BELMONT E-INVOICING SYSTEM : A CASE STUDY BELMONT ENTERPRISES

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DECLARATION

I, KAINZA NORAH VIOLA, declare that the content of this research report is my original work. To the best of my knowledge and belief, this work has never been submitted anywhere for any award. It is a testament to my dedication, effort, and commitment to contributing valuable insights to the academic community.

Signature: Date: 25th August, 2024

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APPROVAL

I hereby certify that this research, conducted by Kainza Viola, is an original work that has been thoroughly developed and reviewed under my supervision. It is now ready for submission to the Department of Computing, Technology, Engineering and Design for further consideration and academic evaluation.

Signature: …… Date: ……01/10/2024.....

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CHAPTER ONE

Introduction

Chapter One of this project talks about the background, problem statement, main objective and specific objective.

1.1 Background to the Study

Belmont enterprise deals in food and beverage including giving accommodation services to the people from far and near. Currently it issues its customers invoice through a commonly paper work Tax invoice which is hand written. This has brought about the delay of service to customer

and also questions on the legality of the document. The company also has a change in the quick management of their sales. Belmont enterprises needs an online E-invoice system that will give customers their invoices and also help the company in stock and sales management where by the system will show the total amount of money being received per day and also the items or goods and services that are more frequently used or favored by the customers. E-invoicing system will be used to record, issue, reduce costs associated with paper- based invoicing, reduce risk of duplicated data entry and errors.

1.2 Problem Statement

Belmont enterprises does not have an E-invoice system where by it issues tax paper- based invoices which makes cash flow management difficult. This has made customers wait for long and the possibilities of duplicated data entry and errors. The E-invoice will help to clear all queries associated with paper-based invoice and it will reduce or cut costs for the company.

1.3 Main Objective

The general objective was to develop an E-invoice system that will enable the company to trace sales and reduce the possibilities of duplicated data entry and errors associated by paper-based invoicing.

1.3.1 Specific Objectives

i. To create a system to increase efficiency and improved accuracy.

ii. To design a system to streamline the processes and payments.

iii. To build a system in order to better cash flow management.

iv. To increase visibility and transparency.

v. To implement the designed a E-invoicing System using various programming languages like PHP, MySQL, and JavaScript among others.

vi. To test and validate the System so as to check for any errors and to see whether it meets the user requirements.

1.4 Scope

The system designed and developed will be used by Belmont enterprises to reduce costs, also manage stock and sales management with in the company. Customers will receive their invoices with accuracy and transparency.

The system will basically interact with the account management system of Belmont enterprises.

1.5 Significance

The system will be used by the finance and accounts department to issue invoices to customers whereby they have been using a paper – based tax invoice to issue out to customers. The E-invoicing System offers the following advantages;

i. It will enable increased efficiency and improved accuracy
ii. The system enables customers to view and retrieve the invoice online.
iii. It will help in better cash flow management
iv. Reduced costs associated with paper-based invoicing.
v. Streamlined processing and payments
vi. Reduce risks of duplicated data entry and errors
vii. Competitive advantages through improved invoicing format and data integrity
viii. The system will increase visibility and transparency.

Chapter Two

Literature Review

2.0 Introduction

This chapter presented the background information to the study high lightening the objectives, scope and significance to the study. it's about the literature review of the Belmont E-invoicing system specifying what an E-invoice system is,

2.1 An E-invoicing System

An E-invoicing system is an electronic system that enables the creation, sending, and management of invoices between businesses and their customers or suppliers. It replaces traditional paper-based invoicing with digital invoices, stream ling the invoicing process and improving efficiency.

2.2 Types of E-invoicing Systems.

2.2.1 EDI-Based Systems

According to Pat, William Golden and Dennis Murphy in 1998 Electronic Data Interchange (EDI) systems are among the earliest forms of e-invoicing. They involve the structured exchange of data between businesses using standardized formats. EDI is highly automated and suitable for large enterprises with complex supply chains. EDI stands for electronic data interchange which is a standard electronic format that replaced paper-based documents such as purchases. The EDI system allows companies to send, transform and receive electronic data from one computer to another.

2.2.2 PDF-Based Systems

According to Jose Fernandes (2019), PDF-based e-invoicing systems generate invoices in PDF format and deliver them electronically. While they offer some automation, they may still require manual data entry for processing.PDF-based systems are easy to implement since they are widely used and easily accessible.

2.2.3 XML-Based Systems

According World wide web consortium version of September 29 2006 Extensible Markup Language (XML) is a common standard for structured data exchange. XML-based e-invoicing systems create invoices in XML format, which can be easily integrated into various software applications. the main purpose of XML is serialization, i.e. storing, transmitting, and reconstructing arbitrary data. For two disparate systems to exchange

information, they need to agree upon a file format. XML standardizes this process. It is therefore analogous to a lingua franca for representing information. As a markup language, XML labels, categorizes, and structurally organizes information.

2.2.4 Web-Based Portals

According to Erdem, A web portal, also known as online portal or internet portal, is an online platform that consolidates information from various sources into a cohesive user interface, providing users with relevant and personalized information, resources, and services. Unlike standard websites, web portals are designed to offer a more tailored experience. Web-based e-invoicing portals are hosted online and facilitate the exchange of invoices between businesses. Users can access and manage invoices through a web interface, making them accessible for small to medium-sized enterprises (SMEs).

2.2.5 Invoice Service Providers (ISPs)

According to Flip Stojanovic February 28 2024, wrote that Internet Service Providers (ISPs) are companies that provide individuals and organizations access to the internet and related services.

Some of the main services ISPs offer include internet access, web hosting, email services, domain registration, VPN, content delivery network (CDN), and network infrastructure services.

ISPs offer end-to-end e-invoicing solutions, managing the entire invoicing process for businesses. They handle invoice creation, transmission, validation, and archiving, often via a cloud-based platform.

2.2.6 Peppol Network

According to Dennis.N. Zachariasen 2024 it was developed by the open peppol Association in 2008 as a pilot project financed by the European commission. The objective is to enable simple, safe e-document exchange between public and private entities worldwide. The Pan-European Public Procurement On-Line (Peppol) network is a standardized e-invoicing infrastructure used across Europe. It enables businesses to exchange electronic invoices with government agencies and other organizations seamlessly.

2.2.7 Blockchain-Based Systems

Irishnasuri Narayanam and Seep Goel from India in 2020 wrote that Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. Some e-invoicing solutions leverage blockchain technology to enhance security and transparency in invoicing processes. Blockchain ensures the immutability of invoice data.

2.2.8 Mobile-Based E-Invoicing Apps

According to Lucas Brachet on2023 said that **Mobile invoicing software** refers to a type of software designed to help businesses create and send invoices using mobile devices such as smartphones or tablets.

According to Lucas Brachet on2023 With **mobile invoicing software**, you can create and send invoices for your business from anywhere, anytime, as long as you have access to an internet connection.

According to Lucas Brachet on2023 Whether you're a small business owner, freelancer, or service provider, using **mobile invoicing software** can help you stay organized and efficient anytime, anywhere.

According to Lucas Brachet on2023 Mobile apps offer businesses the convenience of creating, sending, and receiving e-invoices directly from smartphones and tablets. These apps are ideal for mobile and remote business operations.

2.2.9 Integrated Accounting Software

According to Judith Hurwitz integrated accounting software is a type of accounting system that combines various financial management functions into comprehensive package. Many accounting software packages now include built-in e-invoicing features, allowing businesses to generate e-invoices from within their accounting systems.

2.6 Related Systems

2.6 .1 ELECTRONIC FISCAL RECEIPTING AND INVOOCING SOLUTION (EFRIS)

According to Sharon Atamba 2021, all companies registered in **Uganda** must use the EFRIS platform to report electronically issued invoices and cash receipts to the URA. Under this system, organizations and companies operating in the Ugandan market must submit their electronic sales invoices to the URA, and the URA must approve the invoice before the company can transmit it to its client. The implementation of the EFRIS system aims to tackle tax evasion and the fraudulent practice of false invoices for fake purchases.

The documents to be sent electronically in JSON formats to the EFRIS platform are:

i. Invoices
ii. Credit and Debit Notes

iii. Goods Movement
iv. Inventories

2.6.2 How to send e-Invoices to the EFRIS?

There are several implementation models for connecting to the EFRIS platform and sending e-Invoices:

I. Manually through the URA Portal
II. Through an Integrated "System to System" connection
III. Through Electronic Fiscal Devices (EFD)
IV. Through a mobile app

2.6.3 How does the EFRIS platform work?

According to Sharon Atamba 2021 To start with, all companies registered in Uganda must first register with the EFRIS invoicing system through the tax authority's website. The first time the taxpayer enters the system, they must indicate whether they are using e-Invoicing or EFD. Once registered and verified as a system user, your account will be enabled, and you will be able to access EFRIS functions.

According to Sharon Atamba 2021, A certificate issued by a local certification authority must be requested to sign invoices.
In the "System to System" model, through a technology service provider such as EDICOM, the structured invoice in JSON format is generated automatically from the taxpayer's ERP information. The e-Document is sent to the EFRIS platform, which validates the invoice by including four mandatory fields:

Fiscal Document Number (FDN): Official invoice document number.

Invoice Identification Number (Invoice Id): Document Identifier.

Verification Code (Anti-fake Code): Invoice verification code

QRCode (QR Code): URA-issued code that identifies the invoice.

Finally, the invoice must be sent to the receiver with the data entered by the platform.

2.6.4 WEAKNESS OF THE EFRIS SYSTEM

I. According to Sharon Atamba 2021, It needs data or internet to be operated which is hard for remote people or even small business since it increases on costs.
II. Technical issues whereby the system is frequently downtime, errors and slow processing speeds.
III. High costs in implementing and maintain EFRIS compliant systems can be costly for businesses.
IV. Complexity that the system can be difficult to understand and use especially for small businesses and those with limited technical expertise.

V. Limited customer support since some users report difficulty in getting assistance from the URA or EFRIS support teams.
VI. As with any digital system, there is a high risk of cyber-attacks and data breaches.
VII. Limited offline capabilities in the system since it's not designed to function offline, making it difficult to use.
VIII. Some business struggle to comply with the systems requirements leading to penalties and fines which is totally unfair.

CONCLUSION: the EFRIS emphasizes its pivotal role in modernizing tax administration and compliance. EFRIS enhances transparency, accuracy, and efficiency in the issuance of fiscal receipts and invoices. By automating and digitalizing the process. EFRIS reduces the risk of tax evasion, ensures real-time tax data capture, and simplifies compliance for businesses. This system supports better revenue collection for governments and fosters a fairer tax environment, ultimately contributing to economic growth and stability.

2.6.2 M-INVOICING BY MTN UGANDA

According to Richard 2024, MTN Uganda launched m-invoicing service also known as MoMo or mobile money in 2009 in Uganda. The system allows users to create, send, and receive invoices electronically through their mobile phones. Here are some key features and benefits of MTN Uganda m-invoicing service

i) send and receive money, including salary and bill pavements
ii) bulk payment capability
iii) payment tracking and confirmation
iv) accessible and secure
v) reduces the need for cash transactions
vi) offers financial inclusion for merchants and consumers
vii) can be used for school fees, utility bills and other services.

2.6.2.1 HOW the M-invoicing by MTN Uganda works

According to Richard 2024, MTN Uganda's m-invoicing service operates through a straightforward process designed to facilitate easy and efficient invoicing and payments for businesses and here is how it works,

i) registration where businesses must first register for the m-invoicing service. This can typically be done through MTN Uganda's customer service centers, their website or via the mobile app. During registration, businesses will provide necessary details such as business name, contact information and mobile money account information.

ii) Creating invoices once registration is done businesses can log into the m-invoicing platform using their credentials. To create an invoice, businesses enter the details of the transaction, including the customers' information, description of goods or service provided, the amount due and the due date. The system generates a digital invoice with a unique invoice number.

iii) Sending invoices by sending generated invoices to customer electronically via SMS, email or other digital communication methods supported by the platform. Customers receive the invoice with a clear breakdown of the charges and payment instructions.

iv) Payment where by customers can pay the invoice using MTN Mobile Money. the invoice typically includes a payment link or instructions on how to complete the payment via their Mobile Money account. Once the payment is made, both the business and the customer receive a confirmation of the transaction.

v) Tracking and management in a way that business can truck the status of all sent invoices through the m-invoicing platform. They can see which invoices have been paid, which are pending and which are overdue. The platform also offers features for managing customer details and viewing transaction history, providing a comprehensive overview of the businesses invoicing activities.

vi) Integration with Accounting Systems for businesses using accounting software, the m-invoicing system may offer integration capabilities, allowing seamless synchronization of invoicing data with the business's accounting records.

2.6.2.2 Benefits/strength of m-invoicing

According to executive director (2009), the benefits or strength of m-invoicing are;

i) reduced administrative work by automating the invoicing process, reducing the need for manual entry and paperwork.

ii) Faster pavements with direct integration to Mobile Money, payments can be processed quickly and efficiently.

iii) Improved cash Flow by businesses can receive payments faster, improving cash flow and financial stability.

iv) Accessibility where by businesses can manage their invoices and payments from any location using a mobile device.

v) Security in transactions through Mobile Money are secure, reducing the risk of fraud and ensuring safe handling of pavements.

2.6.2.3 Weaknesses/problems of m-invoicing

According to executive director (2009), The weaknesses or problems of m-invoicing are;

i) Internet and network dependency in a way that the effectiveness of m-invoicing relies heavily on the availability of reliable internet and mobile network coverage.

ii) Digital literacy in some small business, owners might lack the necessary digital literacy to navigate and use the m-invoicing platform effectively.

iii) Security concerns through cyber security threats like scams and other fraudulent activities.

iv) Transaction costs that are too high which is a big concern for businesses, particularly those with high transaction volumes or low margins.

v) Technical issues

vi) Integration challenges where by integrating m-invoicing with existing accounting and business management systems can be complex.

vii) User support and training which is insufficient and it leads to frustration and reduced usage of the platform.

viii) Scalability issues where by larger businesses with more complex invoicing needs might find the platform insufficient for their requirements since its more beneficial to SMEs.

CONCLUSION: in conclusion the MTN DEW M-invoicing system underscores its significance in transforming traditional invoicing through mobile technology.by leveraging mobile platforms, MTN DEW's m-invoicing process, reduces the need for physical paperwork, and allows for real-time updates and tracking. This innovation not only improves operational efficiency but also supports better financial management and decision making, enabling business to thrive in a digital economy.

2.6.3 E-invoicing by Stanbic Bank Uganda

According to Muhammadi 2022 Stanbic Bank Uganda launched its E-invoicing system in November 2020. This initiative was part of the bank's efforts to digitize financial services and provide businesses with efficient tools to manage their invoicing and payments, particularly amid the challenges posed by the COVID-19 pandemic. This system aims to streamline financial

operations, enhance cash flow management, and support the broader digital transformation of businesses in Uganda. The system was introduced for the following reasons;

i. Digital invoice Creation and Management
ii. Payment integration
iii. Automated notifications and reminders
iv. Real-time tracking and reporting
v. Security and compliance
vi. Integration with Accounting systems.

2.6.3.1 Benefits/Strengths of E-invoicing by Stanbic Bank Uganda

According to Stanbic bank (2020), the strength of E-invoicing system is;

i. Improved efficiency of operations.
ii. Enhanced cash flow.
iii. Accuracy and reduced Errors.
iv. Convenience
v. Environment impact

2.6.3.2 Potential challenges of the E-invoicing system

According to Muhammadi 2022, These include;

i. Digital literacy where some business owners may face challenges if they are not familiar with digital tools, requiring additional training and support.
ii. Technical issues in a way that the dependence on reliable internet connectivity and potential technical glitches could impact the usability of the platform.
iii. Security Risks where by in most cases digital platforms are always vulnerable to cyber threats, necessitating vigilant security practices.
iv. Integration complexity where by the e-invoicing system maybe complex to other business and may require technical expertise.

v. Some customers may be reluctant to adopt digital payment methods, preferring traditional payment methods.

CONCLUSION: in conclusion of Stanbic Bank E-invoicing system highlights its role in streaming and automating the invoicing process for business. Key benefits include enhanced accuracy, by digitalizing invoicing, Stanbic bank's system minimizes manual errors and administrative overhead, ensuring timely payments and better financial tracking. This innovation ultimately supports businesses in achieving greater efficiency and productivity.

2.6.4 UMEME E-BILLING SYSTEM

According to Ashita Chopra 2020 The UMEME e-invoicing system also commonly known as the Umeme e- billing system was introduced in August 2020. The launched aimed to enhance billing efficiency, improve customer service and provide a more convenient way for customers to receive and pay their electricity bills. The move towards digital invoicing was part of Umeme's broader strategy to leverage technology for better service delivery and operational efficiency. How the system works;

i) Digital invoice generation
ii) Real-time billing information
iii) Multiple payment options
iv) Automated reminders
v) Integration with prepaid and postpaid systems
vi) Security and compliance

2.6.4.1 BENEFITS OF UMEME E-BILLING SYSTEM

i) convenient that it allows customers to receive and pay their bills electronically, reducing the need for physical visits to payment centers.

ii) efficiency that it automates the billing process, reducing administrative work and human errors.

ii) timely payments through automated reminders and multiple payments options that help ensure customers pay their bills on time.

iv) customers satisfaction by improving their experiences by providing easy access to billing information and convenient payment options.

vi) Environment impact by reducing paper usage, contributing to environmental sustainability.

2.6.4.2 POTENIAL WEAKNESS AND CHALLENGES

According to Ashita Chopra 2020 the following are the weaknesses;

i) Digital literacy in a way that some customers may face challenges if they are not familiar with using digital tools and platforms.

ii) Internet and network dependence since the system relies on internet and mobile connectivity which are essential for accessing and using the e-invoicing system.

iii) Security concerns as with any digital system, there are potential risks related to cybersecurity.

iv) Adoption rate where by encouraging all customers to switch from traditional billing methods to the e-invoicing system might take time amongst the older and less tech-savvy individuals.

CONCLUSION: the Umeme e-invoicing systems' success demonstrates the benefits of digital transformation in financial management, paving the way for future improvements and innovations.

2.6.5 VISION INVOICING SYSTEM

According to Steve (2024) a staff at the organization says World vision invoicing system is a digital platform that enables the organization to manage and process invoices, payments, and expenses related to their programs and project. The system is likely designed to streamline financial transactions, reduce errors and increase transparency and accountability.

According to Steve (2024) a staff at the organization says that system was built to help in the smooth running of business in the organization like creation of the invoice, payment processing and tracking, expense tracking and reporting, budgeting and integration of finances.

World vision is a global humanitarian organization that provides assistance to children, families, and communities in need. Their invoicing system is likely an internal tool used for managing and processing financial transactions related to their aid programs and projects.

2.6.5.1 BENEFITS OF VISION INVOICING SYSTEM

i. Streamlined financial management whereby the finance transactions are centralized making it easy to mange and track invoices, payments and expenses.
ii. Reduces manual errors, minimizes paperwork, and enables faster processing of invoices and payments.
iii. Provides a clear audit trail, ensuring accountability and transparency in financial transactions.
iv. Facilitates communication and collaboration between world vision staff, partners and vendors.
v. Ensures adherence to financial regulations and standards, reducing the risk of non-compliance.
vi. Offers reporting and analytics capabilities, enabling data-driven decision making.
vii. Supports world vision's global operations, handling multiple currencies and languages.
viii. Ensures the security and integrity of financial data, protecting against fraud and unauthorized access.
ix. Reduces costs associated with manual processing, paper work and potential errors.

2.6.5.2 POTENIAL WEAKNESS AND CHALLENGES

i. System downtime, errors, or bugs can hinder invoice processing and payment.
ii. Incorrect data entry or incorrect use of the system can lead to errors or delays.
iii. Cyber attacks or data branches can compromise financial data and confidentiality.
iv. The system is internet dependable in away that it need internet to function.
v. Managing large volumes of invoices and financial data can lead to system performance issues.
vi. Potential resistance from vendors or partners to adopt the new system.
vii. Inability to tailor the system to specific needs or adapt to changing requirements.

CONCLUSION: In conclusion world vision's invoicing system is a digital platform designed to streamline financial transactions, enhance transparency, and improve efficiency. While it offers numerous benefits, such as automated processes, improved collaboration, and data-driven

insights, it is not immune to potential weaknesses, including technical issues, user error, security risks, and customization limitations.

2.6.6 Uganda Christian University e-payment portal (UCU)

According to Jessica 2020 UCU has developed an e-payment portal to streamline the payment of tuition and other fees, making the process more convenient for students. Here are some key features and benefits of the UCU e-payment portal. Key features of the portal include;

Multiple Payment Methods:

- **Bank Transfers**: Students can transfer funds from their bank accounts to the university's bank account. The portal provides bank details and instructions for making these transfers.
- **Mobile Money**: Payments can be made using mobile money services such as MTN Mobile Money and Airtel Money. This is particularly convenient for students who may not have access to traditional banking services.
- **Credit/Debit Cards**: The portal supports payments via credit and debit cards, allowing for international transactions as well.

Online Access:

- The e-payment portal is accessible online, enabling students to make payments from anywhere at any time. This reduces the need for physical visits to the university's finance office.

Fee Statements:

- Students can log into the portal to view their fee statements and check their payment status. This transparency helps students keep track of their financial obligations and ensures that payments are correctly recorded.

Security: The portal is designed with security measures to protect students' financial information. Secure payment gateways and encryption protocols are used to safeguard transactions.

2.6.6 .1 Benefits of the UCU E-payment portal

Convenience:

- The e-payment portal offers a convenient way for students to pay their fees without needing to carry cash or visit the university in person. This is especially beneficial for international students or those living far from the campus.

Efficiency:

- By automating the payment process, the portal reduces the workload on university staff and minimizes the chances of errors in recording payments. This leads to a more efficient management of the university's finances.

Timeliness:

- The availability of multiple payment options ensures that students can make payments promptly, avoiding delays that could affect their registration or access to university services.

Transparency:

- The ability to view fee statements online promotes transparency, helping students understand their financial status and plan accordingly.

2.6.6.1 Challenges / weakness of the portal

- **System Downtime**: The e-payment portal may experience technical issues or downtime, making it temporarily unavailable for students to make payments. This can cause delays and inconvenience.
- Integration **Issues**: Integrating the portal with different banks, mobile money platforms, and card payment systems can be complex. Compatibility issues can arise, leading to failed transactions or delays in processing payments.
- The portal must be protected against cybersecurity threats such as hacking, phishing, and malware attacks. Ensuring robust security measures are in place is crucial to protect sensitive financial information.
- Some students may lack the necessary digital literacy to navigate and use the e-payment portal effectively. This can lead to errors in payment or an inability to complete transactions.
- **Accessibility**: Access to reliable internet connections and compatible devices is essential for using the portal. Students in remote or underserved areas may face difficulties accessing the system.

In conclusion, the Uganda Christian University (UCU) e-payment portal provides a valuable service by streamlining the payment of tuition and other fees through multiple convenient methods, including bank transfers, mobile money, and credit/debit cards. This system offers numerous benefits such as increased convenience, efficiency, timeliness, and transparency for students.

2.7 Comparison of related systems

Table 1: Comparisons for the Related Systems

Systems	Strengths	Weaknesses	Technology
EFRIS	Enhanced efficiency Cost saving Real time transaction tracking Compliance and transparency	Technical issues Limited customer support Limited offline capabilities. Cyber attacks Internet leaning	Web-based
M-INVOICING BY MTN UGANDA	Reduced administrative work Transfer payment Improved cash flow Accessibility	Internet & network dependency Digital literacy Transaction costs Integration challenge	Web-based.
E-INVOICING BY STANBIC BANK UGANDA	Enhanced cash flow Accuracy & reduced errors Convenience Environment protection by not using papers	Reluctance by customers Integration complexity Security risks	Web-based.

UMEME E-BILLING SYSTEM	Efficiency Timely payment Customer satisfaction	High maintenance costs. Only trained personnel. High budgeting costs.	Web-based.

2.8 Conclusion

This chapter mainly described the literature review of the related E-invoicing systems where we gathered information about other related systems, how they function and the enhancements needed in order to improve the current Belmont e-invoicing system. Most importantly to note is that most of the systems have a generally challenge of internet and network dependency.

Chapter Three

Research Methodology

2.0 Introduction

This chapter outlines the research methodology employed in this study, detailing the processes and techniques used to gather, analyze, and interpret data. The primary objective of this chapter is to provide a clear and comprehensive description of the methods applied to achieve the research objectives and answer the research questions. The research methodology is designed to ensure the reliability, validity, and rigor of the study, providing a systematic approach to data collection and analysis.

3.1 System Study and Analysis

In this project fact finding techniques were used in order to determine the system and user requirements This chapter focuses on the system study and analysis of the e-invoicing system, providing a detailed examination of the current systems, identifying the requirements for the new system, and evaluating potential solutions. The goal is to ensure that the new e-invoicing system is efficient, reliable, and meets the needs of all stakeholders. This chapter will cover the existing system analysis, requirements gathering, feasibility study, and system evaluation. This greatly determined what the system was expected to do. They included:

Existing System Evaluation

- Performance Issues: Evaluating the performance bottlenecks in the current system, such as delays in invoice processing and payment reconciliation.
- User Feedback: Gathering feedback from users of the current system to understand pain points and areas needing improvement.

Requirements Gathering

1. Stakeholder Analysis

- Identifying Stakeholders: Key stakeholders include finance departments, accountants, vendors, customers, and IT personnel.
- Stakeholder Needs: Understanding the specific needs and expectations of each stakeholder group.

Feasibility Study

1. Technical Feasibility

- Technology Stack: Assessing the technologies required for developing the e-invoicing system, such as programming languages, databases, and frameworks.
- Integration: Evaluating how well the new system can integrate with existing systems and third-party services.

2. Operational Feasibility

- Workflow Integration: Analyzing how the new system will fit into current workflows and processes.
- User Training: Planning for training programs to ensure users can effectively utilize the new system.

3. Economic Feasibility

- Cost-Benefit Analysis: Estimating the costs of developing and maintaining the system versus the expected benefits, such as reduced processing times and error rates.

3.2 Data collection techniques

3.2.1 Interview

Interviews were conducted on the manager, Accounts department, Front office and the customers to identify specific functional and non-functional requirements to determine requirements specifications. The interviews were physically done where the interviewer had a face-to-face interaction with the people involved. This helped to understand the depth of the whole situation and also to dig deep into nonspecific questions. The interviews rather more help to understand the authentication of the answers given basing on the body postures and analyzing the interviewees co-ordination. It helps to understand the problems, strength, information flow and processing of the current system.

3.2.2 Observation

In this research method we went to the ground and saw the activities physically with our eyes, activities like filling of recording of the services rendered to the clients, the manual paper-based invoices on how they are written or recorded then used pen and paper to note down what they had observed.

3.2.3 Reviewing existing documents

The Research was carried out to find out more information about the existing invoicing methods Belmont hotel has been using and how they have been issuing invoices out to their clients. Furthermore, we looked into the documents which were tax invoices and other necessary information that was useful.

3.2.4 Questionnaires

Questions were made and given to respondents as a way of acquiring information about the need for a system and how to go about it. The technique of using questionnaires was also used by the researchers to get information from the users of the system at Belmont Enterprises Ltd. The questionnaires were submitted to some of the staffs and customers in order to gain statistical information. The researchers were able to know the problem at hand in relation to e-invoicing system, which one was more challenging, after getting the feedback from the respondents. Therefore, the researchers were able to know that the system to be developed had to cater for efficiency and effectiveness. The questionnaire that was used is attached to appendix II.

3.3 Data Analysis Methods

We used the available data from the available resources like books, excel spread sheet that were used to capture data from their observations like taking note of the invoices written in the past years. Level of delay of payment due to delayed invoices and also the convenience of the method used to serve clients their invoices.

3.4 System Analysis and Design

The system analysis and design methodology were to emphasize the importance of each step in developing an effective e-invoicing system. By doing so it looked into the user case analysis, system architecture, user interface design, user experience, database, workflow diagram, development tools, testing strategies, validation and implementation plan. This will help to clearly demonstrate the processes of data transfer in the system as well as the relationship among entities in the system respectively.

3.4.1 System Analysis

Systems analysis is the process of identifying and summarizing data with the intent to extract useful information and develop conclusions. In system analysis requirements were determined. The requirements included functional and non-functional base on the system study.

Functional

The following are the functional requirements for the E-invoicing system;

Functional Requirements

- Invoice Creation: Ability to create and customize invoices quickly.
- Payment Processing: Integration with multiple payment gateways for seamless transactions.
- Invoice Tracking: Real-time tracking of invoice status and payment history.
- Reporting and Analytics: Generating detailed reports on invoicing activities and financial performance.
- Notification System: Automated alerts for due dates, payment confirmations, and other important events.

Non functional

The following are the non-functional requirements for the E-invoicing system;

Non-Functional Requirements

- Scalability: System must handle increasing volumes of invoices and users.
- Security: Robust security measures to protect sensitive financial data.
- Usability: User-friendly interface for ease of use by all stakeholders.
- Reliability: High availability and minimal downtime.

3.4.2 System Design

Designing an e-invoicing system involves creating a robust architecture that integrates seamlessly with existing business processes. The system should feature a user-friendly interface for invoice creation, submission, and tracking, supported by backend functionalities for data validation, integration with ERP and accounting systems, and secure storage. Key aspects include ensuring compliance with regulatory standards, implementing stringent security measures, and optimizing performance for scalability. By focusing on these elements, organizations can streamline invoicing processes, enhance financial transparency, and improve overall operational efficiency.

i. **Process Modeling**: This was achieved by use of Data Flow Diagrams to show processes and external entities in the system and the end product was a detailed description of processes involved (process models). The information used in building the Data Flow Diagram was obtained from the Data Dictionary.

ii. **Data Modeling:** This was achieved using Entity-Relationship Diagrams to show the data requirements and model. This yielded the structure of relations in the relational schema (database).

iii. **Scalability and performance:** this was achieved through data balancing, caching, auto-scaling.

iv. **Workflow:** this was achieved through user registration and setup, invoice creatin invoice submission and distribution and payment.

3.5 System Implementation

System implementation involves the tangible realization of the e-invoicing system's design through the deployment of both the database and application components. This phase includes translating the design specifications into actual databases using the Data Definition Language (DDL) of the chosen Database Management System (DBMS). The DDL commands define the structure and organization of the database, ensuring data integrity and efficiency. Simultaneously, application programs are developed and integrated to facilitate functionalities such as invoice creation, submission, validation, tracking, and reporting. Successful implementation hinges on meticulous execution of the design, adherence to technical standards, and rigorous testing to ensure seamless operation and alignment with business requirements.

3.5.1 Implementation Tools

In the implementation stage, the following tools were used; WAMP/Apache server, MySQL, JavaScript, Notepad++, Windows operating system. (As the development environment).

3.5.1.1 WampServer

WampServer is a free server bundle that uses Apache server. When installed on the system, it includes Apache, MySQL, and PHP. Apache is a popular web server that many ISPs and individuals use to host web pages. We installed Apache on our system as a web server. Pages were stored in the system's special folder which was accessible on the network via the machine's IP address. In order for pages to be viewed on the Internet, the files were stored in the www directory.

3.5.1.2 MySQL

MySQL is an open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL), the most popular language for adding, accessing, and processing data in a database. Because it is open source, anyone can download MySQL and tailor it to their needs in accordance with general public license. MySQL is noted mainly for its speed, reliability, and flexibility. We used MySQL because it is designed as a multi-tasking/ multi-user database, which is one of the main requirements for a database.

3.5.1.4 HTML

HTML, referring to Hypertext Markup Language, is the predominant markup language for web pages. It provides a means to describe the structure of text-based information in a document by denoting certain text as links, headings, paragraphs, and lists, among others and to supplement that text with interactive forms, embedded images and other objects. HTML is written in the form of tags, surrounded by angle brackets. HTML can also describe, to some degree, the appearance and semantics of a document, and include embedded scripting language code which can affect the behavior of Web browsers and other HTML processor. We used Notepad++ environment to construct both HTML and PHP pages that served on the content management system.

3.6 System Testing and Validation

3.6.1 Testing

Testing is the process of executing application programs with the intent of finding errors and observing if it behaved as expected. The faults were corrected and the process was repeated until the system was proven to be working according to users' specification and performance requirements. This was achieved by;

I. Unit testing of the scope, tools like java and python
II. Integration testing by ensuring if the combined components work together.
III. System testing by ensuring that the system meets all functional requirements.
IV. Acceptance testing by validating if the system supports all specific use cases, user interface and user experience.
V. Performance testing by evaluating the system behavior and identifying bottlenecks and optimize performance.
VI. Usability testing by conducting user surveys and feedback sessions. Observe user interacting with the system to identify usability issues.
VII. Testing for security issues like resistance to remote attacks and authentication procedures.

3.6.2 Validation

Validation was done to check whether the E-invoicing System meets the identified user, functional and nonfunctional requirements. Validation was done by providing the system to end user representatives who tried out the system so as to verify that it meets the intended user requirements. System Evaluation

1. Evaluation Criteria

- Performance: Speed and efficiency of the system in processing invoices.
- Accuracy: Precision in generating and managing invoices.
- User Satisfaction: Feedback from users regarding ease of use and satisfaction with the system.
- Security: Effectiveness of security measures in protecting data.

3.6.3 Conclusion

In summary, this chapter described the methodologies that were used for the different patterns of research, approaches to data collection, techniques for analysis and tools that were used for designing and implementation of the system.

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Chapter Four

System Study, Analysis and Design

This chapter concerns the study of the existing system, analysis of the requirements for the system, process and data modeling.

4.1 The study of the Existing System

From the data gathered about the existing E-invoice Systems through interviews, observation and review of existing documents (documentation review), researchers found out that customers had to wait for a paper-based invoice or receipt that would take time before they could receive them. initially the hotel didn't have a running system in place to carry out the procedures. this has given more reasons as to why the E-invoice system is truly needed in place to improve on the service delivery and income profits.

4.1.1 Workflow for the E-invoice system

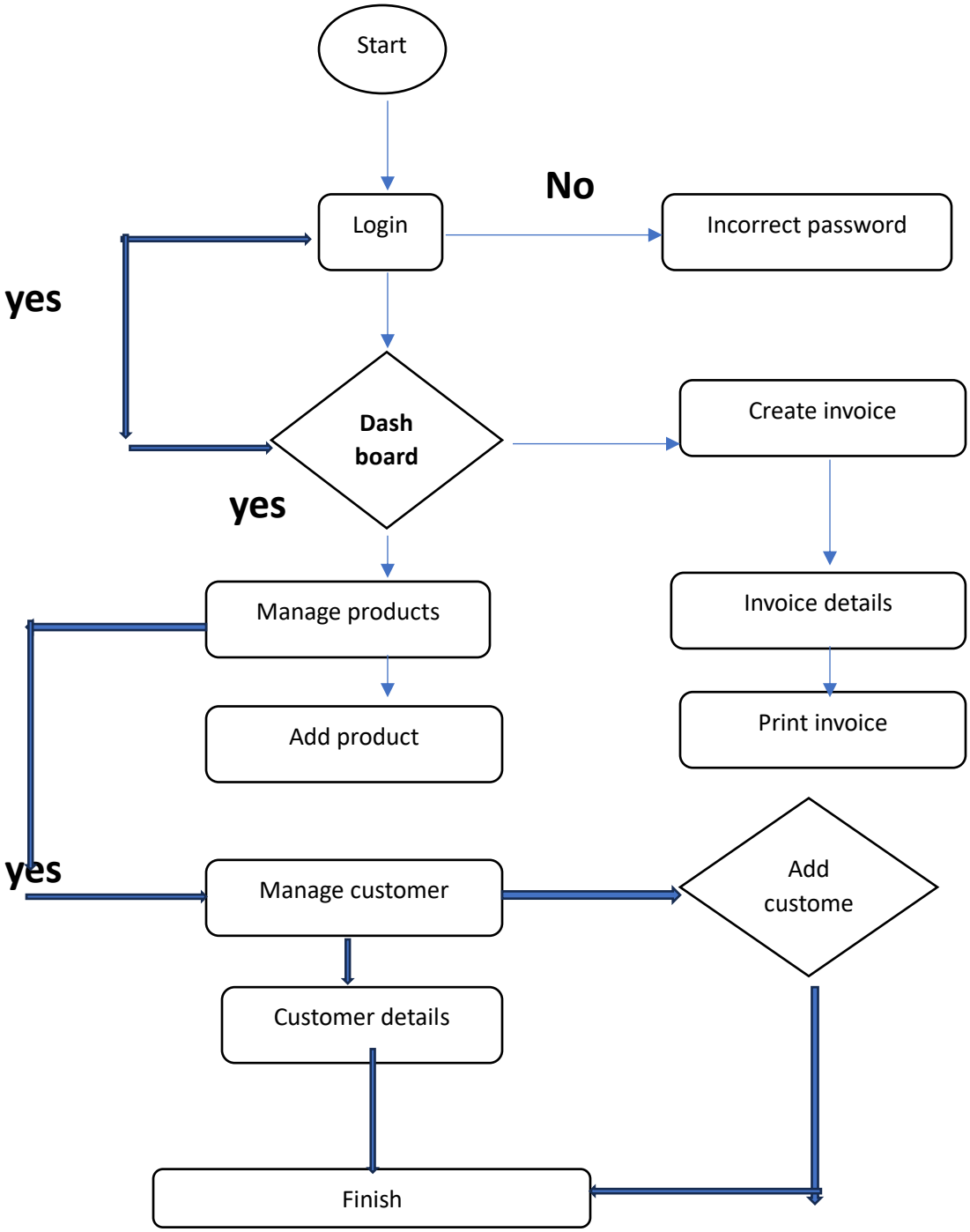


Figure 4. 1: Flow chart for the E-invoice management system.

4.1.2 Strength of the existing System

i. It is able to generate statements of accounts and receipts
ii. The existing system is for URA
iii. They use it to generate invoices for organizations.

4.1.3 Weakness of existing System

i. The existing system lacks instant verification and validation of customer details.
ii. Has delays in making transactions.
iii. It can only operate while on-line.

4.2 Data analysis results

Different data collection techniques were used by the researchers to collect data that was analyzed in order to obtain accurate information and generate reports. The researchers were able to find out the different challenges that are associated with the current E-invoice system.

The major challenges faced with the current that customers had to wait for a paper-based invoice or receipt that would take time before they could receive them. The analyzed data was represented in tables and graphs to give more meaning and easy interpretation. The example of an analysis on the challenges associated with the current system is shown in Table 1.

4.2.1 The tabular representation of the challenges associated with the current E-invoice system

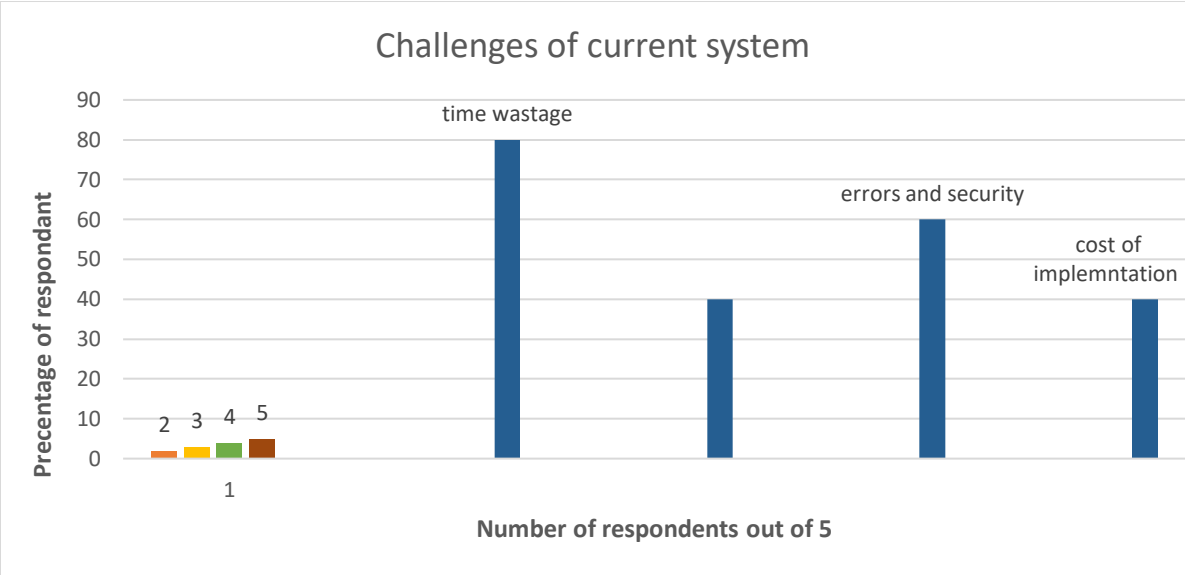
Table 1: Challenges associated with the current system.

Challenges	Number of respondents out of 5	Percentage of respondents
Time wastage	3	80
User adoption and training		

	2	40
Errors and system security	3	60
Cost of implementation	2	40

4.2.2 The Graphical Representation of the Challenges faced by the current E-inoice system.

Figure 4. 2: A graphical presentation of the challenges faced by the current E-invoice system.



4.2.1 User Requirements

These are statements, in a natural language, of what services the system is expected to provide and the constraints under which it must operate. Below are the user requirements for the system;

i. The system should produce receipts.

ii. The system should generate invoice.

iii. The system should be easy to use.

iv. The system should authenticate users.

v. The system should manage customer information.

vi. The system should be fast.

4.2.2 Functional requirements

A Functional requirement is a description of activities and services that the E-invoice System provides in terms of proceeding and data handling. So according to the tools used to collect data from the users, the following functional requirements were met;

i. The system should generate invoices for customers.

ii. The system should store and retrieve information about customers.

iii. The system should enable customers to view their account details online.

iv. The system should add new products in the system.

v. The system should add new customers.

4.2.3 Non-functional requirements

A non-functional requirement is description of other features, characteristics and constraints that define the satisfactory of the system therefore it describes how the E-invoice System was to perform. Some of these requirements which were considered during the design of the system include;

i. The user should be able to access the system at any time of the day.

ii. The system should authenticate users through username and password.

iii. The system should provide fast processing to all user requests.

iv. The system should be flexible, and easy to update.

v. The system should process user's tasks as fast as possible.

vi. The system should be reliable.

4.2.4 System requirement

The system requirement includes requirements that are needed to include certain functionality in the system. It involved describing the system and the properties in that system. They include the hardware and software requirements as follows;

4.2.4.1 Hardware Requirements

Table 2: Hardware requirements

Hardware component	**System requirement**	**Justification**
Processor	Intel Pentium IV or above	Pentium IV has the new technology (Hyper Threading) and the number of pins as well as cache memory has been increased.
Processor speed	800MHZ or above	This has enough speed, or clock rate to run the online financial transfer Management System.
Disk space	80 GB or above	This is enough disk space or storage size for the data stored in the database of the online financial transfer Management System.

4.2.4.2 Software Requirements

Table 3: Software requirements

Software Component	**System Requirement**	**Justification**
Operating System for the server	Windows NT or above	Windows NT adopts a new layered device-driver architecture that provides many advantages in terms of flexibility, maintainability, and portability.
Operating system for the client PC	Windows XP	Windows XP can be used on personal computers, including home and business desktops, laptops and media centers.
Web Browser	Opera Mobile Emulator	It is the default browser shipped with Windows XP and is also made available for Windows NT 4.0.
Database Management System	MySQL server version 3:23.48	MySQL is an open source relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases.

4.3 System Design

In the system design phase, process modeling involved use of Data Flow Diagrams (DFD), and Data modeling involved use of Entity Relationship Diagrams (ERD).

4.3.1 Architectural Design for the System

The architectural design shows how the E-INVOICE system is comprised of the different subsystems namely Data collection, Data Processing, Data Storage and Data Display. The figure below shows an architectural diagram of the an invoice System.

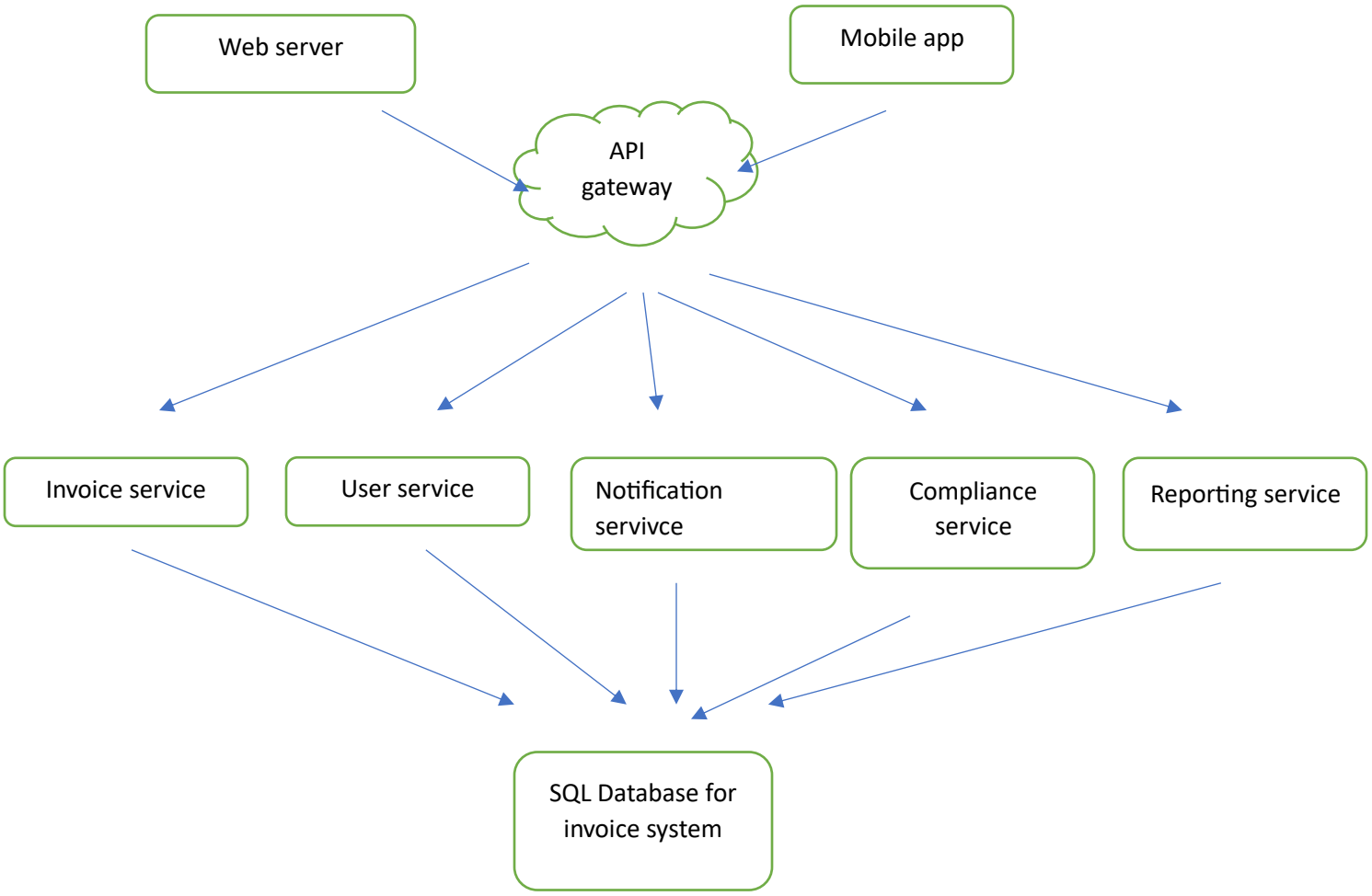


Figure 4. 3: The Architectural Design for an e-invoice system

4.3.2 Process Modeling

These show how information or data will be moving around the financial Management System from the entry to various repositories or data stores.

4.3.2.1 Key Symbols

Symbol	Name
	External entity
	Data flow
	Data store

Description of the above key symbols;

i. An Entity is a real life object with an independent existence that interacts with the system.
ii. Data store shows where data is stored after being processed. This can be a database or a file.
iii. Data flow shows the movement of data within the system and also connects processes, data stores and external entities.

4.3.3 Data Flow Diagrams (DFD).

It is one of the most important modeling tools used by system analysts. It is used to illustrate how data flows in a system. DFD's use a number of symbols to represent systems. There are four kinds of symbols. These are used to represent four kinds of system components. Processes, data stores, data flows and external entities.

4.3.3.1 The Context Level DFD

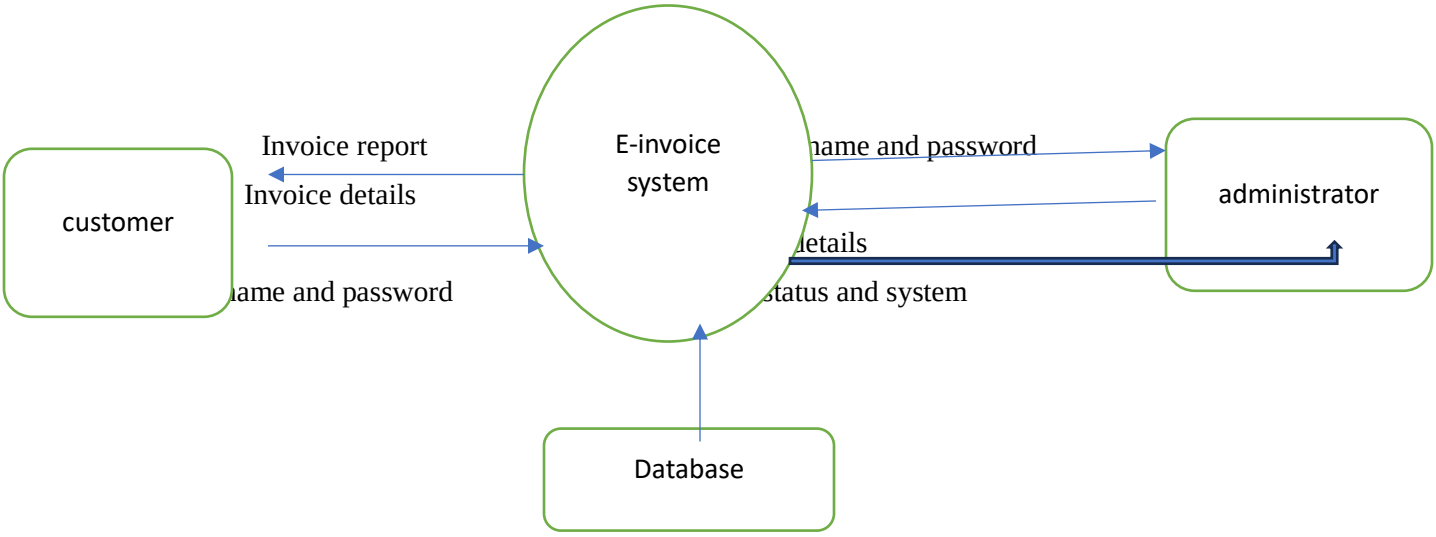
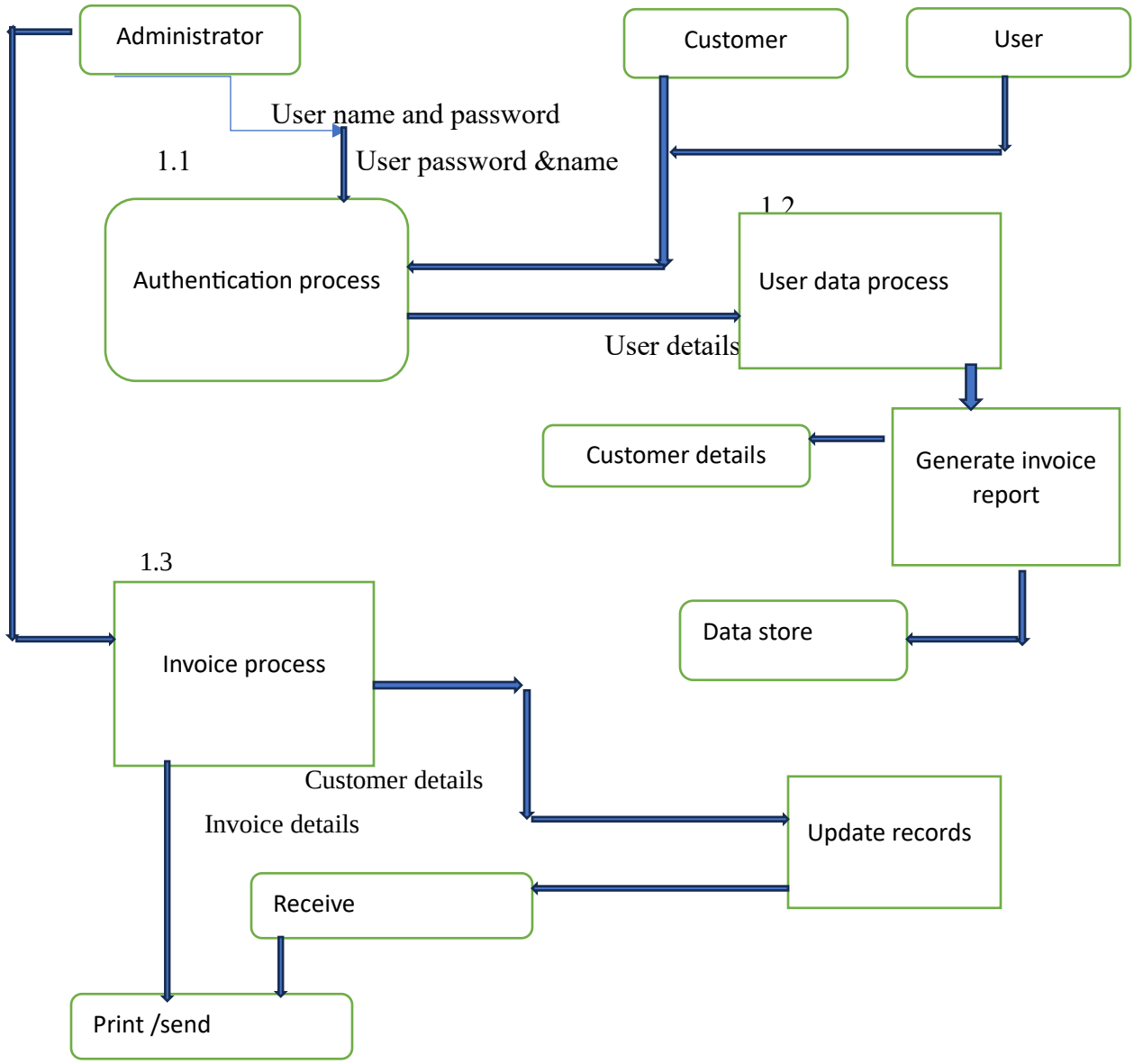


Figure 4. 4: Context Diagram for the e-invoice system.

In figure 4.3: user logs into the E-invoice system and when user is authenticated, can requests for resources and the feedback is then sent to the user. The administrator also logs into the system and when authenticated can query for data and receives immediate feedback.

4.3.3.2 The Level 1 DFD for the E-invoice management system



level 1 DFD for the E-invoice management system.

Description for the level 1 DFD

In this subsection, there are tables describing all the design objects used in developing the system. They include Processes, Data flows, Data stores and the External entities.

Description for Processes

Table 4: Description of Processes

Process	Description
Authentication Process	Verification of username and passwords of users
User data Process	Capture all user details
Invoice process	Captures all invoice details

Description of Data Stores

Table 5: Description for Data stores

Data store	Description
User Data	Stores user's passwords and usernames
Customer Data Store	Stores customer details
Invoice Processing	Stores invoice details or records

Description for External Entities

Table 6: Description of External Entities

Entity	Description
User	Feeds new customer and invoice details into the system
Customer	Performs system transactions
Administrator	Monitors and manages the system
Invoice	Contains invoice details

4.3.4 Identification of Entities and their Attributes

Table 7: Identification for Entities and their Attributes

Entity	**Description**	**Attributes**
Customer	A Customer is a person that has an account with bank	customer_id Surname other_name Telephone E-mail location sex type ID
Invoice	Provides service offered to the customer	Invoice date Supplier address Supplier name Tax amount Payment amount Invoice number Customer id Customer name Customer address

Product	Provides items to the customer	Id Type Description Unit Cost Price item
Invoice item	Provides details of the invoice	Id Invoice number Quantity Description Price Tax Customer name Customer address Invoice status
Admin/user	An admin/user is a person (receptionist) who attends to customers in the hotel.	User _id F name L name Invoice number email address

4.3.5 Modeling Relationships between Entities

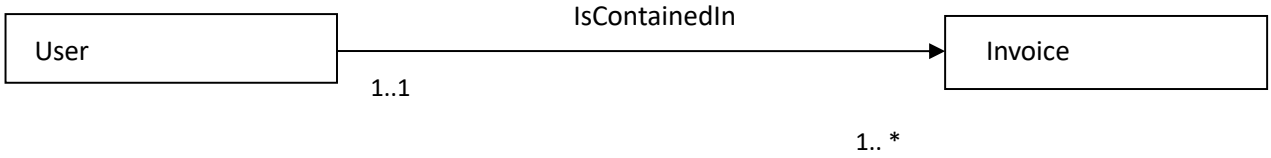


Figure 4. 5: Relationship between user and invoice

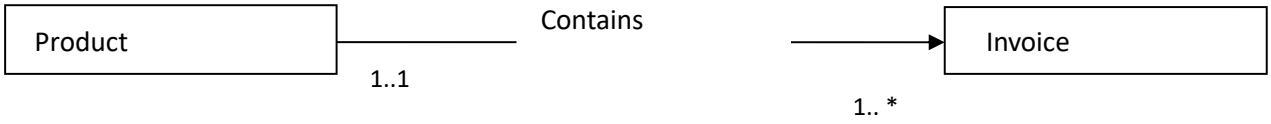


Figure 4. 6: Relationship between product and Invoice.

A product contains one or more items and one item can be entered in the invoices per entry.

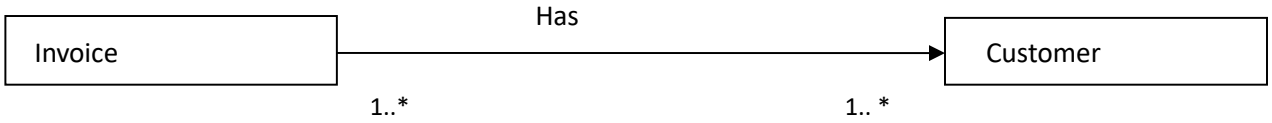


Figure 4. 7: Relationship between invoice and Customer

An invoice can have one customer and a customer can belong to one invoice.

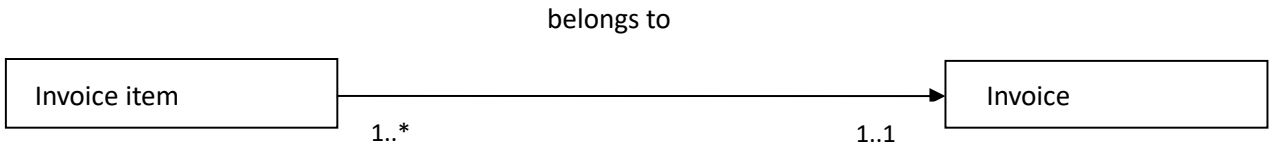


Figure 4. 8: Relationship between invoice item and invoice.

An invoice item can be in one or invoices that are being issued.

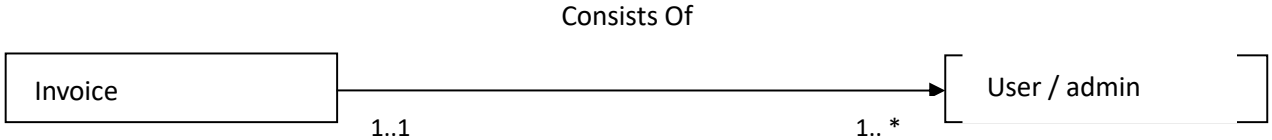
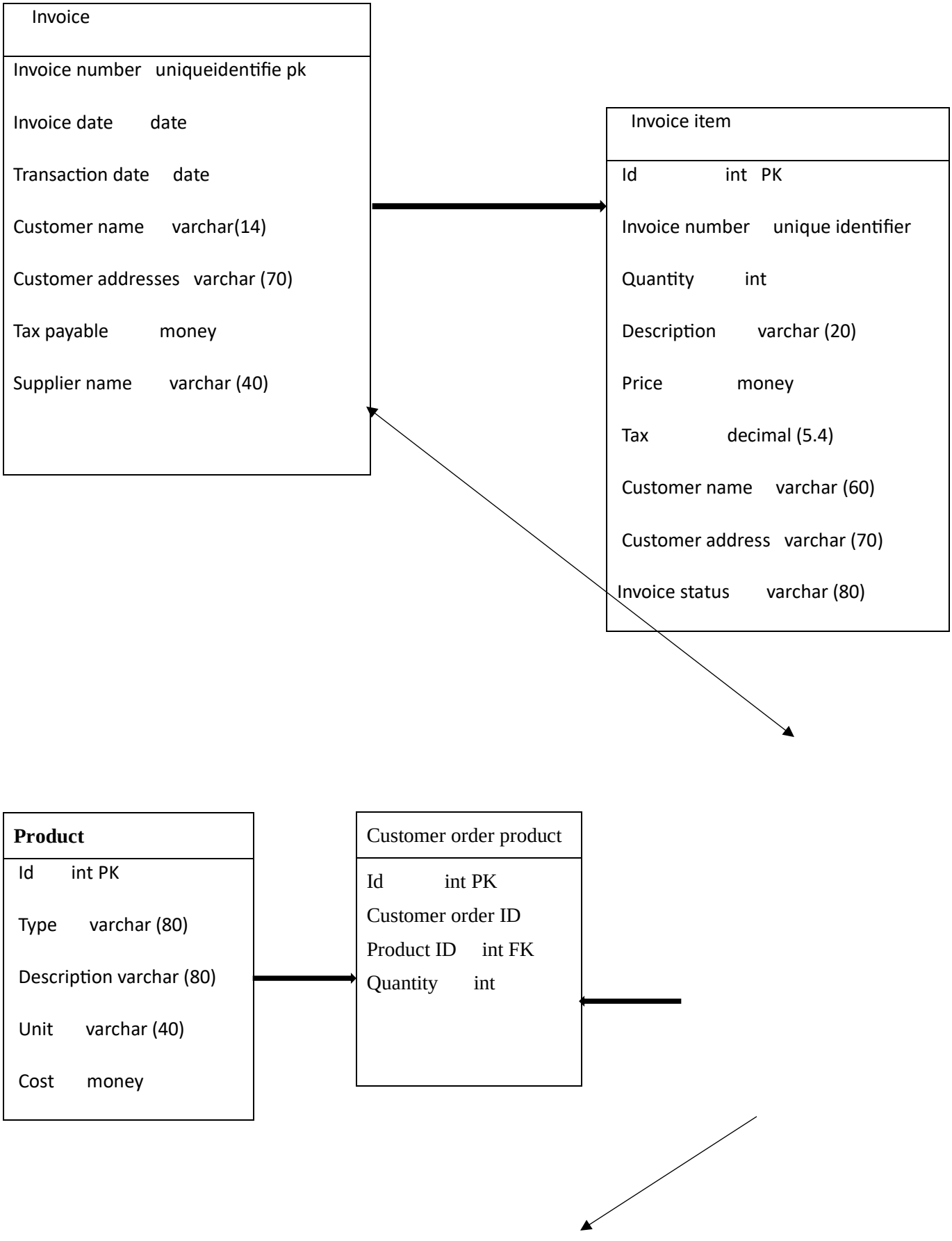
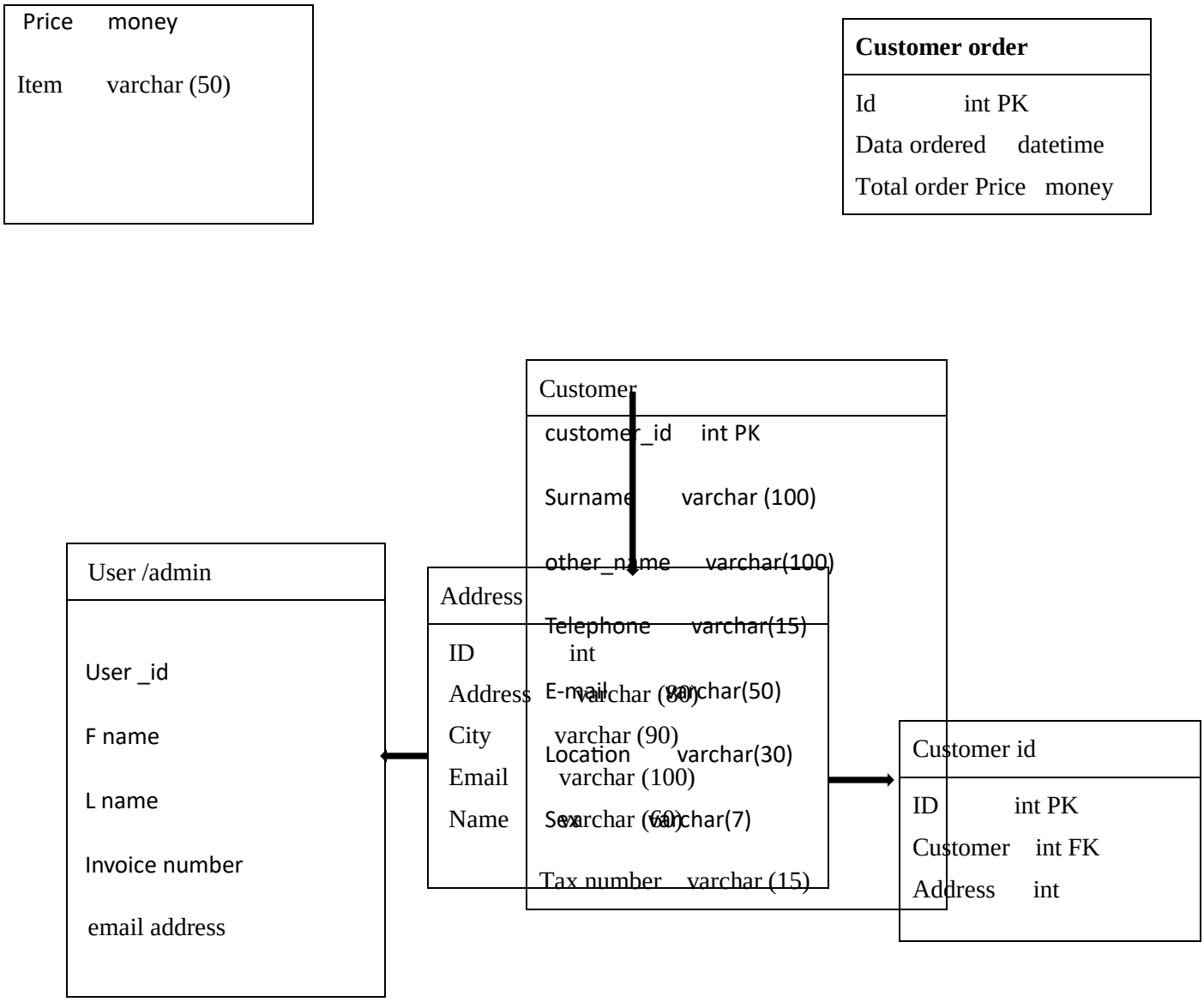


Figure 4. 9: Relationship between invoice and user/ admin

An invoice consists of one or more user/ admin details.

4.3.6 The Entity Relationship Diagram





4.3.7 Mapping of ERD to Relational Schema

4.3.7.1 Customer

Table 8: The Customer table

Field Name	Data Type	Constraint
customerID	int(12)	Primary Key, Not null

Surname	varchar(100)	Not null
Other name	varchar(100)	Not null
Telephone	int(15)	Not null
Email	varchar(50)	Not null
Location	varchar(30)	Not null
Sex	varchar(7)	Null
Nationality	varchar(20)	Not null
Age	int(100)	Null
Tax number	Int(15)	Foreign Key, Not null

4.3.7.2 invoice item

Table 9: The invoice item table

Field Name	**Data Type**	**Constraint**
ID	int(16)	Primary Key, Not null
Invoice number	Unique identifier	Not null
Quantity	Int(12)	Not null
Price	money	Not null
Description	varchar(20)	Not null
Tax	decimal	Not null
Customer address	varchar	Not null
Invoice status	varchar	Not null
Customer name	Varchar(30)	Not null

4.3.7.3 invoice

Table 10: The invoice table

Field Name	**Data Type**	**Constraint**
Invoice number	Unique identifier	Primary Key, Not null
Invoice date	varchar(20)	Not null
Transaction date	varchar(20)	Not null
Customer name	Varchar(14)	Not null
Customer address	varchar	Not null
Invoice ID	Int(16)	Foreign Key, Not null

4.3.7.4 product

Table 11: The product table

Field Name	Data Type	Constraint
Id	int(16)	Primary Key, Not null
Type	varchar(20)	Not null
Description	varchar(80)	Foreign Key, Not null
Unit	Varchar (40)	Not null
Cost	Int(80)	Not null
Price	Int(80)	Not null
Item	Varchar (50)	Foreign Key, Not null

4.3.7.5 user

Table 12: The user table

Field Name	Data Type	Constraint
User ID	int(16)	Primary Key, Not null
F Name	varchar(20)	Not null
L name	int(12)	Not null
Invoice number	Int(16)	Foreign Key, Not null
Email address	Int(16)	Foreign Key, Not null

4.3.7.6 Employee

Table 13: The Employee table

Field Name	Data Type	Constraint
employeeID	int(16)	Primary Key, Not null
Fname	varchar(20)	Not null
Lname	varchar(20)	Not null
Telephone	int(12)	Not null
Email	varchar(30)	Not null
bankID	Int(16)	Foreign Key, Not null
departmentID	Int(16)	Foreign Key, Not null

4.4 Conclusion

In summary, this chapter was mainly based on the study of the existing system, analysis of the requirements for the system, processes and data modeling.

Chapter Five

System Implementation, Testing and Validation

This section describes the implementation of the design models in of the system and also shows the different results generated by the system. Therefore, screen shots of the system will be displayed to show how the system displays results given a command.

5.1 System Functions

The E-INVOICE System provides the administrator with the rights such as managing user accounts, verifying the customer's deposits and analyzing the entire system processes by the system administrator/manager. The employees are able to receive and enter customer's cash details onto the system. The customers also if given the chance can to view their payment and invoice details.

5.1.1 Functions provided to all users.

The E-invoice System allows for authentication of users and security by prompting for their user names and Passwords if they are to access the system services.

5.1.2 Functions provided to the customers

The customers when authenticated are able to view the details of their invoices and payments especially when they are due and the amount of the service that was rendered.

5.1.3 Functions provided to the employee/reception.

The users are able to interact with the system after they have logged in the system, they can receive and enter details of all customers involved in receiving services. The users are also able to view the invoice status in the system.

5.2 System map

Figure 5.1: System Map showing functions provided by the system to each user

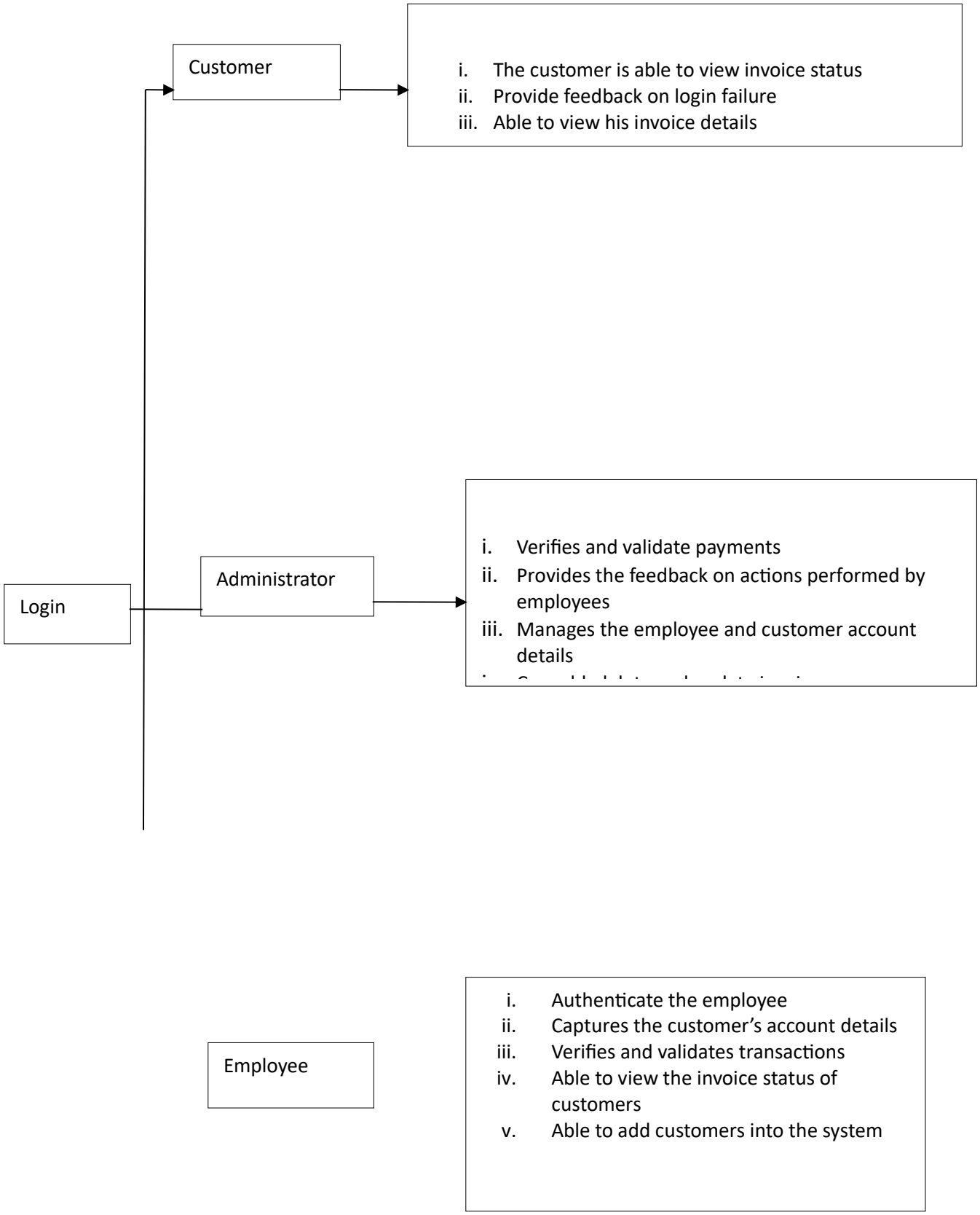


Figure 5. 1: System Map

5.3 Sample Screen-shots

5.3.1 System home page

Figure 5.2 Shows the homepage that allows all user to login into the system in order to

access their pages and perform their tasks. On selecting the login option especially by the administrator, login page for the administrator will be displayed as shown on the screenshot below.

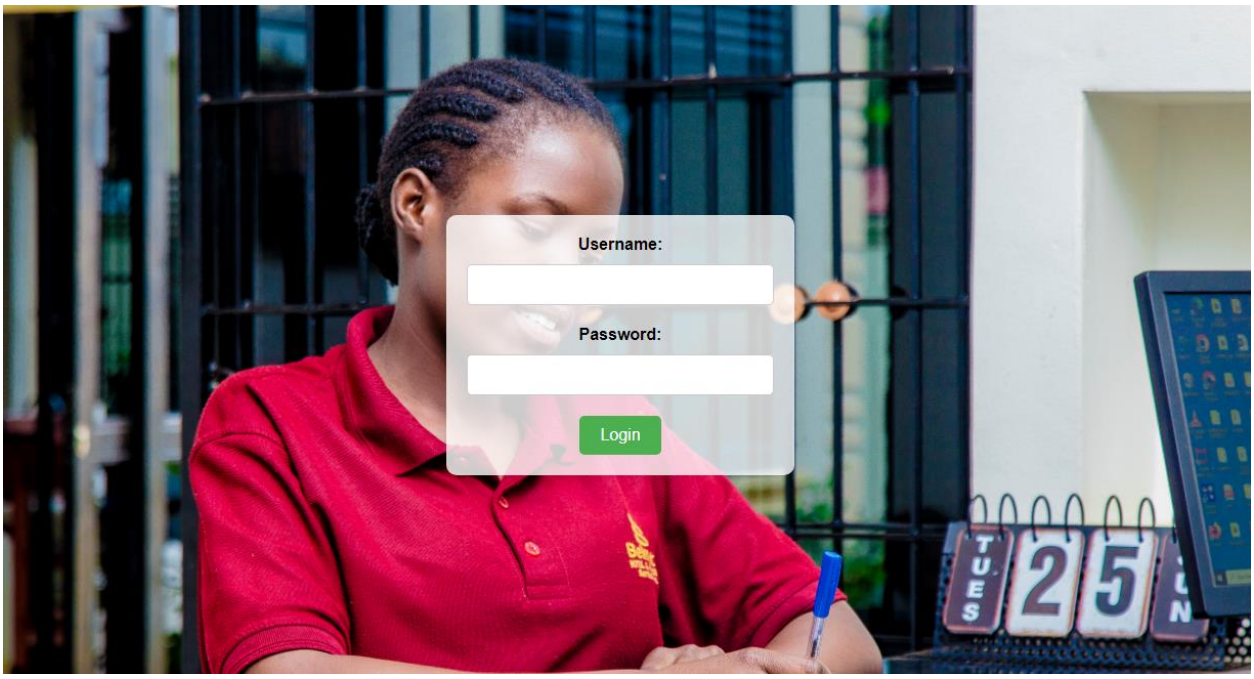


Figure 5. 2: System home page

5.3.2 Administrator's login page

Figure 5.3: Shows the administrator's login page where he or she logs in and fills in his or her password to login into the system. This gives an administrator access to view the following: , user accounts, password setting, mini-statements, among others. Also, in case of wrong username and password, the user will be denied access to the system.

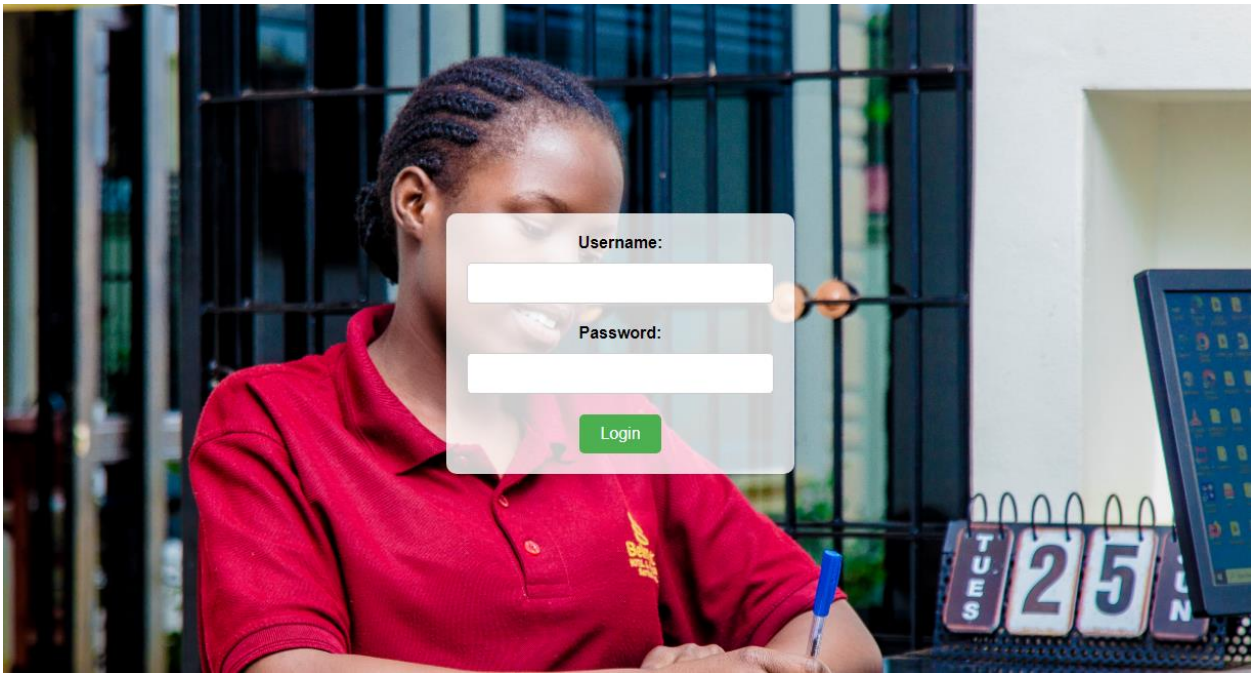


Figure 5. 3: Administrator login page

5.3.3 Administrative view page

Figure 5.4: Shows the administrator fully logged in where he can perform all duties assigned to him through navigating the dashboard option. He can create invoices, view different invoice types, manage products and verify and validate all invoices

of the customers.

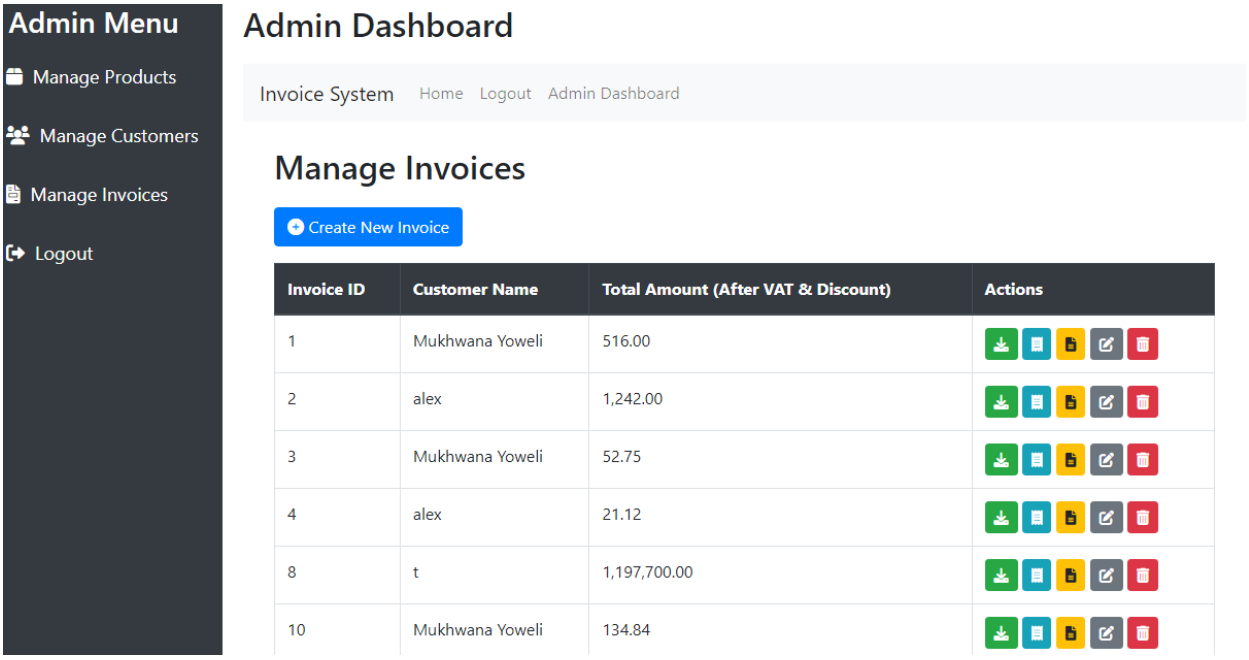


Figure 5. 4: Administrative view page

5.3.6 Customer Registration page

Figure 5.7: Shows a customer registration page where an employee registers a customer with the e-invoice system by adding a regular customer detail in the system and becomes a valid member of the system. An employee fills in a customer's details like name, invoice number, country and address.

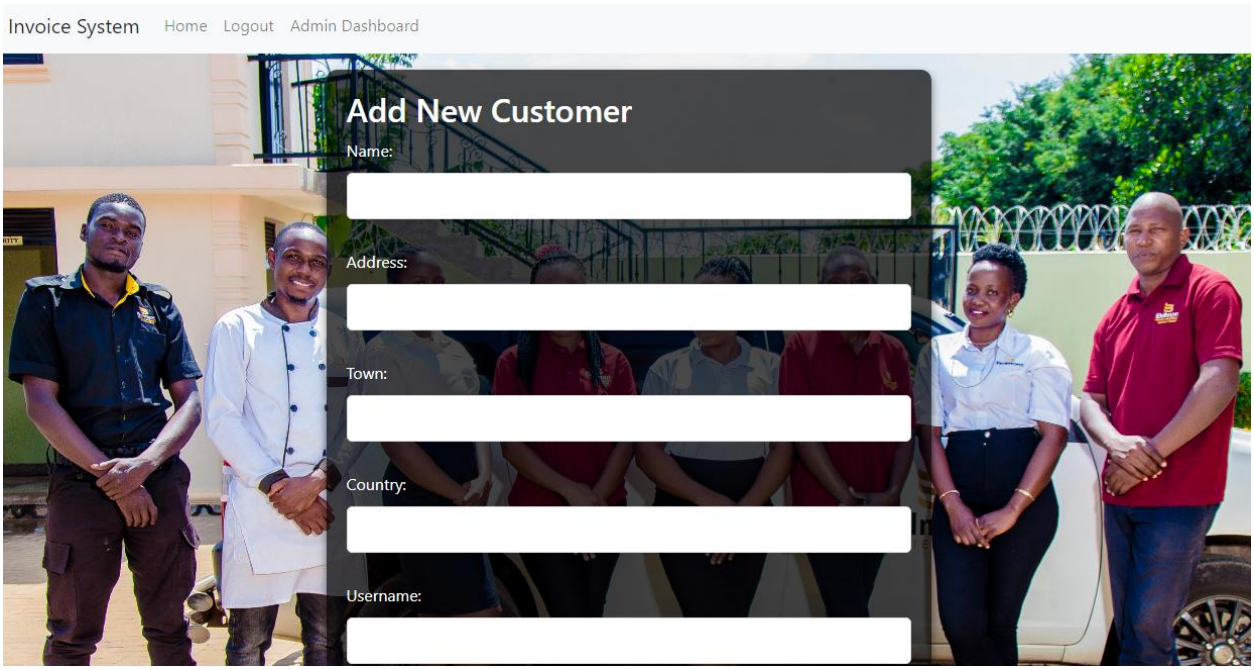


Figure 5. 5: Customer Registration page

5.3.7 Customer Details' page

Figure 5.8: Shows customers details for those customers who heve been receieving the service with the hotel.

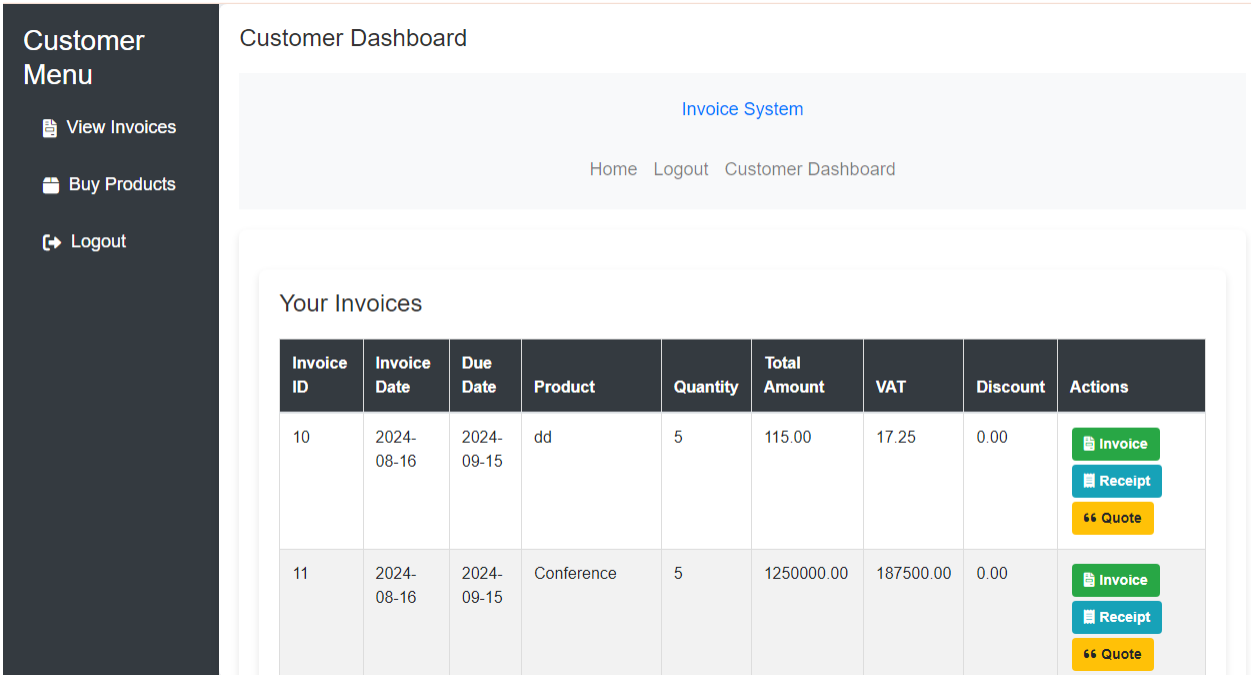


Figure 5. 6: Customer Details page

5.3.10 invoice display pages

Figure 5.11: Shows the invoice that has been generated and created in the systema and ready to print or send.

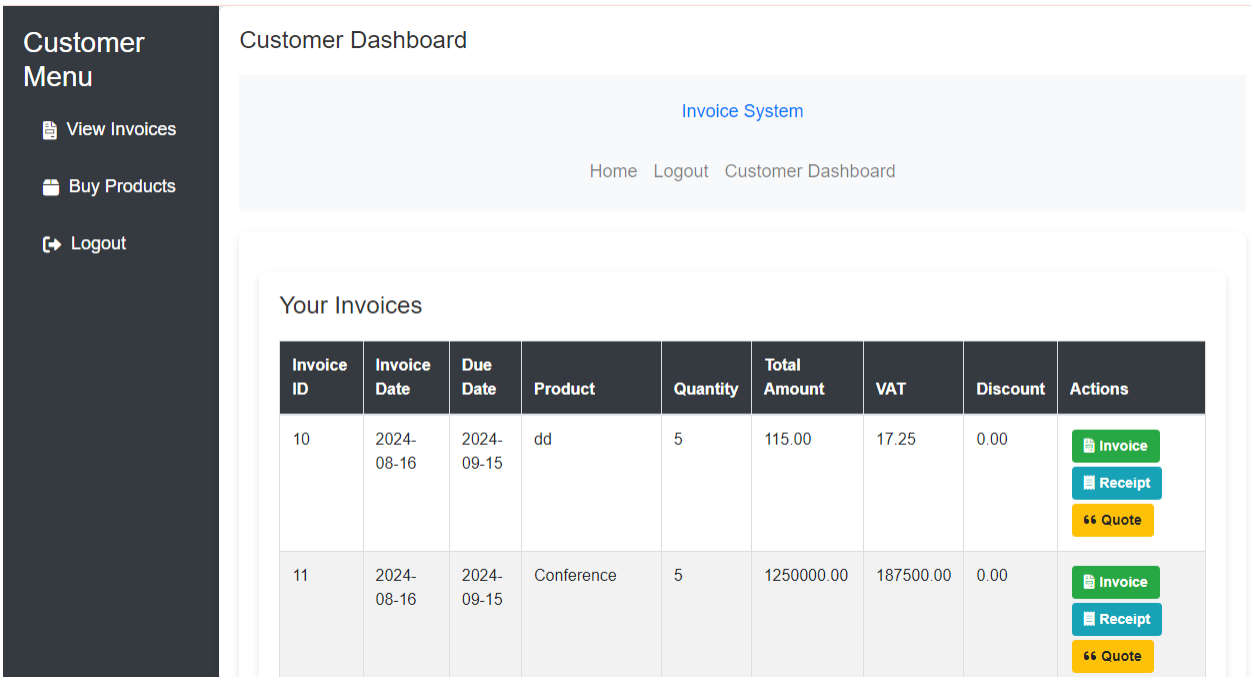


Figure 5. 7: invoice display pages

5.3.11 Product pages

Figure 5.12: Shows the product list that you like and create or add new product in the system.

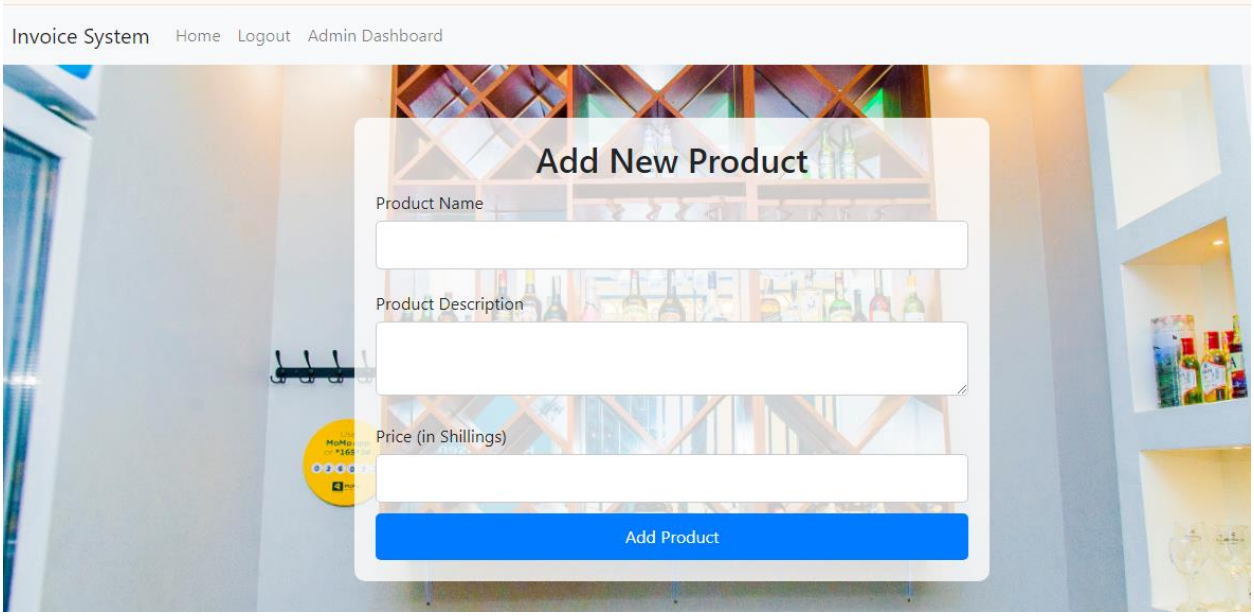


Figure 5. 81: add new product pages

5.4 System Testing and Validation Results

We carried out system testing with an aim of finding out errors that were in the system. We also performed system Validation to ensure that the system conformed to the then defined user needs and requirements. We presented the system to some of the users so as to get feedback about the system performance in relation to their requirements.

5.4.1 System Testing Results

The e-invoice System was presented to users with the intent of finding errors and observing if it behaved as expected. The faults were corrected and the process was repeated until the system was proven to be working according to users' specification and performance requirements.

We also tested the system to see whether it was capturing valid data, this was done by putting wrong data and then the system didn't allow. Testing and validation were done successfully.

5.4.2 Validation Results

The e-invoice System was presented to different users so as to get feedback about the system performance as to whether the system met their needs or user requirements for which it was designed for. The process involved checking input and output data of the system to ensure that they are complete and accurate especially in the area of database to check whether the system conformed to the standards of similar systems under defined operating conditions. Further tests on validation were carried out on the system to verify that it met the specified user requirements.
The users were satisfied with the system and concluded that the system was simple to use allowing them to navigate through the system with ease.

Table 14: System Validation.

Feature	**Number of users out of 5**	**Percentage of users**
Learnability	2	50.0
User friendly	3	60.0
Improves the invoice transactions	4	80.0
Solves the problem of delays to receive the invoices.	4	80.0

5.5 Conclusion

In summary, this chapter described the system functions provided to all users like customers, employees, administrators and the various screen shots used in the system. Testing and validation were performed where the system was checked to see if it had any errors and whether it met the specified user requirement respectively to which the results were gathered.

Chapter Six

Summary, Recommendations and Conclusion

6.1 Summary

The e-invoice system has been successfully developed, tested, and implemented. The system automates the generation, delivery, and storage of electronic invoices, improving accuracy, efficiency, and compliance with regulatory requirements. For security reasons, each user is given a user name and password and this will be the only way they will be able to log into the system but using a similar interface. The administrator has the overall privileges.

6.2 Recommendations

To ensure the long-term success and efficiency of the e-invoice system, we recommend continuous training for staff and the establishment of a dedicated support team to address any issues. Regular system monitoring, maintenance, and updates should be implemented to keep the system aligned with technological advancements and regulatory changes. Gathering user feedback is crucial for identifying areas for improvement and prioritizing future enhancements, such as additional integrations with other business tools. Data security must be continually reviewed to protect sensitive financial information, and the system should be scalable to handle increased transaction volumes as the business grows. Additionally, educating clients on the benefits of e-invoicing and providing support channels will enhance their experience and adoption of the system.

Similar systems should be developed for the other business institutions in the Uganda.

6.3 Future work

For future work, we plan to focus on expanding the system's capabilities by integrating it with other business platforms such as customer relationship management (CRM) and supply chain management systems. This will enable a more comprehensive automation of business processes. We will also explore the development of advanced analytics features to provide deeper insights into financial data and improve decision-making. Additionally, we aim to enhance the system's scalability to accommodate growing transaction volumes and potential expansion into new markets. Continuous improvement will be driven by user feedback, with regular updates and new features added to address emerging needs. Finally, we will monitor evolving regulations and industry standards to ensure the system remains compliant and secure, adapting to any changes in the digital invoicing landscape.

6.4 Conclusions

The successful implementation of the e-invoice system marks a significant milestone in our digital transformation journey. The system has streamlined the invoicing process, reduced errors, and enhancing overall efficiency. With the automation of invoice generation and delivery, we have not only improved operational effectiveness but also enhanced our compliance with regulatory standards.

The system's positive impact on cash flow and customer satisfaction further underscores its value to the organization. Moving forward, we will focus on continuous improvement, ensuring that the system evolves with emerging needs and technological advancements. With the necessary support and training in place, the e-invoice system is well-positioned to contribute to our long-term success.

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Appendices

Appendix I: Interview schedule sample questions

i. What is your opinion in the e-invoice systems?
ii. What is your highest academic qualification attained?
iii. Do you have an e-invoice system in your organization?
iv. What are the expected roles of an e-invoice systems in your organization?
v. Does your organization provide invoices and receipts to customers?
vi. What are some of the difficulties you are facing with your current system?
vii. Is your system user friendly?
viii. What solutions do you think can work best in enhancing your current system?
ix. Does your system support data and information backups?
x. What are your expectations from the new system?
xi. How do you rate the system performance?
xii. How do you rate the system reliability?
xiii. How do you rate the system simplicity?
xiv. How do you rate the system security?

Appendix II: Questionnaires.

Dear Respondent,

I am final year BsIT students from UGANDA CHRISTIAN UNIVERSITY doing our final year research on Internet systems focusing on a topic: E-INVOICE System; A case study of Belmont Hotel. The research is purely academic and the information you will give us will be treated with the highest level of confidentiality.

Any assistance you render us in answering these questions will be highly appreciated.

Please put a tick (√ in spaces provided

i. What is your position in the organization?

ii. Top Management ……. Middle Management ……. Operational Management …….

iii. Number of years worked

10 years and above…….. 5-10 years ……. 3-5 years …… 0-3 years ….

iv. What is your highest education qualification?

Certificate …… Diploma …… Degree ……. Masters ……. PHD …….

v. Do you have an E-invoice system?

No …….. Yes ……

vi. Does your current system calculate the balance sheet?

No …… Yes …….

vii. Do you use your system to calculate the net profits/ loss?

No……. Yes…….

viii. What should the new system provide?

……
……

ix. How do you rate your system costs?

Very expensive……. Expensive ……..cheap ……. Very cheap……..

x. How user friendly is your system?

Good ……. Very good …….. Very fair …….. Fair……..

Appendix III: The System Validation Questionnaire

i. Is the new e-invoice system easy to learn?

Yes …….

No ……..

ii. Does the new system improve the invoicing process processes?

Agree ……

Disagree ……

Not sure …….

iii. How would you rate the user friendliness of the new e-invoice system?

Below 40% …….

50% …….

60% ……

Above 80% ……..

iv. Does the new system capture all the information required from the user?

Yes …….

No …….

v. Does the new system solve the problem of solve the problem of delayed invoices, errors and paper-based work?

Yes …… No ……

vi. Give any other comments

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