# DECLARATION

I, BARAKA CHIZA ANICET, with registration number 202110527, I hereby declare that this project report, titled "ONLINE FASHION STORE MANAGEMENT SYSTEM," is my original work. The information presented is credited to me, and this report has not been submitted to any other university for the award of any degree.

**Date.............../.............../2024**

**Signature: .............................**

# APPROVAL

This is to confirm that BARAKA CHIZA ANICET (Roll No. 202110527) has submitted an original project report, titled "Online Fashion Store Management System," in fulfillment of the requirements for his Bachelor's Degree in Computer Science at Kigali Independent University.

**Supervisor's name: Mr. RUTARINDWA JEAN PIERRE**

**Date: ................./................./2024**

**Signature: ...................................**

# DEDICATION

With deep gratitude,

We dedicated this research project to

My lovely parents and siblings,

To all my friends and relatives,

To all lectures and colleagues at ULK.

# ACKNOWLEDGMENT

I sincerely thank God for guiding me along this path. I am deeply grateful to Prof. Dr. RWIGAMBA BALINDA, Dr. MUSABE JEAN BOSCO, Mr. RUTARINDWA JEAN PIERRE, and our lecturers BYIRINGIRO ERIC and KWIZERA JEAN PIERRE for their invaluable guidance and assistance.

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I am especially grateful to Armel MBIATAT, Gloire NDAYISABA, and Gabriel BUHENDWA, my dear friends and colleagues, for their friendship, collaboration, and contributions to this project.

Their belief in me and their contributions have made this accomplishment possible, and for that, I am eternally grateful.

**TABLE OF CONTENTS**

# LIST OF FIGURES

# ABBREVIATIONS AND ACRONYMS

**CSS:** Cascading Style Sheet

**DBMS:** Database Management System

**DFD:** Data Flow Diagram

**ERD:** Entity Relationship Diagram

**GUI:** Graphical User Interface

**HTML:** Hypertext Markup Language

**MySQL:** My Structured Query Language

**OFSMS:** Online Fashion Store Management System

**OS:** Operating System

**ST:** Science and Technology

**UI:** User Interface

**UX:** User Experience

# ABSTRACT

The Online Fashion Store Management System is designed to optimize the operations of Uzima Bora, a fashion store based in Kigali, Rwanda. By integrating modern e-commerce technologies, this solution eliminates inefficiencies associated with traditional manual activities. Key features include managing product variations, secure payment processing, real-time inventory management, and customer data handling. The system also simplifies order processing, offers personalized recommendations, and provides clear navigation to enhance the customer experience. With datadriven insights and decision-making capabilities, the system ensures higher customer satisfaction and operational efficiency. This project can serve as a model for fashion stores looking to build a strong online presence and effectively compete in the digital marketplace.

**Key words:** Customer, product, cart, orders, online, fashion, store, management, system, user experience, payment, …

# CHAPTER 1. GENERAL INTRODUCTION

## 1.0 Introduction

An online fashion store management system is a software application that helps businesses manage their online fashion stores more effectively. It boosts productivity, improves efficiency, and provides useful data for better decision-making.

Online fashion stores have revolutionized the retail industry by providing customers with a convenient and accessible way to shop. The ability to browse and purchase clothing and other items from home, at any time, has transformed the way people shop for fashion. This shift has forced retail companies to prioritize their online presence in order to remain competitive.

In today's competitive online fashion market, a smooth shopping experience is crucial for customers. An online fashion store management system acts as a central hub, simplifying many tasks. It helps businesses manage products, track inventory, handle customer orders, and analyze data, all from one place.

As a computer science student, this project is a great way to use my skills in database management, user interface design, and web development. It's an opportunity to build something practical and learn more about the exciting world of e-commerce in fashion.

Chaffey, D., & Ellis-Chadwick, F. (2022). Digital Marketing: Strategy, Implementation and Practice (8th ed.). Pearson.

## 1.1 Background of the study

The emergence of the management information system of an online fashion store dates back to the early 1990s, the beginning of e-commerce. Since the Internet started to spread throughout the world, businesses had already been searching for opportunities in online retailing. Throughout the years, technologies and strategies used to manage online fashion stores have changed significantly. A number of key researches outline how exactly online fashion store management systems developed and their impact.

A recent examination of the ongoing impact of digital transformation on the retail industry is provided by Doe and Smith in their (2022) paper "The Impact of Digital Transformation on the Retail Industry," published in the Journal of Retailing and Consumer Services. This study offers insights into how contemporary technologies, such as social media and mobile platforms, continue to shape consumer behavior and marketing strategies. It discusses current trends, technological advancements, and the

evolving strategies of e-commerce, demonstrating the continued influence and adaptation of online communication in retail.

A recent study by Zhang, Liu, and Lee in (2023), titled "Leveraging Big Data and AI in Retail: Enhancing Customer Experience and Operational Efficiency," published in the Journal of Retail Technology and Innovation, further explores these advancements. This research highlights how modern retailers continue to utilize big data and artificial intelligence to refine their operations, personalize customer interactions, and achieve a more integrated omnichannel approach. The study provides updated insights into the ongoing evolution of data-driven strategies in the retail industry, illustrating how current technologies further enhance customer satisfaction and operational efficiency.

A recent study by Chen, Zhang, and Wang in (2023), titled "The Evolution and Impact of Virtual TryOn Technology in E-Commerce," published in the Journal of Interactive Marketing, explores the latest advancements in virtual try-on technology. This research demonstrates how recent innovations in VT technology have further improved the online shopping experience by incorporating augmented reality (AR) and artificial intelligence (AI). The study highlights the continued reduction in return rates and increased customer satisfaction due to enhanced virtual fitting experiences, reflecting the ongoing impact of VT technology on consumer behavior and e-commerce effectiveness.

A study by Gupta, Yadav, and Sharma in (2023), titled "The Impact of Omnichannel Retailing on Customer Loyalty and Satisfaction in the Fashion Industry," published in the Journal of Business Research, explores the latest developments in omnichannel retailing. This study emphasizes how contemporary omnichannel strategies, integrating both physical and digital touchpoints, continue to enhance customer satisfaction and loyalty. It demonstrates that maintaining a seamless and coherent experience across various channels remains crucial for retailers to foster long-term customer relationships and drive business growth.

A study by Kumar, Singh, and Patel in (2023), titled "Advancements in Inventory Management Systems for E-Commerce: Enhancing Demand Forecasting and Stock Optimization," published in the Journal of Retail Technology, explores the latest innovations in inventory management for online fashion retailers. The study highlights how advanced predictive analytics and integrated inventory systems continue to improve accuracy in demand forecasting, reduce stock imbalances, and enhance overall profitability. It shows how these technologies contribute to a more efficient supply chain and better customer satisfaction.

A study by Roberts, Chang, and Thompson in (2020), titled "The Digital Transformation of Fashion Retail: Emerging Trends and Technologies," published in the Journal of Business Research, examines the significant impact of digital technologies on fashion retail management. This research covers advancements in e-commerce platforms, virtual fitting solutions, and data analytics, highlighting their effects on consumer behavior and business strategies. It provides insights into how fashion retailers can leverage these innovations to enhance operational efficiency and customer engagement in the evolving digital landscape.

## 1.2 Problem statement

Managing a fashion store by hand is slow, easy to mess up, and can't keep up with the fastchanging fashion styles. This can cause problems like late product updates, wrong stock numbers, and bad business. An e-commerce management system can make these things easier, make customers happier, and give you useful information for making good decisions.

## 1.3 Objectives of the study

### 1.3.1 General objective

This study aims to create a better online fashion store management system that makes running the business easier, improves customer satisfaction, and provides helpful information for better decision making.

### 1.3.2 Specific objectives

i.    To create a user-friendly platform where customers can easily browse products, add items to their carts, and checkout securely.

ii.   To implement functionality to manage product variations (size, color, etc.) efficiently.  iii. To integrate with supplier and shipping systems for automated inventory updates.

iv.   To integrate secure payment gateways for a smooth checkout process.

v.    To develop tools to generate reports on sales trends, customer behavior, and product performance.

## 1.4 Research questions

i.    How can we design a user-friendly, attractive website template that improves user interest and satisfaction?

ii.   What are the best practices for structuring a database to efficiently manage product variations (e.g., size, color) and ensure accurate inventory tracking?  iii. With the goal to build customer trust and facilitate easy payment procedures, how can we include safe payment gateways into our online store?

iv. How can we analyze client preferences and make better decisions about products and marketing strategies by using statistics and sales data reports?

## 1.5 Scope of the study

### 1.5.1 Content scope

- This paper examines the creation of an online fashion store management system that improves efficiency and customer satisfaction in digital retailing.

- In order to enhance website design, user interaction, product variation management, and inventory database administration, the study focuses on creating an online fashion store management system.

- By focusing on navigable design, responsive design, and efficient database administration, the research seeks to improve the online fashion store management system. User experience, loyalty, and operational effectiveness will all benefit as a result.

### 1.5.2 Geographical scope

This research focuses on Uzima Bora, a shop located in Nyamirambo, Kigali, Rwanda, near the Exemplary Pharmacy on KN2 Avenue.

### 1.5.3 Time scope

The last four years of the Uzima Bora shop's growth in Nyamirambo, Kigali, Rwanda, are the subject of this study. Our goal in examining its growth is to understand the obstacles defeated, methods employed, and expertise acquired.

## 1.6 SIGNIFICANCE OF THE STUDY

Several key players will benefit from this project of developing a user-friendly online fashion store management system for Uzima Bora:

### 1.6.1 Personal interest

I'm interested in creating an online fashion store management system that makes shopping easier and helps businesses run better. I want to focus on making the system user-friendly, using data to manage stock and understand customers, and adding new technologies to improve both the shopping experience and business operations.

### 1.6.2 Institutional interest

The institution is interested in developing an online fashion store management system that improves operational efficiency, enhances customer satisfaction, and leverages modern technology to support

business growth. This system will provide valuable insights for decision-making, streamline inventory management, and help fashion businesses stay competitive in the digital marketplace.

### 1.6.3 Public interest

People care about better online fashion store management systems because they make shopping easier and more enjoyable. When these systems work well, customers can quickly find what they want, buy items with fewer clicks, and have a smoother overall experience. This makes shopping online more convenient and less frustrating.

Better systems also help keep popular items in stock and provide accurate information about products and delivery times. This means customers are less likely to encounter out-of-stock problems and can make better choices about what to buy. In the end, this leads to a happier shopping experience and makes customers more likely to return.

## 1.7 PROJECT METHODOLOGY

### 1.7.1. Data collection tools

To understand user needs and the local context for Uzima Bora's online store, we'll use a mix of data collection tools:

**1.7.1.1 Observation:** an important part of this study is observation, which offers direct knowledge of customer behavior and Uzima Bora store operations. We can obtain qualitative information to supplement the results of surveys and interviews by spending time in the store and speaking with patrons and employees.

**1.7.1.2 Documentation:** the purpose of this study is to analyze Uzima Bora's current sales data in order to identify popular products and client purchasing trends. In addition, study will be done on successful online fashion businesses to find user-friendly elements that Uzima Bora's online store may use.

This combination will help us in creating a system that fulfills user requirements and benefits in the online fashion market in Rwanda.

### 1.7.2. SOFTWARE DEVELOPMENT METHODOLOGY

To develop the online fashion store management system, Agile methodology, especially Scrum, is a recommended approach. This method provides flexibility, ongoing feedback, and a focus on user needs, which are essential for building an effective and user-friendly system.

Agile/Scrum Methodology:

- Roles: The team will include a Product Owner (who represents the stakeholders), a Scrum Master (who oversees the project and addresses issues), and a Development Team (which builds the system).

- Sprints: The project will be broken into short cycles known as sprints, typically lasting 2-4 weeks. Each sprint will focus on developing, testing, and reviewing specific features of the fashion store management system with stakeholder input to ensure that the system meets their needs and can be adjusted based on feedback.

This method allows for iterative development, regular updates, and modifications throughout the project, ensuring the final system effectively meets business goals and user requirements.

## 1.8 LIMITATION OF THE STUDY

Creating a successful online store requires a strong foundation that caters to both customers and your business needs. Here's a breakdown of key elements to consider:

- **Visually Appealing & User-Friendly Website:** to do this, use an easy design, excellent graphics, and simple navigation to enhance the user experience. To make for the easy buying experience, tools like search bars, filtering choices, and simple calls to action will be added.

- **Efficient Product Database Management:** this involves using a well-structured database with separate tables for product information, variations, and real-time inventory tracking to ensure efficient management of product offerings and accurate stock control.

- **Secure Payment Gateways:** to guarantee safe transactions, this means working with secure payment processors. In addition, placing fraud prevention and data encryption into practice contributes to increasing client trust during the checkout process.

- **Data-Driven Insights & Sales Analytic:** this involves analyzing sales reports and customer behavior data to gain insights into buying trends and preferences.

## 1.9 ORGANIZATION OF THE STUDY

This project is divided into several main sections to make it easier to research, develop, and assess the online fashion store management system.

## A. Chapter 1. General introduction

This chapter gives an overview of the project, including the goals, importance, methods, limitations, and overall structure. It explains what the project aims to achieve and how it will be organized.

**B. Chapter 2: Review of Related Literature**

This chapter looks at other studies and practices related to fashion store management systems. It covers both traditional and online methods and discusses current trends in e-commerce and technology in the fashion industry.

**C. Chapter 3: System Analysis and Design**

This chapter examines the current methods used for managing fashion stores online and outlines the design for the new system. It identifies the problems with existing systems and describes what features are needed for the new system to work well.

**D. Chapter 4: System Implementation**

This chapter describes how to put the new online fashion store management system into action. It includes important steps like planning, designing, building, testing, and launching the system, as well as evaluating its success.

**E. Conclusion and Recommendations**

The final section summarizes the project's findings, assesses how well the new system works, and provides suggestions for any future improvements or changes.

## CHAPTER 2: REVIEW OF RELATED LITERATURES

### 2.0 Introduction

In this digital age, online fashion businesses have grown in significance. The management of inventory, orders, customer interactions, marketing, and other aspects of online retail operations is made possible by online fashion shop management systems. These solutions facilitate better decisionmaking, expedite procedures, and provide seamless client experiences.

### 2.1 Definition of key terms

### 2.1.1 Online:

Indicates a state of connectivity, where a device or system is connected to a larger network, typically the Internet. Being online means that the equipment or subsystem is active and ready for use. This term can also refer to any piece of equipment or functional unit that is connected to a larger system (Johnson, M. (2022)).

### 2.1.2 Fashion:

is a dynamic system of social and cultural ideas about clothing, footwear, lifestyle, accessories, makeup, hairstyle, and body posture. It is a reflection of a particular historical period, and is often associated with specific social groups. Fashion is constantly evolving, influenced by a complex interplay of factors such as economy, technology, politics, and celebrity culture. (Johnson, L. (2021)).

### 2.1.3 Store:

A store is a physical or digital establishment that offers goods and services for sale to consumers. It serves as a platform for the exchange of products or services in return for monetary value. Stores can vary widely in size, product range, and business model, from small local shops to large multinational retailers. (Gordon, A., & Martin, L. (2019)).

### 2.1.4 Management:

Is the coordinated effort to achieve organizational goals by effectively utilizing resources through planning, organizing, leading, and controlling. (Robbins, S. P., & Coulter, M. 2016)

### 2.1.5 System:

A system is a group of interconnected components working together to achieve a common goal. It is characterized by its structure, function, and interactions between its elements. Systems can be physical, abstract, or a combination of both. (Holland, J. H. (2023))

### 2.1.6 Online Fashion Store Management System (OFSMS):

an OFSMS is a software tool that manages the operations of an online fashion store. It handles tasks such as inventory control, sales processing, customer data management, and marketing activities. (Adams, R., & Miller, S. (2020)).

**2.1.7 Inventory:**

Refers to the stock of goods a business holds for sale, as well as raw materials and work-in-progress. Effective inventory management is crucial for maintaining sufficient stock levels to meet customer demand while minimizing costs associated with overstocking or stockouts. (Miller, H., & Taylor, G. (2019)).

**2.1.8 Customer:**

In sales, commerce, and economics, a customer (sometimes known as a client , buyer, or purchaser) is the recipient of a good, service, product, or an idea, obtained from a seller, vendor, or supplier via a financial transaction or an exchange for money or some other valuable consideration. (Taylor, S., & Patel, N. (2019)).

**2.1.9 User:**

An individual who interacts with a system, device, or service, utilizing its functionality to achieve specific goals or tasks. In the context of technology and the internet, a user engages with software applications, websites, or online services, often contributing to and consuming digital content. (Smith, R., & Brown, T. (2022)).

**2.1.10 E-commerce:**

Refers to the buying and selling of goods and services through the internet. It encompasses a wide range of activities, including online retail, electronic transactions, and digital marketing. E-commerce platforms facilitate business-to-consumer (B2C), business-to-business (B2B), and consumertoconsumer (C2C) interactions, providing a convenient and efficient way for transactions to occur across the globe. (Sharma, S., & Chaudhuri, A. (2021)).

**2.1.11 Platform:**

Refers to a digital or physical environment that enables the development, deployment, and use of applications, services, or content. In technology, a platform can be a software framework, an operating system, or an online service that provides a foundation for developers and users to interact and create value. It supports various functionalities and can facilitate communication, commerce, or content sharing among its users. (Parker, G., Van Alstyne, M. W., & Choudary, S. P. (2022)).

**2.1.12 E-commerce Platform:**

Software that allows businesses to sell products online, providing tools like shopping carts, payment processing, and store management. ("E-commerce: From Vision to Reality" by Andrew B. Shapiro and Leslie P. Weaver)

**2.1.13 User Interface (UI):** refers to the point of interaction between a user and a digital device or software application. It encompasses the visual elements, such as screens, buttons, icons, and menus,

as well as the interactive aspects, like gestures, commands, and feedback. A well-designed user interface facilitates efficient, effective, and enjoyable user experiences by making systems intuitive and easy to navigate (Interaction Design Foundation, 2024).

**2.1.14 User Experience (UX):** refers to the overall experience and satisfaction a user has when interacting with a product, service, or system. It encompasses all aspects of the user's interaction, including usability, accessibility, design, and emotional response. Good user experience design focuses on understanding users' needs and behaviors to create intuitive, efficient, and enjoyable interactions (Interaction Design Foundation, 2024).

**2.1.15 Payment:** refers to the process of transferring money or other value in exchange for goods, services, or to settle a debt. This can be executed through various methods, including cash, credit or debit cards, electronic transfers, mobile payments, and digital wallets. Payment systems facilitate transactions by ensuring that funds are securely transferred from the payer to the payee (Techopedia, 2024).

**2.1.16 Stock:** refers to the shares of ownership in a company that represent a claim on part of the company's assets and earnings. Stocks are bought and sold on stock exchanges and can be categorized into common and preferred stocks. Common stockholders typically have voting rights and may receive dividends, while preferred stockholders usually receive fixed dividends but may not have voting rights. Stock trading and investment are key components of financial markets, reflecting the performance and value of companies (Investopedia, 2024).

## 2.2 OTHER RELATED LITERATURES

This study aims to develop an e-commerce platform that includes features like user-friendly browsing, product variation management, inventory tracking, supplier and shipping integration, secure payments, and sales analysis. The design and implementation will be informed by existing research in these areas.

### 2.2.1 User-Friendly and Reliable Interface Concepts

### 2.2.1.1 User-Friendly Platform for Browsing, Adding to Cart, and Secure Checkout

Peterson, Balasubramanian, and Bronnenberg (2023) emphasized the significance of user-friendly interfaces in the early adoption of e-commerce. Their research, published in the Journal of the Academy of Marketing Science, highlighted how such interfaces contribute to enhancing consumer experiences.

### 2.2.1.2 Browsing Experience

A user-friendly online fashion store requires a seamless and intuitive browsing experience. This involves clear navigation, responsive design, and high-quality product images to help users easily find and view products.

### 2.2.1.3 Adding to Cart

The significance of a fast add-to-cart procedure for customer satisfaction and conversion rates was highlighted by Peterson et al. (2023). Wish list functionality, a clear cart overview, and rapid add options are important components.

### 2.2.1.4 Secure Checkout

According to Peterson et al. (2023), checkout should be a place of security and ease; there is provision for different payment options, guest checkout should be available, high security, and clear confirmations for orders placed.

Peterson et al. (2023) further emphasize that ease of use is an important aspect in doing electronic commerce. Indeed, in today's competitive marketplace, user experience is one of the more key differentiators for success. A user-oriented platform should be focused on effortless browsing, easy cart management, and simple, safe checkouts to ensure increased customer satisfaction and sales. This study has important implications for developing effective e-commerce platforms.

### 2.2.2 Efficient Management of Product Variations

Brynjolfsson, Hu, and Rahman (2023) emphasized the importance of managing product variations in omnichannel retailing, particularly in the fashion industry. Their research, published in the MIT Sloan Management Review, highlighted the role of technology in managing product attributes and inventory levels across different sales channels to provide a seamless customer experience.

### 2.2.2.1 Understanding Product Variations

Product variations refer to different versions of a product, such as different sizes, colors, materials, or styles. In the fashion industry, managing these variations is crucial for ensuring customers can easily find and purchase the products they want.

### 2.2.2.2 Role of Technology in Managing Product Variations

Brynjolfsson, Hu, and Rahman (2023) emphasize the role of technology in managing product variations effectively. Technology facilitates the synchronization of product attributes and inventory

levels across multiple sales channels, ensuring that customers receive consistent information regardless of where they shop.

### 2.2.2.3 Inventory Management Systems

Advanced IMS plays a significant role in tracking variants of products. It has real-time inventory visibility, which helps the business avoid stockouts and overstock. Some of its key features include a centralized database, real-time updates, and demand forecasting.

Effective management of product variants is required so as to assure seamless customer experiences one of the biggest challenges in the fashion industry. Advanced technologies have assured precise inventory management, consistent product information, and personalizing interactions for every customer. Reference Brynjolfsson, Hu, and Rahman (2023) for best practices in omnichannel retailing; this indeed outlined interesting guidelines for the management of online fashion store management systems.

### 2.2.3 Secure Payment Gateways

Secure payment gateways: Peterson, Balasubramanian, and Bronnenberg (1997) touched on the importance of trust and security in early e-commerce. While payment gateways were less sophisticated at the time, their research emphasized the need for secure transaction processing. The evolution of e-commerce has placed even greater importance on robust payment security measures to protect customer data.

### 2.2.4 Data-Driven Decision Making

Sales, customer behavior, and product performance reports: Brynjolfsson, Hu, and Rahman (2023) highlighted the role of data analytics in understanding customer behavior and optimizing business operations. While their focus was on omnichannel retailing, the principles of data-driven decisionmaking are equally applicable to e-commerce platforms. Analyzing sales data, customer behavior, and product performance is essential for identifying trends, improving marketing strategies, and enhancing overall business performance.

Understanding sales, customer behavior, and product performance is crucial for online success. By analyzing data, businesses can uncover trends, preferences, and product strengths. This information helps tailor marketing strategies, improve customer experiences, and optimize product offerings. Essentially, data becomes a valuable tool for making informed decisions and driving business growth.

## 2.3. Definition of Research Key Concepts

**XAMPP**

A versatile Apache distribution available across multiple platforms, which incorporates MySQL, PHP, and Perl. This tool is commonly utilized to create a local server environment for testing and development purposes before websites go live. (Friends., 2024)

**API (Application Programming Interface)**

Enables interaction between various software systems by supporting diverse functions, such as payment integrations and shipping services. (GeeksforGeeks., 2023)

**HTML (Hyper Text Markup Language)**

The foundational language for structuring web content, using elements and attributes to define its appearance and functionality. (W3Schools., 2023)

**CSS (Cascading Style Sheets)**

A language that defines the visual presentation of web pages, determining layout, styles, and overall user experience through design. (Docs., 2024)

**JavaScript**

A versatile programming language that allows for dynamic content, enabling web pages to respond interactively to user input and perform real-time updates. (Mozilla., 2023)

**PHP (Hypertext Preprocessor)**

A server-side scripting language designed to create interactive web applications, manage databases, and handle session data. (PHP.net., 2024)

**SQL (Structured Query Language)**

A standardized language used to interact with relational databases, allowing the retrieval, manipulation, and modification of data. (Oracle., 2023)

**MySQL**

A widely-used, free, open-source relational database management system (RDBMS), known for its speed and dependability in web-based applications. (MySQL., 2024)

**Database Key Concepts**

Databases are fundamental to efficient data storage and management. Understanding essential concepts is crucial when designing and managing databases. The basic ideas include:

**Table**: Information presented in rows and columns.

**Rows:** Represent individual entries or records.

**Columns:** Fields or attributes that describe data.

**Key**: A unique identifier for records within a table.

**Primary Key:** Each row has a distinct identifier, ensuring uniqueness.

**Foreign Key:** A reference in one table pointing to the primary key in another, creating a connection between the tables.

**Relationships**: Define how tables are connected through shared data.

**One-to-One:** One record in Table A matches one record in Table B.

**One-to-Many:** A single record in Table A is linked to multiple records in Table B. Many-to-Many: Multiple records in Table A correspond to multiple records in Table B, often requiring an intermediary table.

## 2.4 OTHERS LITTERATURES
Certainly! Here are the additional points related to managing an online fashion store, along with references for each:

### 2.4.1. Virtual Reality (VR) and Augmented Reality (AR) in Fashion Retail:

Reference: Broll, G., & Mühlpfordt, M. (2020). Virtual reality in retailing: A review and research agenda. *Journal of Retailing and Consumer Services,

Alcañiz, M., & Currás, E. (2018). Augmented reality applications for tourism and retailing. *Journal of Business Research, This literature explores how VR and AR technologies are transforming the online shopping experience in fashion retail, offering virtual fitting rooms, interactive product visualizations, and immersive brand experiences to enhance customer engagement and satisfaction.

### 2.4.2. Personalization and Customer Segmentation Strategies:

Reference: Kumar, V., & Pansari, A. (2016). Competitive advantage through engagement: A study of customer engagement, marketing capabilities and firm performance. Management Science,

Verhoef, P. C., & Donkers, B. (2005). The effect of acquisition channels on customer retention and cross-buying in financial services. *International Journal of Research in Marketing,

This literature examines strategies for implementing personalized shopping experiences based on customer data, preferences, and behaviors. It discusses how personalized recommendations, targeted marketing campaigns, and customized product offerings can drive customer loyalty and improve business performance.

### 2.4.3. Voice Commerce and Conversational Commerce:

Reference: Vinyals, O., Le, Q. V., & Sutskever, I. (2015). Sequence-to-sequence learning with neural networks. *Advances in Neural Information Processing Systems,

Britton, C., & Grainger, S. (2020). The future of voice commerce. *International Journal of Retail & Distribution Management,

This literature explores the adoption of voice technologies such as virtual assistants and voiceactivated devices in ecommerce, enabling customers to shop, search, and receive personalized recommendations through voice commands.

### 2.4.4. Blockchain Technology in Supply Chain Management:

Reference:Iansiti, M., & Lakhani, K. R. (2017). The truth about blockchain. *Harvard Business Review,

Beck, R., Müller-Bloch, C., & King, J. L. (2018). Governance in blockchain technologies & social contract theories. *Journal of the Association for Information Systems,

This literature investigates how blockchain technology enhances transparency, security, and efficiency in supply chain operations within the fashion industry, addressing challenges such as counterfeit goods, supply chain traceability, and smart contract applications.

### 2.4.5. Social Media Influencer Marketing in Fashion:

Reference: De Veirman, M., Cauberghe, V., & Hudders, L. (2017). Marketing through Instagram influencers: The impact of number of followers and product divergence on brand attitude. *International Journal of Advertising,

Jin, S. V., Muqaddam, A., & Ryu, E. (2018). The role of social influencers in brand attachment: The persuasion knowledge model perspective. *Journal of Brand Management,

This literature examines the effectiveness of influencer marketing strategies on social media platforms like Instagram and TikTok in promoting fashion brands, influencing consumer purchase decisions, and enhancing brand awareness and engagement.

## 2.4.6. Subscription Models and Membership Programs:

Reference: Biedenbach, G., & Marell, A. (2010). A dynamic process model of brand extension: Uncovering good and bad extension paths. *Journal of the Academy of Marketing Science,

Tsekouras, D., Kourouthanassis, P., & Drossos, D. (2019). Subscription-based fashion e-commerce: Consumer behavior, drivers, and barriers. *Journal of Retailing and Consumer Services,

This literature explores the adoption of subscription-based business models and membership programs in online fashion retail, analyzing customer motivations, retention strategies, and operational implications for ecommerce businesses.

## 2.4.7. Green and Sustainable Fashion Initiatives:

Reference:Niinimäki, K. (2018). Sustainable fashion: New approaches.

Fletcher, K. (2016). Sustainable fashion and textiles: Design journeys.

This literature focuses on initiatives and practices within the fashion industry aimed at promoting sustainability, including ethical sourcing, eco-friendly materials, circular economy principles, and corporate social responsibility (CSR) initiatives.

## 2.4.8. Cross-border Ecommerce and Global Market Expansion:

Reference: Hsiao, C., & Chi, H. (2018). The impact of logistics performance on international market expansion: Evidence from international fashion brands. *International Journal of Production Economics,

Lian, J. W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior,

This literature examines strategies, challenges, and opportunities for expanding online fashion retail operations across international borders, addressing issues such as market entry strategies, localization efforts, regulatory compliance, logistics management, and cultural adaptation.

These references and explanations provide a foundation for exploring emerging trends, technologies, and strategic considerations relevant to managing and optimizing an online fashion store in today's competitive global marketplace.

In summary, innovation, due respect to consumer behavior, and sustainability are called for when it comes to running an online fashion store. Improve customer interaction by using VR, AR, and voice commerce, among other technologies, for better interactions; personalized marketing and usage of influencer improve brand visibility and loyalty. Block-chain for supply chain transparency and globalization through omnichannel approaches can further develop the competitive advantage of a brand. By integrating these strategies together, fashion retailers will overcome the challenges arising from digital dynamism, meet the evolving consumer expectation, and realize sustainable growth in the competitive online marketplace.

# CHAPTER 3: SYSTEM ANALYSIS AND DESIGN

## 3.0 Introduction

This chapter deals with the problems of the present system, describes the proposed digital solution, and delineates the development process for a new online fashion store management system. System requirements, design diagrams, and the methods of development feature in this chapter. A clear understanding of the user requirements, precise specification, and development of a strong architecture are developed to support business and customer needs. The chapter brings into light the establishment of efficiency within an existing system and the integration of technology to further develop operation efficiencies, accuracies, and user satisfaction.

## 3.2 Analysis of the Current System

### 3.2.1 Problems of the current system

The current online fashion store management system faces several significant problems that hinder its efficiency, accuracy, and user satisfaction. This section outlines the major issues with the existing system:

### 3.2.1.1 Manual Inventory Management

Manual inventory updates lead to inaccurate stock levels, causing stock-outs or overstocking. Delays in updating inventory data result in missed sales opportunities.

### 3.2.1.2 Inefficient Order Processing

Orders done manually are processed more slowly and randomly, which causes fulfillment to be delayed and has a negative impact on customer satisfaction and cart abandonment.

### 3.2.1.3 Poor User Experience

Because of the complicated checkout method, non-intuitive design, and lack of personalization of the current system, there is a higher rate of cart abandonment and a reduction in customer engagement.

### 3.2.1.4 Inadequate Data Management

The inability to obtain full information, make educated decisions, and monitor performance is caused by inadequate data storage, a lack of real-time analytics, and poor reporting.

### 3.2.1.5 Limited Integration with Suppliers and Shipping

Inaccurate shipment information, manual supplier coordination, and ineffective logistics management all lead to ineffective replacement of stock and lost customer confidence.

### 3.2.1.6 Security Concerns

Due to the absence of adequate security measures in the current system, important data is susceptible to attacks. Payment processing that is not secure reduces customer confidence and raises the possibility of fraud.

### 3.3 Analysis of the New System

### 3.3.1 Introduction

We will examine the new online fashion store management system in this section. This analysis will concentrate on how the new system provides real-time data analytics, enhances inventory management, and improves customer experience in order to address the issues found in the present manual system. We will describe the design process and tools utilized, as well as the functional and non-functional needs of the new system. This examination will give an overview of the advantages and functionality of the new system.

With the use of innovative technology and industry best practices, the new system seeks to address the main problems with the present set up in order to increase shopping efficiency. We will investigate how these improvements lead to improved order processing, better inventory control, and more perceptive data analysis. We will illustrate how the new solution complies with the goals of raising efficiency, accuracy, and user satisfaction by describing the system requirements and design methodologies.

### 3.3.2 System Requirements

### Functional Requirements

### 1.User Registration and Authentication

**Hardware Requirements:** Server with secure authentication protocols and sufficient processing power to handle user login and registrations.

**Software Requirements:**

- User registration and log in module for new and returning users.
- Database for securely storing user credentials and personal information.
- Encryption tools to ensure data security and protect user information from unauthorized access.

### 2. Product Catalog Management

**Hardware Requirements:** Server with adequate storage capacity to manage and store product information, images, and meta data.

**Software Requirements:**

- Inventory management software to update and manage product details and availability.
- Product catalog database for organizing and retrieving product information.

⊙ Administrative interface for managing and editing product listings and details.

## 3. Real-Time Inventory Tracking

**Hardware Requirements:** High-performance server capable of handling real-time data processing and updates.

**Software Requirements:**

⊙ Inventory tracking software to monitor stock levels and update inventory in real time.
⊙ Real-time database synchronization tools to ensure accurate and up-to-date inventory data across all systems.

## 4. Order Management

**Hardware Requirements:** Reliable server designed to manage and process order transactions efficiently.

**Software Requirements:**

⊙ Order management system to handle order placement, processing, and tracking.
⊙ Database for storing detailed order information, including customer details and product data.
⊙ User interface for customers to place and manage their orders, and for administrators to track and process orders.

## 5. Payment Processing

**Hardware Requirements:** Secure server equipped to handle financial transactions and protect payment data.

**Software Requirements:**

⊙ Integration with payment gateway APIs for processing payments securely.
⊙ Secure transaction processing module to handle payment information and ensure transaction integrity.

## 6. Reporting and Analytics

**Hardware Requirements:** Server with high processing power to support complex data analysis and report generation.

**Software Requirements:**

- Reporting tools for generating sales, inventory, and performance reports ⭘ Analytics software to analyze data trends, user behavior, and business metrics.
- Database for storing and managing sales and inventory data for reporting purposes.

**Non-Functional Requirements**

**Scalability**

The system should be designed to handle an increasing number of users, products, and transactions without performance degradation. It must support scaling up infrastructure to accommodate growth in traffic and data volume.

**Security**

The system must implement robust security measures to protect user data and privacy. This includes encryption for data storage and transmission, secure authentication protocols, and access controls to prevent unauthorized access.

**Usability**

The system should offer an intuitive and user-friendly interface to enhance the overall shopping experience. It should be easy to navigate, with clear product information, straightforward ordering processes, and responsive design for various devices.

**Performance**

The system should provide quick access to information and responsive performance for all user interactions. It must handle high volumes of concurrent users and transactions efficiently, minimizing latency and ensuring smooth operation.

**Reliability** The system should ensure high availability and minimal downtime to maintain continuous operation. It must include failover mechanisms, regular backups, and redundancy to prevent data loss and ensure consistent service delivery.

**3.3.3 Functional Diagram**

The functional diagram will illustrate the relationship between the principal components of the system, including user interfaces, database, inventory management, order processing, and reporting modules.
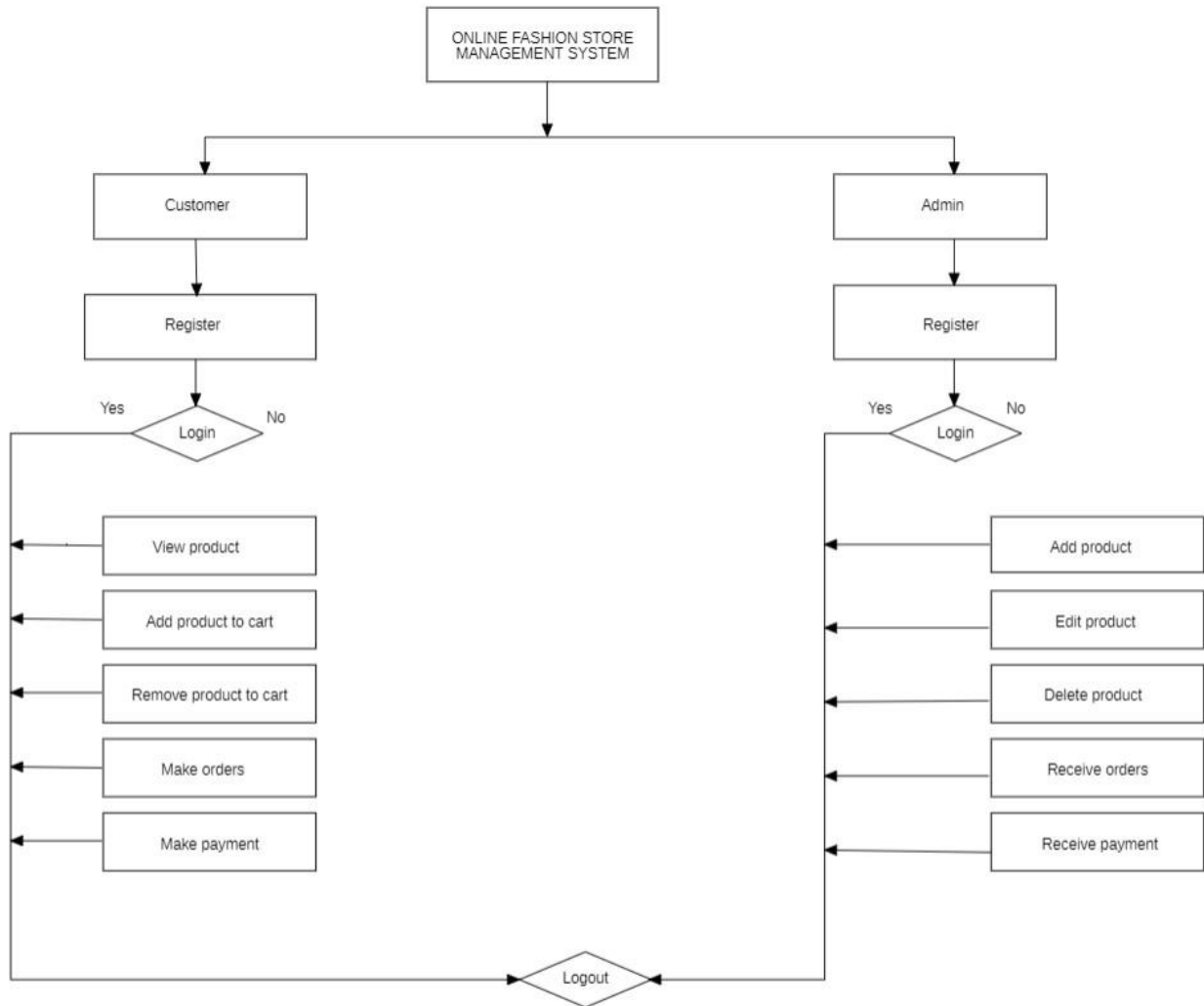
*Figure 3.1 Functional diagram*

**3.3.4 Methodological Approach**

**3.3.4.1 Data Collection Techniques**

To understand user needs and the local context for Uzima Bora's online store. To gather the necessary information for system development, the following techniques were use

1.  **Observation:** This is a very important part of your research, as it provides you with firsthand information on customer behavior and shop operations. You can obtain qualitative data from the time you spend at Uzima Bora that supplements findings from the survey and interviews.

Direct observation: Spend time in the shop, observing customer and staff behavior.

Participant observation: interact with customers and staff while observing their actions.

2.   **Documentation:** This will involve the research of existing sales data at Uzima Bora to develop purchase trends and popular products. It will also involve research into other successful online fashion stores to identify user-friendly features which can be replicated in an online store for Uzima Bora.

**3.3.4.2 Software Development Methodology for Online Fashion Store Management System**

The Agile model was chosen for the development of the online fashion store management system due to its collaborative nature and focus on continuous improvement. Agile allows for multiple software developers to work together, share knowledge, and adapt the system based on feedback, which is essential for a customer-centric application like an online fashion store.

**Steps Followed in the Agile Model**

1.   **Requirement Gathering and Analysis**
   - **Activities:** collected detailed requirements from stakeholders, including store owners, managers, and potential users.
   - **Outcome:** comprehensive list of functional and non-functional requirements, user stories, and use cases.
2.   **Design**

   - **Activities:** created initial design prototypes and system architecture.
   - **Outcome:** wireframes, UI/UX designs, and a robust system architecture plan that includes the integration of key components such as user interfaces, database structures, and service layers.
     **3. Development**

   - **Activities:** developed the system in iterative cycles (sprints), with each iteration building on the previous one.
   - **Outcome:** incremental development of features such as user registration and authentication, product catalog management, real-time inventory tracking, order processing, and payment integration.

**4. Testing**

   - **Activities:** conducted testing at the end of each iteration to identify and fix issues. This included unit testing, integration testing, system testing, and user acceptance testing.
   - **Outcome:** early detection and resolution of bugs, ensuring a stable and reliable system.

**5. Deployment**

- **Activities:** deployed the system for user testing and feedback. Each iteration included deploying the latest build to a staging environment where users could interact with the new features.

- **Outcome:** regular user feedback and validation, enabling quick adjustments and improvements.

**6. Review and Maintenance**

- **Activities:** continuously reviewed and improved the system based on user feedback. This included performance tuning, feature enhancements, and bug fixes.

- **Outcome:** a continuously evolving system that meets user needs and maintains high performance and reliability.

**3.3.4.3 System Design Methodology**

The Structured System Analysis and Design Methodology (SSADM) was chosen for system design. This approach is suitable for creating a system with well-defined and clear processes. Dataflow Diagram (DFD): Represents the flow of data through the system at various levels.

**Entity Relationship Diagram (ERD):** Exhibits and explains all the entities found in the proposed Database, their relationships, and attributes
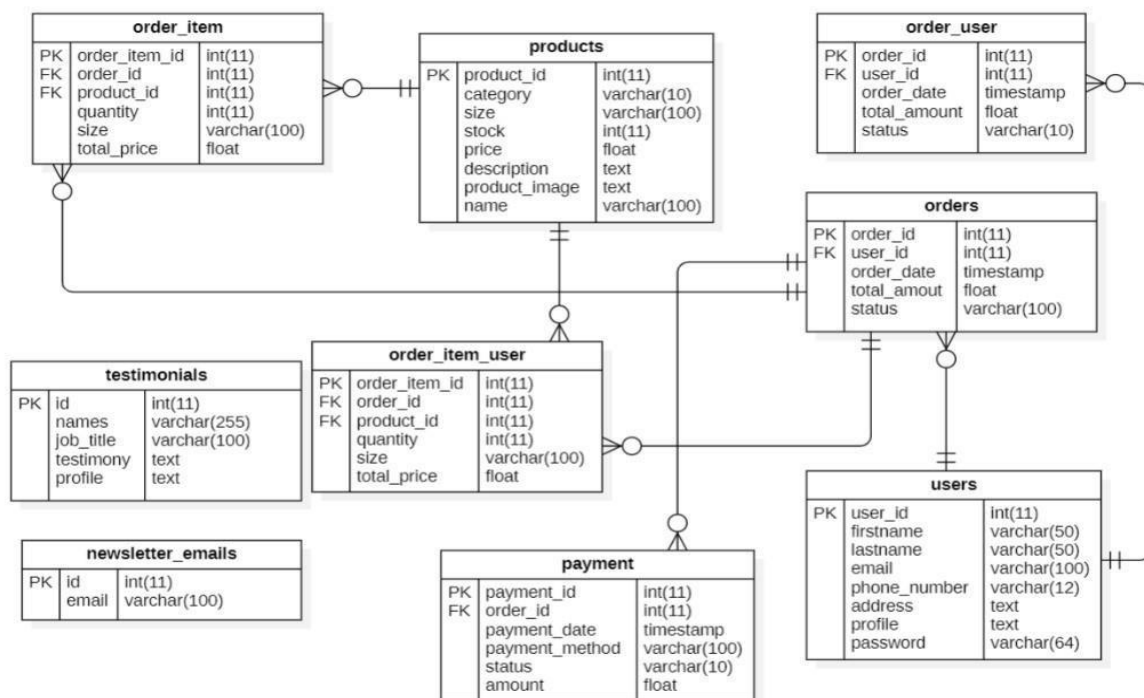


*Figure 3.2 Entity Relationship Diagram*

**Relationships among entities**

1.  **Users - Orders: One-to-Many**

    o   One user can place multiple orders.

    o   This is represented by the foreign key user_id in the orders table, which points to the primary key user_id in the users table.

2.  **Orders - Order_Items: One-to-Many**

    o   One order can contain multiple order items.

    o   The order_id in the order_item table is a foreign key that relates to the primary key order_id in the orders table.

3.  **Orders - Payments: One-to-One**

    o   Each order can have one payment associated with it.

    o   This is represented by the order_id foreign key in the payment table, which relates to the primary key order_id in the orders table.

4.  **Products - Categories: Many-to-One**

    o   Many products can belong to one category.

    o   In the products table, the category field represents the category of each product.

5.  **Products - Order_Items: One-to-Many**

    o   One product can appear in multiple order items.

    o   This is represented by the product_id foreign key in the order_item table, which refers to the product_id primary key in the products table.

6.  **Order_User - Users: One-to-Many**

    o   Each user can place many orders through the order_user table.

    o   This relationship is represented by the foreign key user_id in the order_user table, which points to the user_id in the users table.

7.  **Order_Item_User - Products: One-to-Many**

    o   Each product can be part of multiple user orders through the order_item_user table.

    o   This is represented by the foreign key product_id in the order_item_user table, which references the product_id in the products table.

8.  **Order_Item_User - Orders: One-to-Many**

- ○ One order can contain multiple order items in the order_item_user table.
- ○ This is represented by the order_id foreign key in the order_item_user table, which relates to the primary key order_id in the orders table.

**Dataflow Diagram (DFD):** The diagram to be drawn which would present the flow of data in the system at various levels. **Level 0, 1 and 2: Context DFD**

**a. Level 0 DFD: Context Diagram**
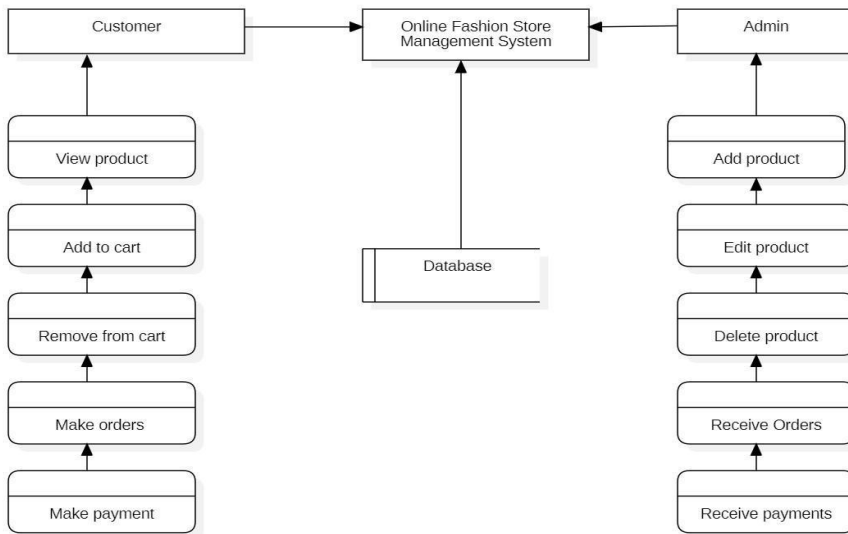


Figure 3.3 Level 0

**b. Level 1 DFD: Break up of Main Processes**
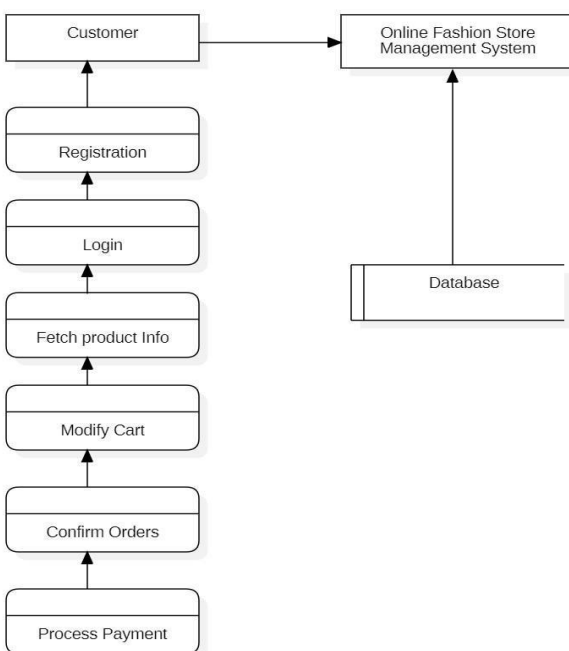


Figure 3.4 Level 1

**c. Level 2 DFD: Break up of Main Processes**



| Customer | → | Online Fashion Store Management System |

Select Category

View product Details

Choose Size

Check stock

Confirm shipping

Enter payment info
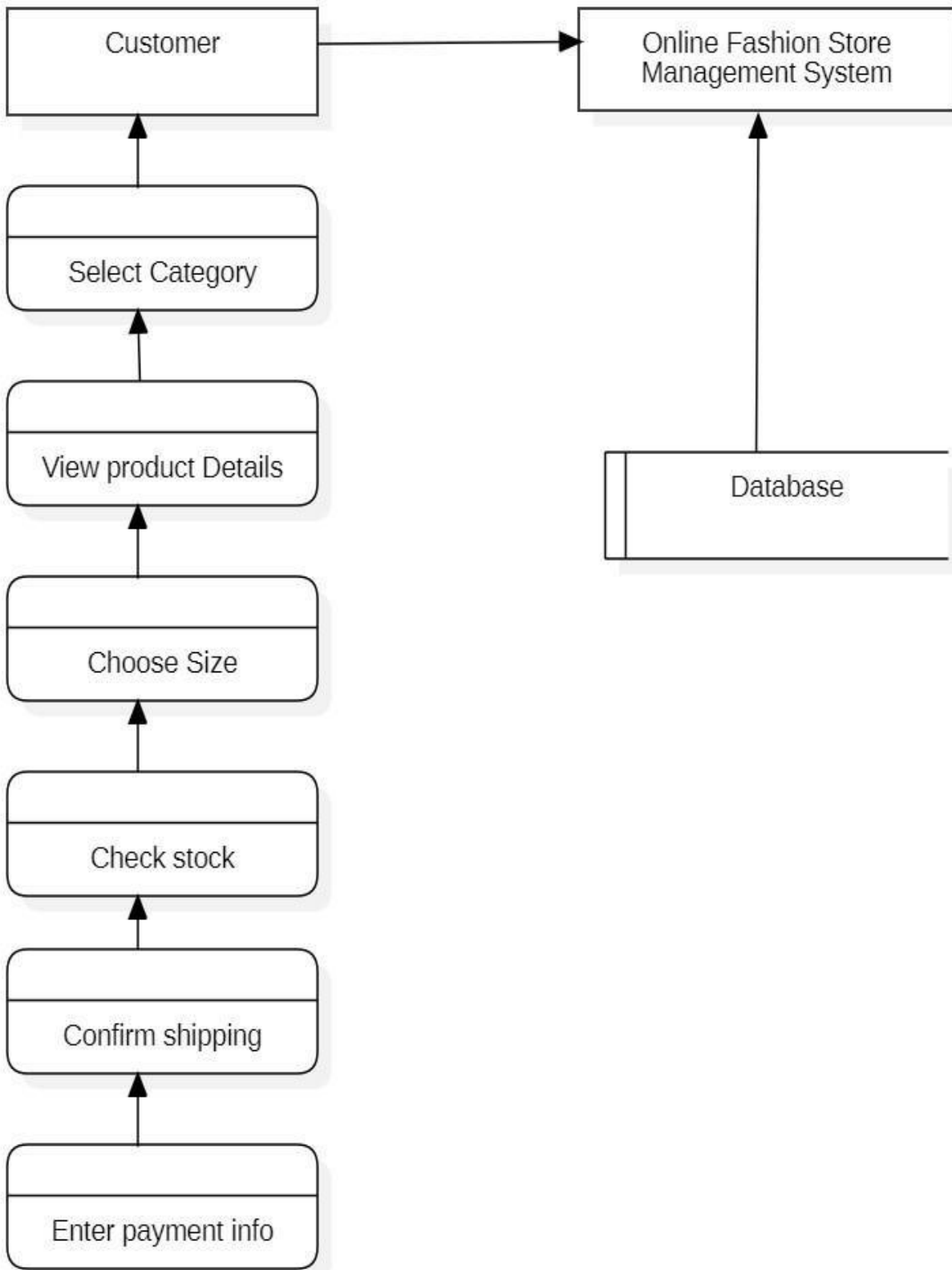
Database

*Figure 3.5 Level 2*

**Data Dictionary:** Lists all attributes found in every table created in the database. For each field, the name, data type, and specific constraints are provided.



*Figure 3.6 Data Dictionary*

The data dictionary is composed of 9 tables where all the tables are listed, each table with, description, including its attributes and values and constraints.

# CHAPTER 4: SYSTEM IMPLEMENTATION

## 4.0 Introduction

The implementation stage of Online Fashion Store Management System refers to translating design specifications into a real-world system. For this chapter, details about coding practices, tools, and technologies are given for the implementation. This therefore covers everything from set-up to eventual launch, bringing out major development milestones and integration work.

## 4.1 Implementation and coding

### 4.1.1 Introduction

The Online Fashion Store Management System has been developed with the following tools and technologies

### 4.1.2 Tools and technologies used

The following are the tools and technologies used in the development of this Web-based Online Fashion store management system:

**Programming languages:** in particular, the method used for the implementation of this system was done with PHP scripting on the server-side and JavaScript on the client-side to deliver its various forms of interactivity, with SQL holding it all in its database.

**Database:** MySQL database has been applied due to its powerful data management, and PHP can be integrated with it very easily.

**Development Environment:** It was developed on Visual Studio Code. Version Control: Git. **Hosting and Deployment:** It has been hosted on the Cloud service provider; thus, deployment of Apache server has been done to provide better scalability and reliability.

### 4.1.3. Screenshots

### 4.1.3.1. User side



*Figure 4.1 Menu*

The above menu bar shows the links that go to pages, redirects to cart in order to see products that are desired to be purchased by the customer. It also contains the profile photo icon of the customer when connected. Inside that icon, there is a dropdown to the user's profile, dashboard, cart, and payment history.
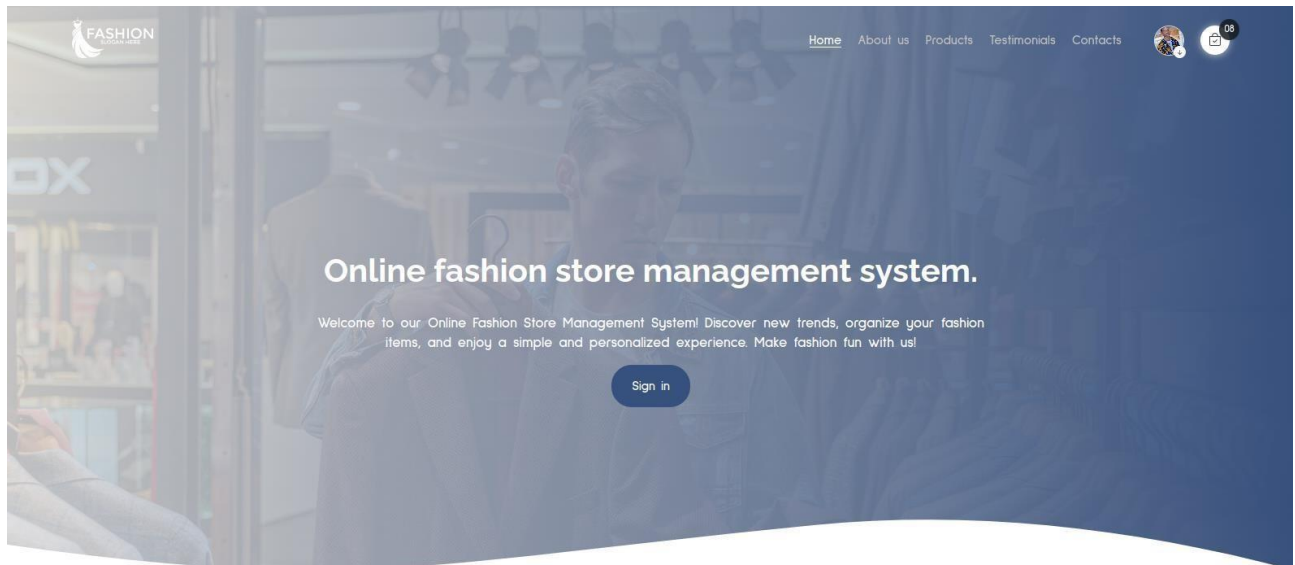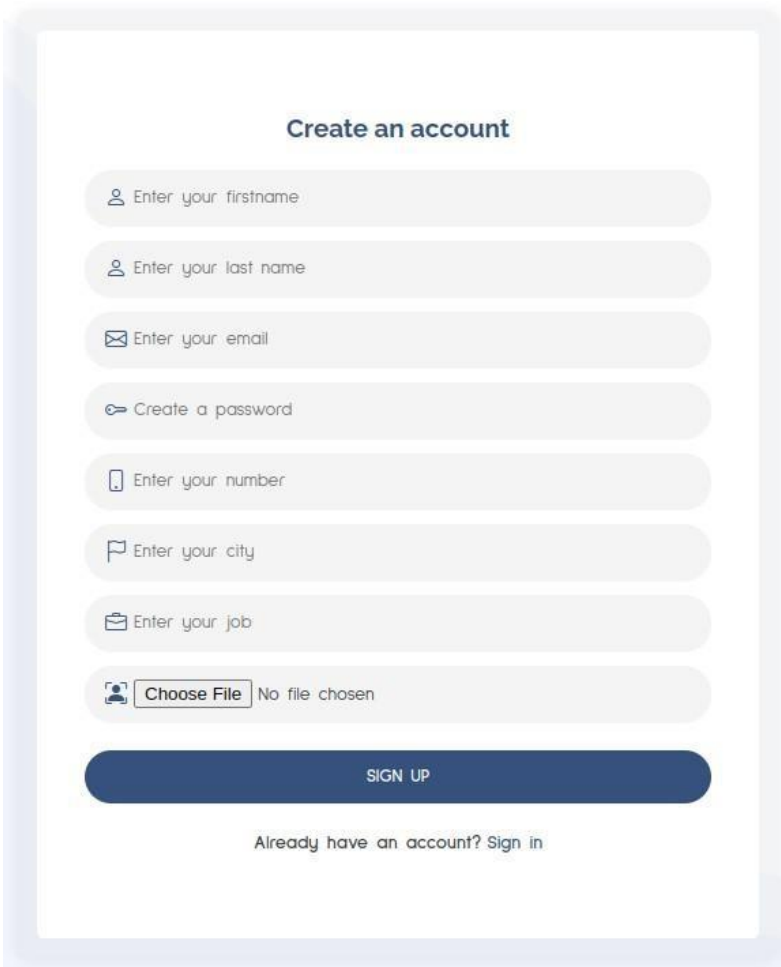
*Figure 4.2 Cover page (Home)*

This home page welcomes the customers to the system, contains this system's name, and the Sign In button.



*Figure 4.3 Login*

On this login page, customers can log in with their email address and password. If they do not have one, they can click "Sign-up." If one has forgotten his or her password, he or she clicks "Forgot Password" and gets a link to reset the password mailed via email.

*Figure 4.4 Create an account*

This register page is where the user will complete the fields to create his account. If he has an account already he can sign in or login.
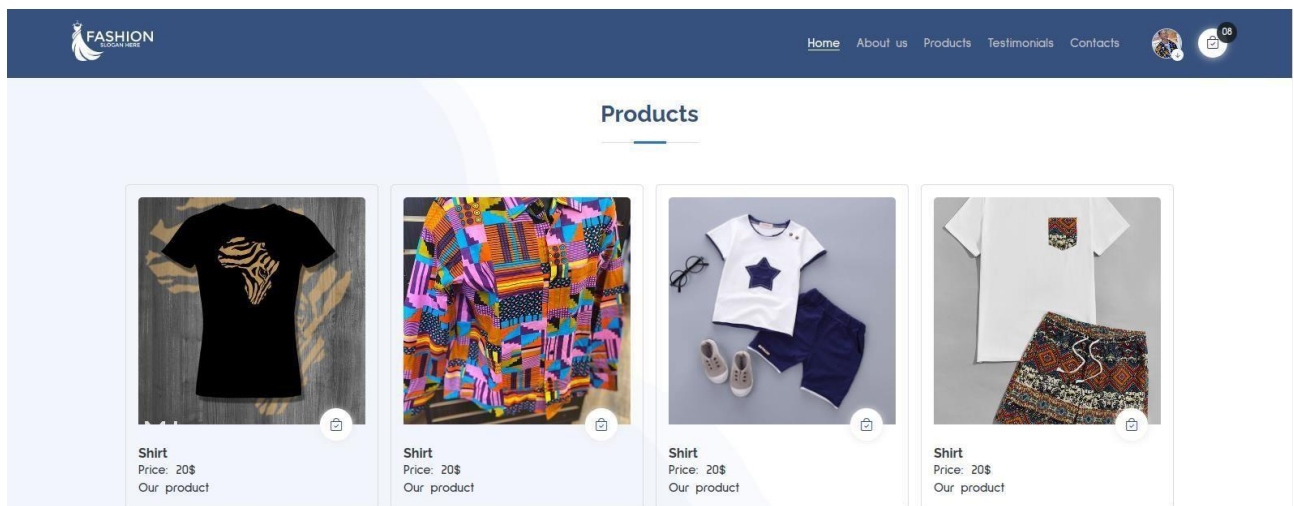


*Figure4.5  Products*

This part list 4 recent products added in the system each product with the name, price and the link that redirect to cart. Under there is a button that redirect to view in details when you want to view many products.
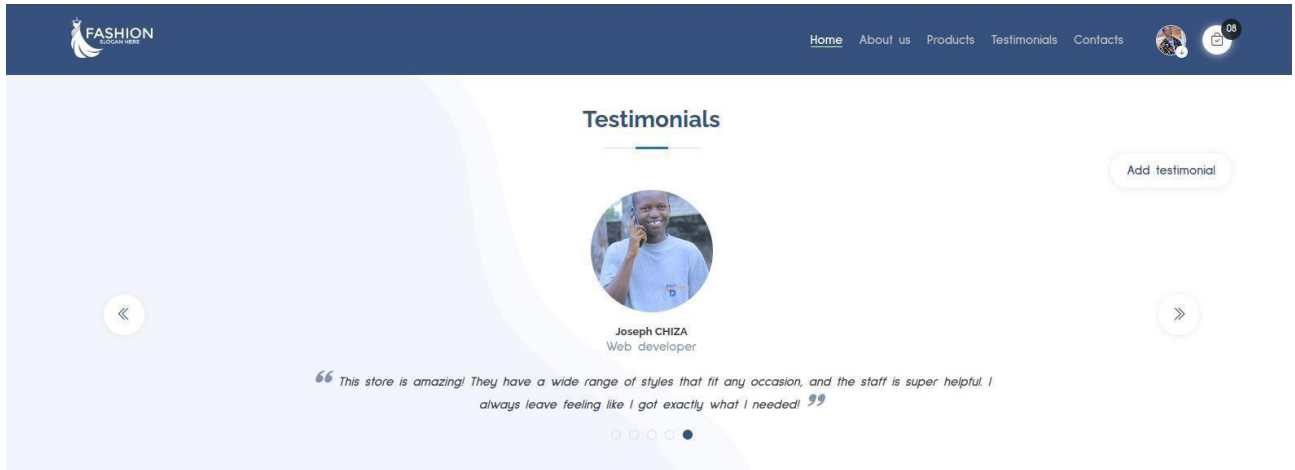
*Figure 4.6 Testimonials*

The testimonials section is designed to display reviews and experiences from customers. It plays a crucial role in building trust and demonstrating the quality of your products or services.
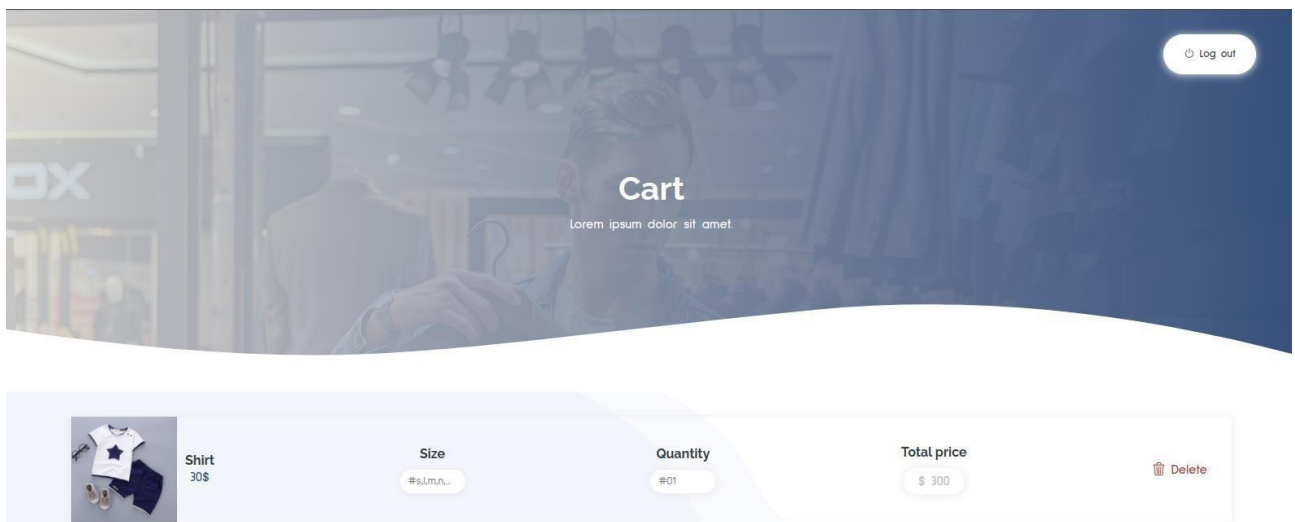


*Figure 4.7 Cart*

The customer's shopping cart contains a list of products they want to purchase. Each product has information like size, quantity, and the price. Customers can change the quantity or delete products, and then proceed to checkout.
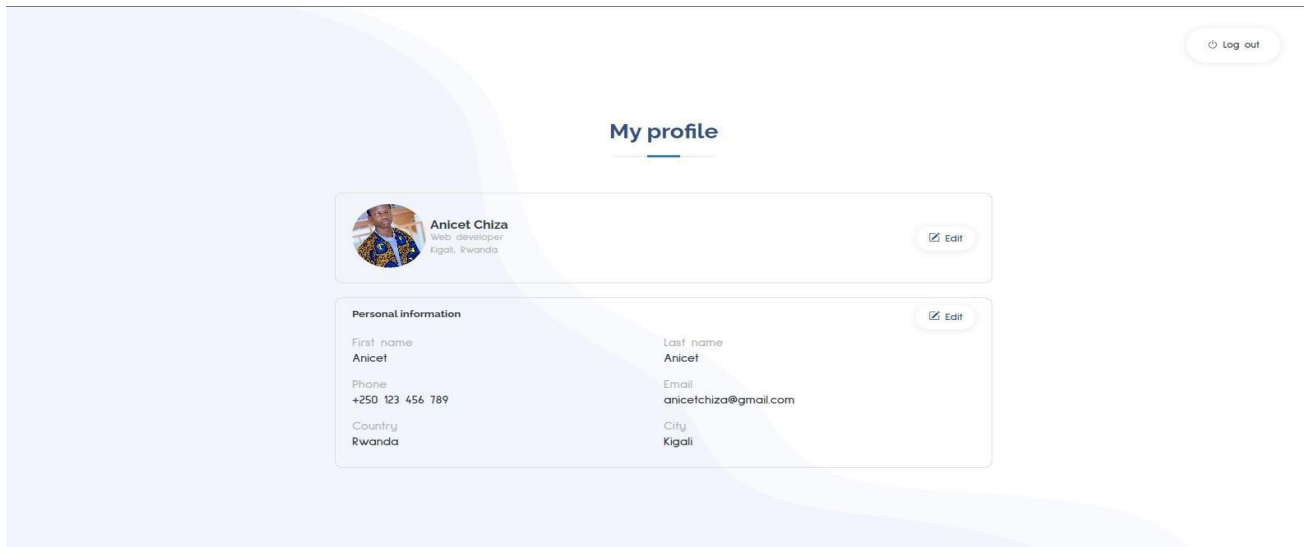
*Figure 4.8 User profile*

The user profile displays a customer's information and allows them to delete their account. To confirm the deletion, a popup requires the user to enter their password.
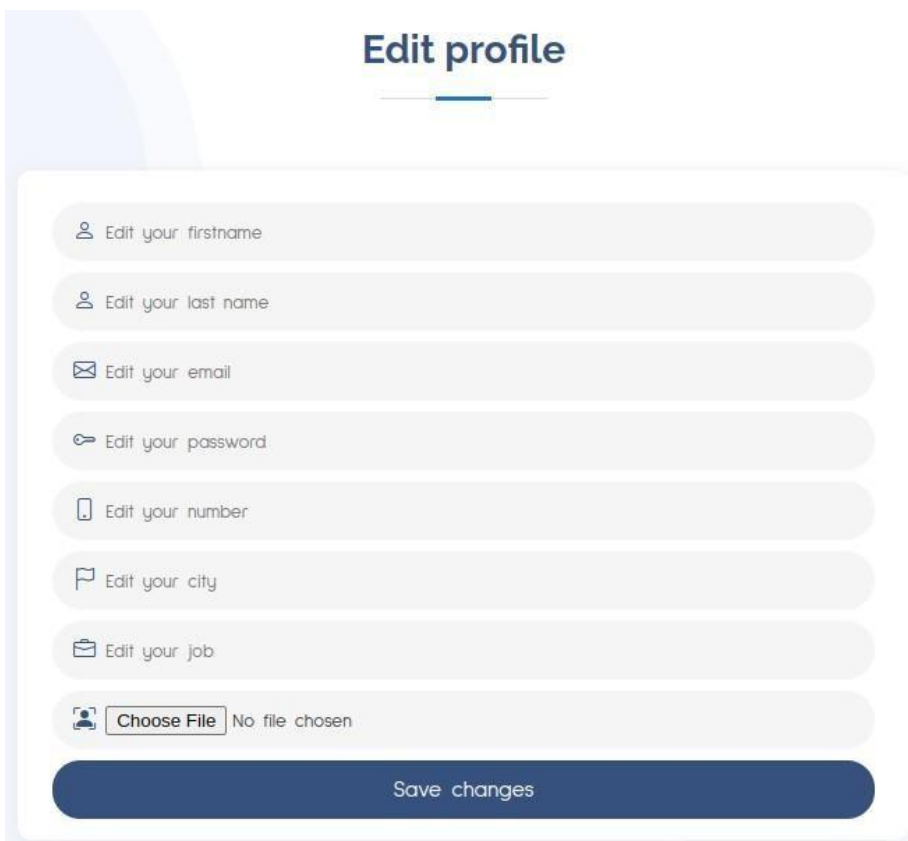


*Figure 4.9 Update profile*

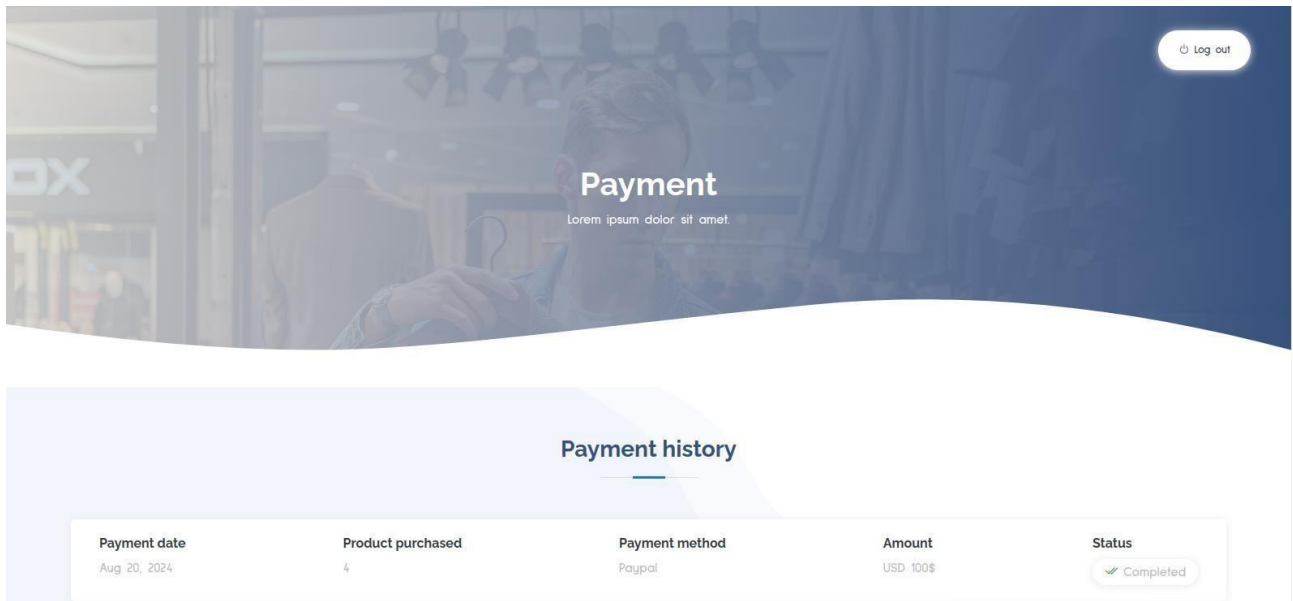This part of the system allows the customers to update their information to the profile.

*Figure 4.10 Payment history*

The payment history shows all completed payments, including date, number of products purchased, payment method, amount, and status.
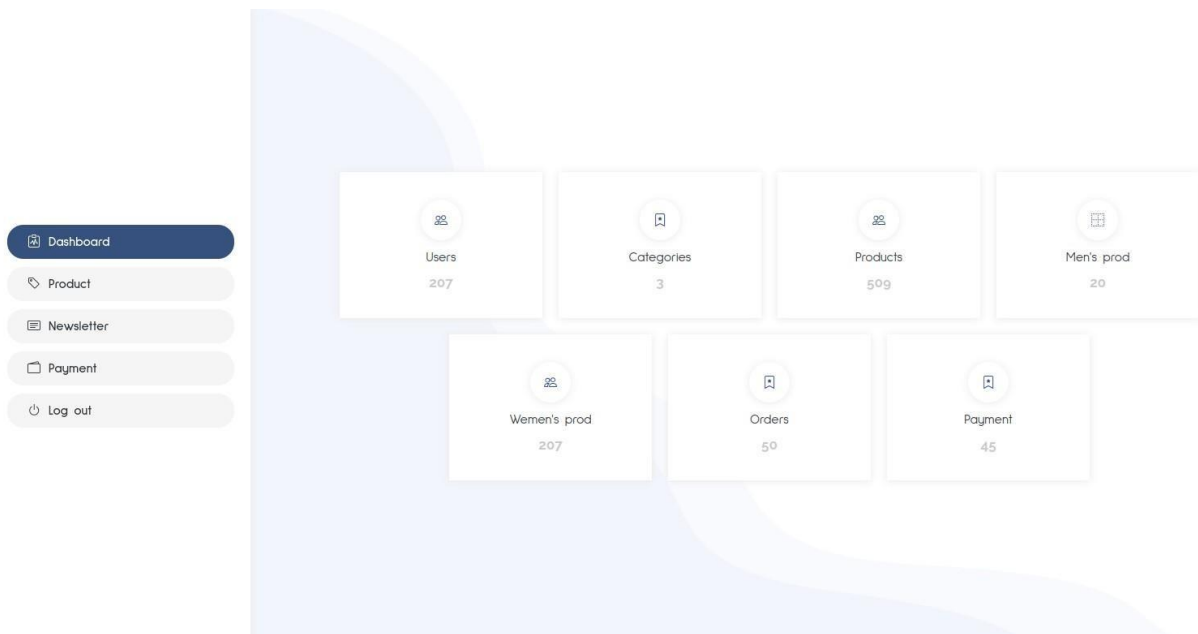
## 4.3.1.2 Admin Dashboard



*Figure 4.11 Admin dashboard*

The screenshots here below show the admin dashboard, number of the users in the system, number of categories that the system has, number of products, number of products for man and women, number of orders and payment done.
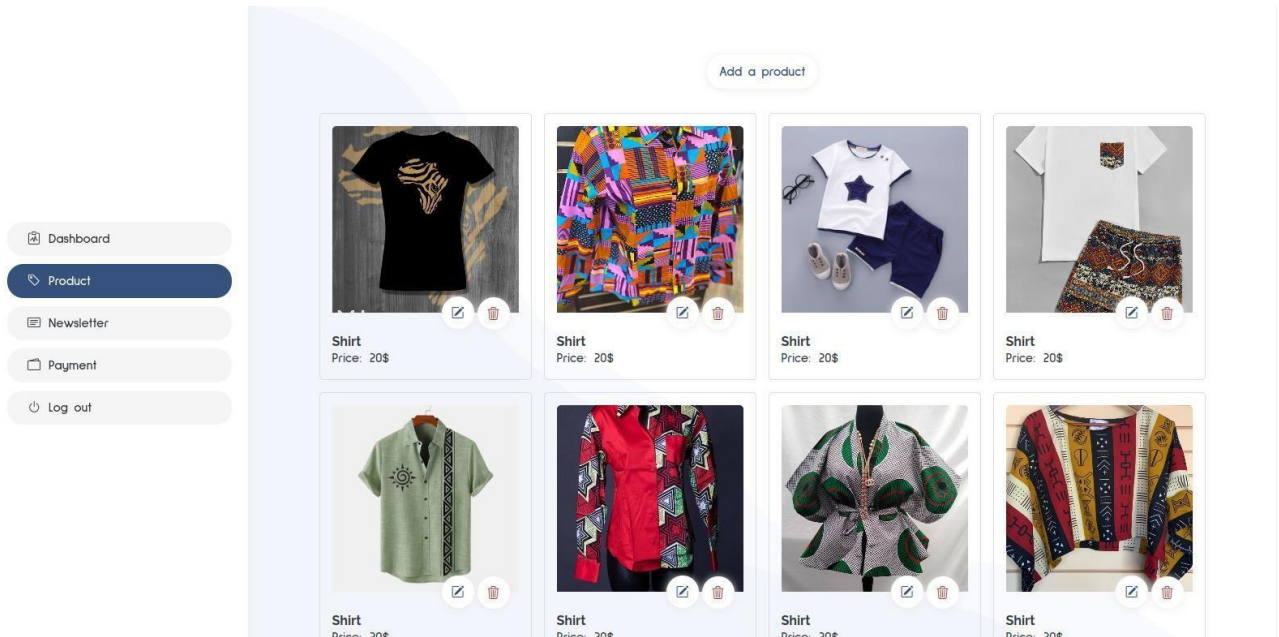
*Figure 4.12 Admin product*

This admin page, we have the possibility to see a product added to the system, and we can have the possibility to edit it, also there is a button, once clicked we can add a new product.
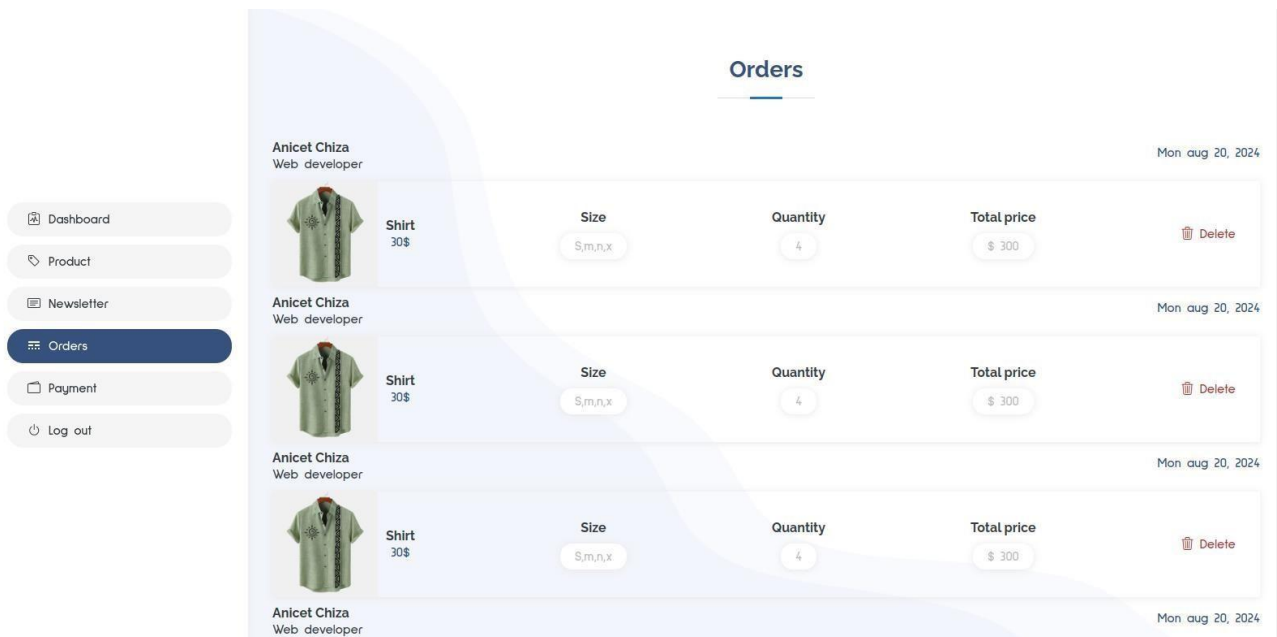


*Figure 4.13 Admin orders*

On this page the admin can see all the orders done by the customers.

*Figure 4.14 Admin payment history*

On this page, the admin can see all the payment done by the customers, he can the names of the customer, date of payment, the product purchased, the payment method, the amount and also the status of the payment.

**Testing**

### 4.1.1 Introduction

To ensure the online fashion store inventory management system produces accurate and desired results, a comprehensive testing process was conducted. This testing involved multiple phases to assess system performance, reliability, and stability.

### 4.1.2. Unit Testing Results

Unit testing focused on individual system modules:

- **Authentication Module:** Verified successful user registration and login.
- **Order Processing:** Confirmed accurate order recording and processing.
- **Inventory Control:** Ensured accurate stock level updates after sales and returns.

### 4.1.3. Validation Testing Results

Validation testing verified system functionality against user requirements:

- **User Interface:** Confirmed adherence to design specifications and ease of use.

- **Business Logic:** Verified correct implementation of business rules, such as price calculations and stock level updates.
- **Data Integrity:** Ensured accurate data entry and processing.

### 4.1.4. Integration Testing Results

Integration testing evaluated the interaction between different system modules:

- **Frontend-Backend Integration:** Confirmed seamless communication between the frontend and backend.
- **Payment Gateway Integration:** Verified accurate transaction processing.
- **Email Notifications:** Ensured correct sending of order confirmation and stock level change notifications.

### 4.1.5. Functional and System Testing Results

Functional testing examined specific system features:

- **Search and Filter:** Verified effective product search and filtering capabilities.
- **Checkout and Shopping Cart:** Assessed the functionality of the checkout and shopping cart.
- **Administrative Tasks:** Checked the functionality of administrative features like inventory control and sales monitoring.

System testing evaluated the overall system performance:

- **Load Testing:** Simulated various load scenarios to ensure system responsiveness and stability.
- **Security Testing:** Conducted vulnerability analysis and addressed potential security issues.

### 4.1.6. Acceptance Testing Report

Acceptance testing involved stakeholder review:

- **User Input:** Gathered feedback from users to determine if the system met their needs and expectations.
- **Bug Reports:** Resolved any identified issues.
- **Deployment Readiness:** Assessed system readiness for production based on successful testing and stakeholder approval.

# CONCLUSION AND RECOMMANDATIONS

## Conclusion

One of the biggest achievements in digital fashion retailing in Kigali, Rwanda, is the Online Fashion Store Management System created for Uzima Bora. To address major gaps in the manual processes of inventory management, order processing, and customer engagement, the system makes use of modern e-commerce technologies. In addition to simplifying operations, the addition of services like real-time inventory tracking, secure payment processing, and customized suggestions has raised consumer satisfaction. The concept addresses the gap between traditional stores and the current consumer, and other fashion shops will use this experience as a model to improve their online presence.

A well-designed online management system can significantly improve customer experiences and business processes, as demonstrated by the project's success. By adapting to Uzima Bora's changing needs and industry trends, the system will be able to grow with it and become a strong contender in Rwandan e-commerce.

## Recommendations

- **Incorporate artificial intelligence**: we recommend the department to include artificial intelligence (AI) in its academic program. The capabilities of modern e-commerce systems, such as automated customer support, predictive analytic, and tailored suggestions, can be substantially improved by these technologies, which are becoming more and more significant in today's technological environment.

- Support for accessing modern technologies: we implore the department to make materials and components of contemporary technology more easily accessible, as they are not accessible locally. With this assistance, students will be able to work on innovative projects and remain at the top of technical innovation.

- **Encourage an entrepreneurial spirit:** to encourage students to think beyond coding and programming, we suggest the department place a strong emphasis on entrepreneurship. Helping students turn their projects, such as the "Online Fashion Store Management System," into successful companies that can compete in the tech industry is important.

- **Encourage creativity and critical thinking:** we recommend that the department add more challenges and competitions to the learning, given the competitive character of the tech industry. Students will be able to produce original and significant answers as a result of these difficulties, which will promote creativity, innovation, and critical thinking.

- **Adopt the system to improve business operations:** it is recommended that Uzima Bora implement the Online Fashion Store Management System in order to optimize their business processes. Important problems such insufficient data management, poor order processing, and manual inventory management are addressed by the system. With system use, the business may improve record keeping, minimize data loss, and produce comprehensive reports of which will increase customer satisfaction and operational efficiency.

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# APPENDIX

## 4.3.1.3 Source codes

```html
31        <!-- Header -->
32        <header class="header">
33            <div class="logo">
34                <a href="#"><img src="../asset/images/logo.png" alt=""></a>
35            </div>
36            <div class="header-list">
37                <ul>
38                    <li><a class="acti" href="index.php">Home</a></li>
39                    <li><a href="#about">About us</a></li>
40                    <li><a href="#product">Products</a></li>
41                    <li><a href="#testimonial">Testimonials</a></li>
42                    <li><a href="#contact">Contacts</a></li>
43                </ul>
44                <div class="menu">
45                    <i class="bi bi-list-nested menu-icon"></i>
46                </div>
47                <div class="overlay"></div>
48                <i class="bi bi-x-lg exit"></i>
49                <div class="mycart">
50                    <a href="#"><i class="bi bi-bag-check"></i></a>
51                    <span>08</span>
52                </div>
53            </div>
54        </header>
```

*Figure 15. Header*

```css
asset > css > # product.css > ...
1   /*-----------------------/
2   #Product page
3   /-----------------------*/
4
5   .product-cover {
6       width: 100%;
7       height: 60vh;
8       display: flex;
9       position: relative;
10      align-items: center;
11      text-align: center;
12      color: #fff;
13      flex-direction: column;
14      justify-content: center;
15      background: linear-gradient(to left, #37517efc 0%, #ebebebce 100%), url(../images/home/home-4.jpg) fixed no-repeat;
16      background-size: cover;
17  }
18  input{
19      width: 100%;
20  }
21  .product-cover h2 {
22      font-size: 2.5rem;
23      margin-bottom: 10px;
24  }
25
26  .waves {
27      position: absolute;
28      bottom: 0;
29      width: 100%;
30      overflow: hidden;
31      line-height: 0;
32  }
33
34  .waves svg {
35      display: block;
36      width: 100%;
37      height: auto;
38  }
```

*Figure 4.16 CSS codes*

```php
<?php
session_start();
require_once('../controllers/functions.php');
require_once('../database/db.php');

notconnected();

if (!isset($_GET['order_item_id']) || empty($_GET['order_item_id'])) {
    echo '<script>alert("No order item ID provided.");</script>';
    echo '<script>window.location.href="../templates/userdashboard.php";</script>';    exit;
}

$order_item_id = $_GET['order_item_id'];

$delete_query = $db->prepare("DELETE FROM order_item_user WHERE order_item_id = ?");
$delete_query->execute([$order_item_id]);

echo '<script>alert("Order item deleted successfully.");</script>';
echo '<script>window.location.href="../templates/userdashboard.php";</script>';
exit;
?>
```

*Figure 4.17 Delete orders*

```php
<?php
$success = null;
$error = null;
require_once('../database/db.php');

if (isset($_POST['add'])) {
    $name = htmlspecialchars($_POST['name']);
    $role= htmlspecialchars($_POST['role']);
    $message = htmlspecialchars($_POST['message']);
    $filename = $_FILES["uploadfile"]["name"];
    $filesize = $_FILES["uploadfile"]["size"];
    $tempname = $_FILES["uploadfile"]["tmp_name"];
    $folder = "./profiles/" . $filename;
    $allowedExtensions = ['png', 'jpg', 'jpeg'];
    $pattern = '/\.(' . implode('|', $allowedExtensions) . ')$/i';

    if (empty($name)   || empty($role) || empty($message)) {
        $error = "Please complete all the fields";
    } elseif (empty($filename)) {
        $error = "Select a profile photo for this testimonial";
    } elseif (!preg_match($pattern, $_FILES['uploadfile']['name']) && !empty($_FILES['uploadfile']['name'])) {
        $error = "Votre fichier doit être au format \"jpg, jpeg ou png\"";
    } elseif ($filesize > 5000000) {
        $error = "Your photo cannot exceed 5MB";
    }else {
        // Check if a product already exists
        $existing_testimonial_query = $db->prepare("SELECT * FROM testimonials WHERE names =:names ");
        $existing_testimonial_query->execute(array('names' => $name));
        $existing_testimonial = $existing_testimonial_query->fetch(PDO::FETCH_ASSOC);

        if ($existing_testimonial) {
            $error = "This testimonial already exist";
        } else {
            // Insert into collection table
            $query = $db->prepare('INSERT INTO testimonials (names, job_title ,testimony,profile) VALUES (:names, :job_title ,:testimony,:profile)');
            $query->bindParam(':names', $name);
            $query->bindParam(':job_title', $role);
            $query->bindParam(':testimony', $message);
            $query->bindParam(':profile', $filename);
            if ($query->execute()) {
                // Move the uploaded file to the target folder
                if (move_uploaded_file($tempname, $folder)) {
                    $success = "Testimonial added successfully";
                } else {
                    $error = "Error while donwnloading images";
                }
            } else {
                $error = "Error while adding testimony";
            }
        }
    }
}
?>
```

*Figure 4.18 Add a testimonial*