.7 Orders Page

Figure 4.7 shows the orders tracker page where the customer can keep track of their orders

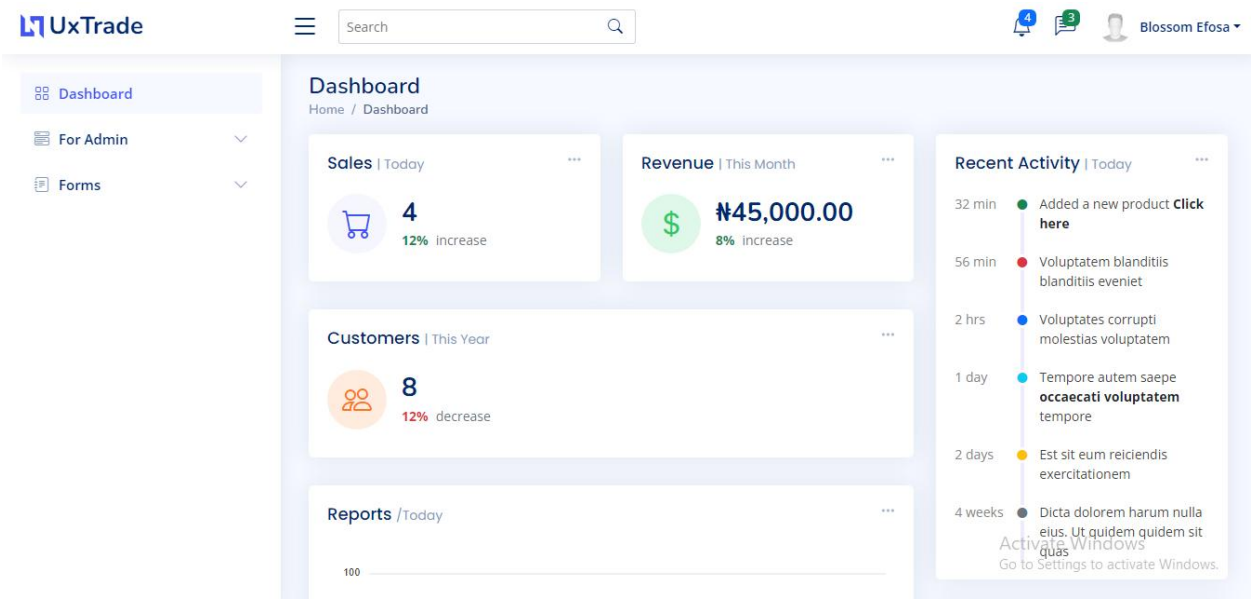


Figure 4.8 Admin Dashboard Page

Figure 4.8 shows the admin dashboard where the admin keeps track of all activities going on within the site.

CHAPTER 5

SUMMARY AND CONCLUSION

5.1 SUMMARY

UXTRADE explored the design and implementation of an online multi-vendor trading platform tailored specifically for the student community. In response to the increasing need for efficient and user-friendly platforms that cater to students' buying and selling requirements, this project leveraged PHP, a versatile server-side scripting language, to create a secure, scalable, and feature-rich solution.

Despite the growth of online trading services in Nigeria, a very important segment of people has been neglected which are those within and around the campus environment of the various higher institutions. Due to the lack of this automated system in these areas, students and residents have resorted to physically looking for buyers or physically looking for products, which ends up making life a lot more stressful on the long run.

The platform's key features include user-friendly registration and product listing interfaces, secure payment processing, real-time communication channels, and a vendor rating system. The development process emphasized modern web development techniques, ensuring compatibility across various devices and browsers. Security measures were also implemented to safeguard user data and financial transactions.

The implementation of UXTRADE not only addresses the practical needs of students making trading stress-free which is the goal of the platform but also promotes a sense of community engagement and entrepreneurship within the academic ecosystem. The document highlights the platform's adaptability to evolving student needs and preferences, making it a valuable addition to the student community.

5.2 CONCLUSION

In conclusion, the successful design and implementation of the online multi-vendor trading platform for students using PHP underscore the importance of technology-driven solutions in addressing the evolving demands of the digital age. This platform not only simplifies the process of buying and selling among students but also fosters a sense of community and entrepreneurial spirit.

As technology continues to play an increasingly integral role in students' lives, platforms like these are poised to become indispensable tools within academic communities. The project's emphasis on user experience, security, and scalability positions it as a model for similar solutions in niche markets.

Looking ahead, the platform's adaptability allows for future enhancements and expansions to cater to changing student preferences and needs. This demonstrates its potential as a versatile and long-lasting solution. In an era where convenience and efficiency are paramount, the online multi-vendor trading platform for students offers a compelling example of how technology can empower and connect academic communities while promoting entrepreneurship and collaboration.

REFERENCES

The impact of e-commerce on businesses has been widely studied in the literature. Chen & Barnes (2007) conducted research on online trust and buyer behavior in the context of Taiwanese online bookstores. They found that online initial trust and familiarity with online purchasing have a positive impact on purchase intention (Chen & Barnes, 2007). The study also identified perceived technology, perceived risk, company competency, and trust propensity as determinants of online initial trust (Chen & Barnes, 2007). Another study by Chen & Barnes (2007) confirmed the importance of perceived usefulness, perceived security, perceived privacy, perceived good reputation, and willingness to customize in developing online initial trust (Chen & Barnes, 2007).

The growth of e-commerce has been recognized as a significant trend in the business world. highlighted that e-commerce is viewed as the future direction for organizations and is changing the way businesses operate (Shareef et al., n.d.). The diffusion of the internet has led to shifts in global business operations, presenting interesting and challenging issues related to the proliferation and adoption of e-commerce (Shareef et al., n.d.).

E-commerce has also been shown to have a positive impact on business transactions. Santy et al. (2021) conducted a study on the role of e-commerce in improving online business transactions. The results showed that e-commerce is useful in attracting buyers and enhancing business performance (Santy et al., 2021; . Ng, 2013) investigated the factors influencing the selection of e-commerce models in a business-to-business electronic environment. The study emphasized the importance of adopting appropriate e-commerce models to maximize success in the electronic environment (Ng, 2013).

The impact of e-commerce on small and medium-sized enterprises (SMEs) has also been explored. Nguyen & Dang (2017) examined the impact of e-commerce on Vietnamese SMEs and found that it enables access to global communication and trade, expands businesses to the global market, and increases sales while reducing costs (Nguyen & Dang, 2017). Additionally, Llanes (2020) highlighted the potential of e-commerce as a tool to boost the development of Cuban agribusiness companies. The study proposed a strategy combining different e-commerce models and digital marketing techniques to attract new business partners and customers (Llanes, 2020).

Overall, the literature survey demonstrates that e-commerce has a significant impact on businesses, including enhancing trust, improving purchase intention, expanding market reach, and increasing business performance. The latest trends in e-commerce development include the adoption of appropriate e-commerce models, the use of digital marketing techniques, and the exploration of e-commerce opportunities for SMEs and specific industries such as agribusiness. These trends reflect the ongoing evolution and importance of e-commerce in the business landscape.

References:

Chen, Y. and Barnes, S. (2007). Initial Trust and Online Buyer Behaviour. Industrial Management & Data Systems, 1(107), 21-36. https://doi.org/10.1108/02635570710719034

Llanes, R. (2020). E-commerce As a Tool To Boost The Development Of Cuban Agribusiness Companies. Scientia Et Technica, 1(25), 120-126. https://doi.org/10.22517/23447214.22401

Ng, E. (2013). Making Strategic Decisions On B2b E-commerce Models: An Empirical Study On Australian Agribusinesses. International Journal of Electronic Commerce Studies, 1(4), 1-20. https://doi.org/10.7903/ijecs.995

Nguyen, H. and Dang, T. (2017). The Impact Of E-commerce In Vietnamese Smes. European Journal of Business Science and Technology, 2(3), 90-95. https://doi.org/10.11118/ejobsat.v3i2.106

Santy, R., Utomo, G., Utomo, G. (2021). E-transactions In Digital Era. International Journal of Research and Applied Technology, 2(1), 23-30. https://doi.org/10.34010/injuratech.v1i2.5909

Shareef, M., Dwivedi, Y., Williams, M., Singh, N. Introduction To E-commerce., 1-8. https://doi.org/10.4018/978-1-60566-412-5.ch001

(2011). What Signal Are You Sending? How Website Quality Influences Perceptions Of Product Quality and Purchase Intentions. Mis Quarterly, 2(35), 373. https://doi.org/10.2307/23044048

Aslam, W., Hussain, A., Farhat, K., Arif, I. (2019). Underlying Factors Influencing Consumers' Trust and Loyalty In E-commerce. Business Perspectives and Research, 2(8), 186-204. https://doi.org/10.1177/2278533719887451

Astuti, W. and Ramayani, M. (2022). E-commerce, the Digital Trend In Transaction. Journal of Business and Behavioural Entrepreneurship, 2(5), 41-50. https://doi.org/10.21009/jobbe.005.2.06

Chen, Y. and Barnes, S. (2007). Initial Trust and Online Buyer Behaviour. Industrial Management & Data Systems, 1(107), 21-36. https://doi.org/10.1108/02635570710719034

Holsapple, C. and Singh, M. (2000). Toward a Unified View Of Electronic Commerce, Electronic Business, And Collaborative Commerce: A Knowledge Management Approach. Knowledge and Process Management, 3(7), 151-164. https://doi.org/10.1002/1099-1441(200007/09)7:33.0.co;2-u

Llanes, R. (2020). E-commerce As a Tool To Boost The Development Of Cuban Agribusiness Companies. Scientia Et Technica, 1(25), 120-126. https://doi.org/10.22517/23447214.22401

Ng, E. (2013). Making Strategic Decisions On B2b E-commerce Models: An Empirical Study On Australian Agribusinesses. International Journal of Electronic Commerce Studies, 1(4), 1-20. https://doi.org/10.7903/ijecs.995

APPENDIX