

AFRICA UNIVERSITY

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Design, development and Implementation of a Computerised Stock Management System at
ALG WORLD INVESTMENTS Harare, Zimbabwe.

BY

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A DISSERTATION/THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE HONOURS IN
COMPUTER SCIENCE IN THE FACULTY OF BUSINESS, PEACE, LEADERSHIP AND
GOVERNANCE.

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Abstract

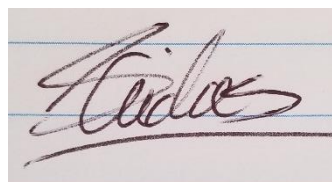
A computerised stock management system is a web-based application designed to help better manage stock both on the premise of the company it is being used or remotely. The sole purpose of a computerised stock management system is to help management make sound decisions in regards to stock, prevent stock thefts and to always have buffer stock and not run out of stock at critical points in time. A computerised stock management system has the ability to provide summarised reports, well detailed reports and view stock levels in tabular formats. The computerised stock management system has a platform that allows users to enter in details pertaining stock, this is entered through a front-end form that will send the details entered into the database. The study set out to investigate why stock thefts are occurring at ALG World and how. In addition to that, develop a computerised stock management that will help reduce these thefts and provide its users with a way of seeing when stocks are below a certain buffer level.

Key Words: Computerised Stock Management System, thefts, stock development.

Declaration page

I declare that this project is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another University for the award of a degree.

Shingirai Chidavaenzi



Student's full name

Signature

Timothy Makambwa



Supervisor's full name

Signature

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CHAPTER 1 INTRODUCTION

Introduction

A Computerised Stock Management System, is an electronic system that is aimed at keeping records of stocks within an organisation. It provides relevant information to the user's information such as: the type of stocks left, the quantities, items delivered and who delivered them, the individual who checked in the stock and who checked it out. (Shazia Arshad, January 2000)

According to primary research conducted by the researcher by going to various companies in Harare, currently in Harare Zimbabwe three quarters of the total of big organisations in Zimbabwe still use the paper-based system to keep track of their stocks which tends to consume a lot of time in stock taking, receiving and dispatch of stocks. It only does not consume time but consumes paper as well in a world that is becoming conscious about global warming the system will leave its mark in reducing company carbon footprint. Furthermore, it will help top management keep track of stocks remotely and order stocks in time.

1.2 Background of the study

A Computerised Stock Management System is something that is still going through improvements and is not at 100 percent like every system it is going through continuous development. This system is a record that is saved in digital format which is then able to track the movement of stocks from the point they are checked into the organisation until they are sold or dispatched elsewhere. information about the product can be recorded such as: the product name, serial number, colour and quantity can be recorded for use either by top management to see which products are selling the most or by the sales department to know when to order new products so they can meet demand of products and satisfy their customers.

A Stock Management System can also serve as a security measure to prevent the theft of stocks within the organisation as they need to be checked in with the name of the individual that has checked it in and the same when it is checked out for sale.

Managing of stocks within an organisation is an important part of any organisation that buys stocks for resale like the organisation in question and this process of stock management is done using a paper-based system, whereby the receiver writes down each and every product that is coming in his stock book however, when stocks are going out after being sold sometimes it is not recorded. The main use of a computer-based stock management system is to track stock levels and quantities.

The development of technology and introduction of the big data topic has meant that systems now have integrated data analytical interfaces that present information to top management in the form graphs or simple information. This then allows management to be able to collect data, store it, analyse and share data with relevant stakeholders of the organisation.

1.3 Statement of The Problem.

ALG World Investments is an organisation that is into payment solutions and the sale of computer hardware and consumables as such, they order stock and keep it until an order has been made for the available stock. Many at times stocks supplied are received in large quantities. This presents a very huge problem for the receiver who has to manually record these stocks being received in a book using the traditional method of pen and paper. This method breaches the integrity of the data being recorded because the receiver can easily intentionally record false information about the number of stocks received, the current paper based system at ALG World made it possible for anyone to sign in/out a particular product without proper control measures, this meant that even an intern like myself could sign out a particular product and go out with it for my own personal benefit, the current paper based

system encourages theft of stocks as there is no proper strong control measures in place, with the current paper based it is only effective if and only if the stocks are recorded.

1.4 RESEARCH OBJECTIVES

1. Identifying and understanding the current stock management system being used at ALG World Zimbabwe.
2. To design a computerised stock management system at ALG World Investments.
3. To implement a stock management system at ALG World investments.
4. To have a central system that allows users to create necessary documentation for the delivery of goods.
5. To identify strategies that can improve a computerised stock management system's usage and ratings.

1.5 RESEARCH QUESTIONS

1. How is the current system used to keep track of new stock received and kept record of within ALG World up until the point of sale?
2. How is the new system being designed going to aide in the management of stocks within ALG World?
3. What kind of implementation methods are going to be used to implement the new system?
4. How can the information about the best-selling products be presented to senior level management?
5. How can the computerized stock management system be implemented

1.6 ASSUMPTIONS

The study was conducted based on the assumption that:

The opinions of the study sample will be a representative of the whole group

All of the respondents will be cooperative and genuine with their responses and accurate data shall be provided.

1.7 SIGNIFICANCE OF THE STUDY

The main purpose of this project is to design a computerised stock management system that is in line with company's policies. The system will be able to. The system will have several functions that will make it possible for users to search for an item and easily retrieve information about the item. Finally, the system will be capable of having different user access controls according to their level of clearance and authorised personnel.

To The Academia

The research project will be able to help future researchers in order to help them understand how efficient and secure a stock management system is. It will also aide the university if they decide to use such a system to manage their stock.

To The Author

The research will assist the author in understanding the correct way to write a research paper and having a better understanding on the matter under study. Furthermore, the research helps the researcher and advances their skill in conducting researches as the researchers pursues further studies in the related field of study.

To the Users of The Computerised Stock Management System

The research will be of great relevance and benefit to the employees of ALG that are directly linked to the stock and products sold by ALG, to also help the employees understand the security issues around using a paper-based system as opposed to using the computerised stock management system.

1.8 Delimitation

Due to time constraints, this study was unable to clearly include all the variables that are related to multiple user access at the same time making changes to the stock database.

Time Scope

The research was prepared between October 2022 – December 2022 in order to allow the researcher to be able to gather all of the necessary information.

Geographical Scope

The research was done in Belvedere, Harare, Zimbabwe where ALG World is situated.

1.9 LIMITATION OF THE STUDY

The time available for the testing of the system before it is fully implemented is rather shorter than what is required for a well detailed report of the tests to be conducted.

Summary

The chapter was aimed at providing the background of the problem. In addition, has introduced the various aspects to be explored and used in the following chapters.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

2.1.1 What is a computerised stock management system

A computerised stock management system is a computer-based technology that monitors a company's inventory levels in real-time throughout the day. Company's can stay on track with inventory orders, counts and sales. In 1967 IBM made the first computerised information future of warehouse management system (extensive.com, n.d.). Currently there are several stock management systems available for use namely: Katana, Ordoro e-commerce inventory management system, Upserve and Zoho just to mention a few. Before the on set of the covid19 pandemic many businesses in Zimbabwe specifically were using the paper-based stock management system however, the pandemic brought about a few changes to the way businesses in Zimbabwe operated. 90% of the registered organisations in Zimbabwe adopted the computerised stock management system as the system allowed managers, executives and even the CEO to view stock levels remotely and not need to travel to the physical location of company.

A computerised stock management system which can also be referred to as a perpetual inventory management system, is a principal type of inventory tracking. It allows everything related to a firm's inventory and supply chain to be tracked in real-time. With every sale, delivery, or breakage, stock levels and related reports are updated in real-time (Brightpearl, n.d) as compared with the manual periodic inventory management systems that are record this information on a paper manually.

The growth of the computerised stock management system in Zimbabwe continues to grow because of the advantages such a system brings to an organisation, according to an article on the website (nibussinessinfo.co.uk, n.d.) states that computerised stock management systems

are gaining popularity because of the way they monitor and handle stock levels. The systems are able to reorder stocks with little to no human intervention, thereby increasing the efficiency of the company. These computerised systems are able to identify the cheapest suppliers and order from those suppliers.

2.1.2 Types of Computerised Stock Management Systems.

There are various computerised stock management systems that are being used worldwide by different businesses to control and monitor their stock these include the Linnworks. This is an emerging program that is not yet ranked among all inventory management software, it is available on a few platforms, including windows-based devices and may be set up in the cloud. (Linnworks, 2009). Furthermore, you have access to both complex and straightforward reporting, as well as limited automation to speed up your workflows. Linnworks provides its users with various features to make stock management and control easy these features include: accounting integration, access controls and permissions, barcode generation, barcode printing, barcode management, barcoding/RFID and batch printing just to mention a few. (Linnworks, 2009)

The second computerised stock management system currently being used by big businesses is the Microsoft dynamics 365 field service stock management system. This is an inventory management system that manages from the products to the human assets of the business. This stock management system automates scheduling and makes sure stocks arrive well on time before they are depleted. (Peter Allen, 2022, Microsoft 365 dynamic). The Microsoft dynamics 365 also effectively manages asset history by making sure that technicians have the latest asset data, synchronised across dynamics 365 supply chain management to improve service accuracy.

Furthermore, fishbowl is another alternative that can be used as a stock management system, fishbowl is a system that is best suited for small businesses that are not interested in advanced features like integrations with BigCommerce and businesses with limited plans for upscaling in the immediate future. The lack of feature-rich makes it difficult for any business that will require in-depth data analytics and insights from their inventory management solution.

2.1.3 Computerised Stock Management System usage experience

According to the author's secondary research on Computerised Stock Management Systems, only a handful of organisations have adopted the Computerised Stock Management System these organisations include all that are in the IT retail sector, First pack, Webss, Laptop World, Creative Computers and Copier parts being the leading retail companies in this sector (Leonard Sengere, 23 September, 2019). These companies have all experienced the joy and satisfaction with a Computerised Stock Management system as it brings an efficient way of stock taking and stock management. The system provides accountability as it records whoever has logged in and has user access controls which means an authorised user can access the system and make alterations according to their rights.

According to the statistics taken from Copier Parts Pvt Ltd, before the introduction of the Computerised Stock Management System theft of stock by internal staff accounted for a quarter of their loss in revenue yearly, the introduction of this system made it difficult for internal employees to steal stock or manipulate records at receiving this therefore made management happy. (Copier Parts Pvt Ltd, 2022)

2.1.4 Limitations of a Computerised Stock Management System.

According to an article by (Kimberlee Leonard, January 28, 2019), the potential for a system crash is among the major issues with any computerised system. Data loss can be caused by a corrupt hard disk, power failures, and other technological problems. When companies can not

get the data they require, operations are at the very least hampered. To prevent data loss, business owners should frequently backup their data.

Furthermore, it is simple to omit time-consuming physical inventory audits when everything is automated. When the computers are doing the work, they could no longer seem required.

Yet its crucial to keep conducting routine audits to spot losses like spoilage or breakage.

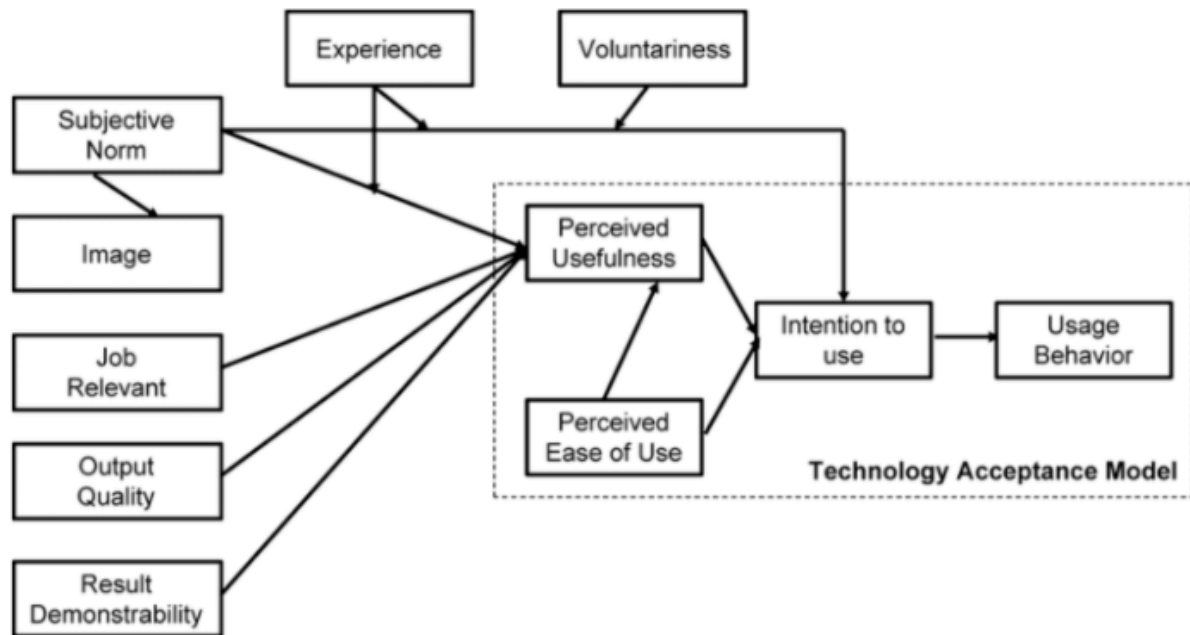
Moreover, audits assist business owners in sporting possible internal theft and tampering with the computerised inventory system.

2.2 Technology Acceptance Model

This is a model that was first developed in the late 1980's in 1986 to be exact by Fred Davis and Richard Bagozzi when they were part of the Computer and Information Systems graduate school of Business Administration at the University of Michigan in the US. It barely explains the system itself but explains what the intended users of the system perceive the system is all about. Technology Acceptance Model's success is based on the positive attitudes towards two measures which are the Perceived usefulness and the Perceived ease of use. This model is relevant when you are thinking of rolling out a new technology in an organisation such as ALG World Investment, after an initial trial. Conduct surveys within the organisation to ascertain the perceived usefulness and perceived ease of use, giving a rating of the answers on scale.

2.3 Relevance of The Technology Acceptance Model

The relevance of the technology acceptance model in relation to the stock management system being developed for ALG World Investments is best explained by the image below and the explanations below the image.



According to an article by Robert Allen on the Technology acceptance model (13, November, 2020) Venkatesh and Davis (2000) extended the original TAM model to explain perceived usefulness and usage intentions in relation of social influence and cognitive instrument processes.

Job Relevance: this aims at explaining the relevance of the stock management system in aiding the job activities of ALG World employees in achieving their daily tasks, this therefore means that the usefulness and job relevance of the computerised stock management system.

Output quality: is the computerised stock management system going to bring out the required output within ALG World and is the output going to be of good quality.

Result demonstrability: the result specificity that employees at ALG World consider after using the computerised stock management system.

Technical Research

Technical research is the study of some systems that are identical to find out about the functionalities and features of the existing system, this helps in discovering the flaws in the existing systems and take note and suggest good features.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This section outlines the research methodology that was used to conduct the design and implementation of a computerised stock management system at ALG WORLD. It consists of the research design, research instruments, data collection procedure and ethical considerations.

3.2 Research Design

Easterby (2006) suggests that a research design is the plan and structure of an investigation used to obtain evidence to answer questions. The author will use a blend of both qualitative and quantitative methods of research, the use of informative interviews and questionnaires will be implemented to complement each other on their flaws of methodologies. The use of these two methodologies will provide a thorough research findings.

In the qualitative aspect of the research the author will in-cooperate a wide range of in-depth interviews aimed at those staff members that are deal with stock or that need information pertaining to the stock levels.

Secondly, in the quantitative interview questionnaire, it will be conducted by a few selected respondents with experience of stock management and stock control. The questionnaire will address variables concerning the technicalities behind stock control, security issues involved with stock control and the economic variables. The questionnaire will also deal with variables concerning previous systems that have been used before at ALG World.

3.3 Population and Sampling

Punch (2010) stated that, a population is the whole target group members who would, in the perfect world be the subject of the research. The target group of this research will consist of all ALG World employees, with top management, middle management and authorities. Due to the small number of employees at ALG World a small target population of 13 people was selected as the whole population size and the sample size consisted of 12 people. These were used for feasibility purposes. This figure was achieved by using the sample calculator below:

$$\text{Sample size} = \frac{13}{1 + 13(0.05 * 0.05)}$$

$$N = 12$$

3.4 Sample Size

According to Cohen and Manion (2007), a sample size is a small piece, segment or portion chosen to represent the entire population. The researcher made use of 6 participants for the quantitative questionnaire and 6 for the qualitative interview. Cargan (2006) stated that the size of the sample depends on the precision of the intended results, if the researcher needs more accurate results of the population a large number of the sample may be necessary. The sample size of this research consists of 12 participants from different departments.

Table1 represents participants who took part in the research

Name of Department	SALES	ACCOUNTS	IT	EXECUTIVE	RECEIVING	PRODUCTION
Number of Participants	2	1	3	2	2	2

As stated in the title of the research, the researcher will primarily focus on the design, development and implementation of a computerised stock management system at ALG World, Harare, Zimbabwe. According to (Cooper and Schindler, 2003) a population is the total element needed by the researcher in making some inference with. This therefore means that the target population and sample came from the executives and employees of ALG World.

3.6 Sampling Method

(Shona McCombes, September 2019) states that it is nearly impossible to conduct research on the entire target group, instead you need to select a sample from that group, this sample will be individuals who will actually participate in the research. To come up with valid conclusions from your results, you have to carefully choose the sample that will represent the target group and this is done by using a sampling method. The researcher made use of a non-probability sampling method because it is convenient in nature.

3.6.1 Qualitative Sampling

Purposive Sampling

The research will adopt purposive sampling. The researcher chooses what needs to be known and finds those individuals that can and are willing to provide the necessary information by virtue of knowledge or experience (statisticssolutions, n.d). As such the researcher chose ALG employees based on their prior knowledge of a manual stock management system the drawbacks associated with it and the type of solution they need to make their work more convenient.

Convenience Sampling

A qualitative sampling technique that is used by researchers to recruit participants based on their convenience to the researcher. More often than not it involves using geographic location and resources that make participant recruitment convenient (staticssolutions, n.d). this therefore means that the researcher used ALG World employees as a sample based on their geographic location as they were all in the same premise.

3.6.2 Quantitative Sampling

Simple Random Sampling

The researcher utilized a simple random sampling technique to select the participants. six participants were randomly sampled for the questionnaire from a sampling frame of twelve participants.

3.7 Data Analysis and Presentation Methods

The data that is collected from the questionnaires will be thoroughly analysed, displayed in a tabular format. Furthermore, descriptive statistics, an average with standard deviation and charts will be generated to present the data.

3.8 Ethical Considerations.

Ethics is usually referred to as the branch of philosophy that deals with the dynamics of decision making concerning what is good and bad or right and wrong. Research ethics involve protecting those taking part in the research either or information gathered as secondary sources of information that is upholding the integrity of the data and keeping it safe. Ethical considerations in research is respecting the anonymity and confidentiality, respect for privacy, vulnerable groups of people and informed consent. The researcher considered all these ethical issues and factors and requested for consent from the participants

of the research. if any participant in the study wanted to remain anonymous the researcher respected that and did not publish their identity.

3.9 Summary

In this chapter the methodology of the study was discussed, the organisation of the field work, how the sampling was done, the methods used in the study and ethical considerations were also discussed in this chapter.

CHAPTER 4 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

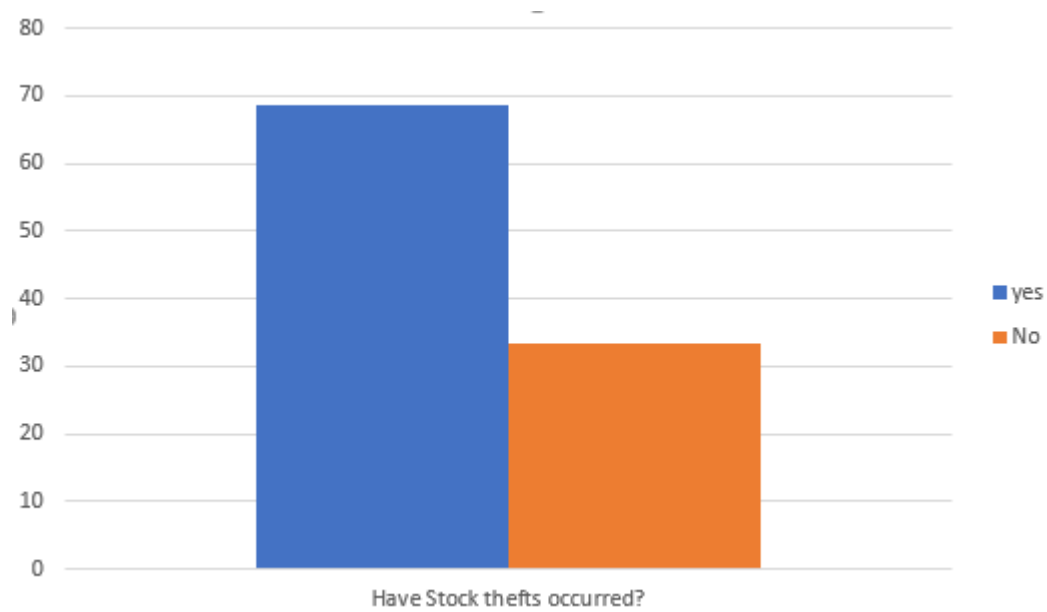
4.1 INTRODUCTION

This chapter presents the information gathered from the participants. The chapter will outline the different demographic characteristics of the participants in relation to the questionnaire, as well as their tenure, position held at the company. Furthermore, the chapter will analyse the data gathered through the narration of tables, graphics, pies and their respective percentages.

4.2 Demographic characteristic of research participants

For this study, a survey was conducted in Zimbabwe, specifically in Harare Belvedere, with a total of 12 respondents agreeing to participate. The survey was conducted by 12 males, 2 from the sales department, 2 from the accounts department, 4 from the purchasing and buying department, 2 from the IT department, 2 from the executive department whose also part of the accounts department and 1 from receiving. In addition, by the respondents 8 said stock thefts had occurred and were aware of these thefts and 4 of these respondents said they didn't know any thefts had occurred. From the 4 that said no thefts had occurred 2 are from the executive and the other two from the purchasing department.

In addition, half of the 12 respondents said that at ALG World stock has run out often and half of these were from the sales, receiving, accounts and managing director, purchasing and delivery. Two from the IT department said stocks at ALG World had not run out often and then one from the accounts executive department responded by saying often. Due to stocks running out at critical moments, conflicts have risen between lower-level employees and the managing director as he will be suspecting stock thefts 9 employees said that conflicts have happened and 3 said conflicts have not occurred. The response by the respondents is presented below:



Bar Chart 1 Stock thefts occurrence

DEPARTMENT	Stock thefts: Yes	Stock thefts: No
Sales	2 respondents	
Accounting	1 respondent	
IT	2 respondents	
Executive		2 respondents
Production	2	
Buying	4	

Table 1 Departments of the respondents

How often has ALG run out of stock at critical moments?

12 responses

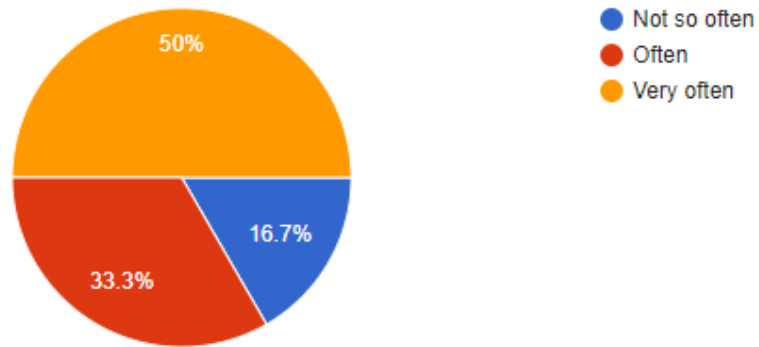


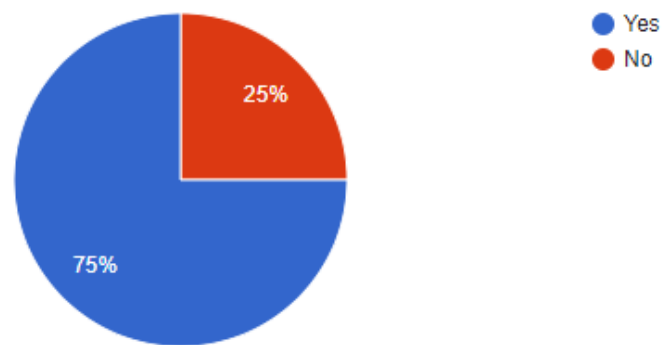
Chart 2 Stock depletion at critical moments.

Department	Not so often	Often	Very Often
Sales			2
IT	1	1	
Accounts			1
Executive	1		1
Purchasing		3	
Purchasing and Delivery			1
Receiving			1

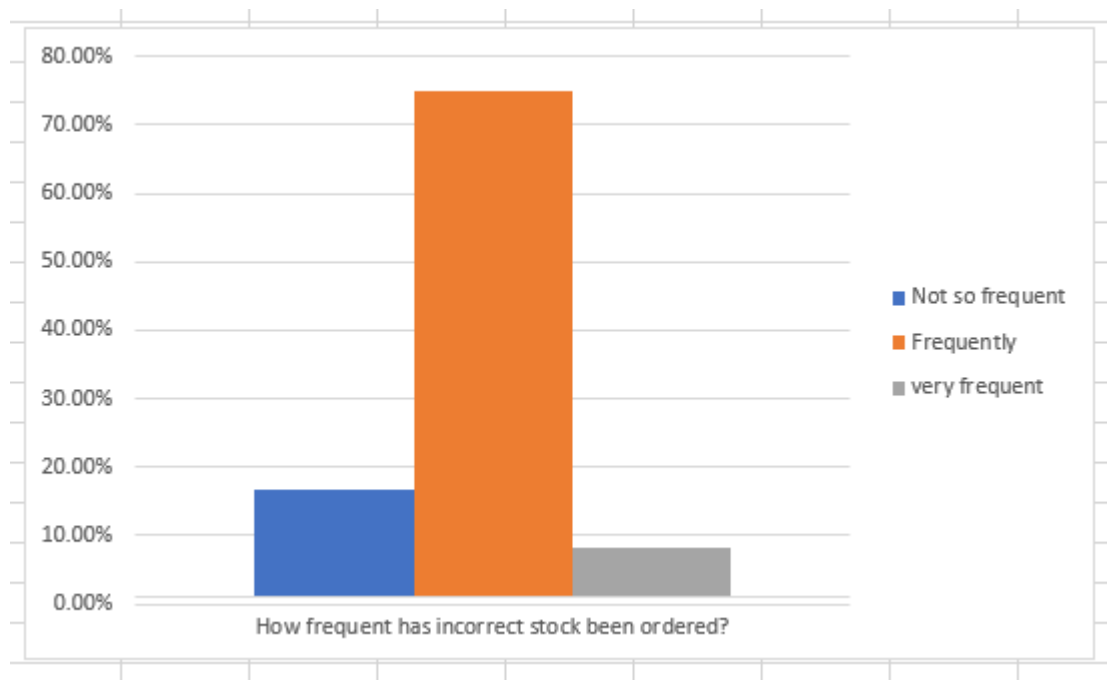
Table 2 Stock depletion in relation to departments

Have conflicts occurred between the receiving department and managing director in relation to inventory?

12 responses



Pie chart 3 conflicts between receiving and managing director



Bar Chart 4: representing how frequent incorrect stock been ordered

Ordering of incorrect stock	Responses
Not so frequent	2
Frequently	9
Very Frequent	1

Table 3: Frequency of ordering of incorrect stock

Would you consider using a computerized stock management system?

12 responses

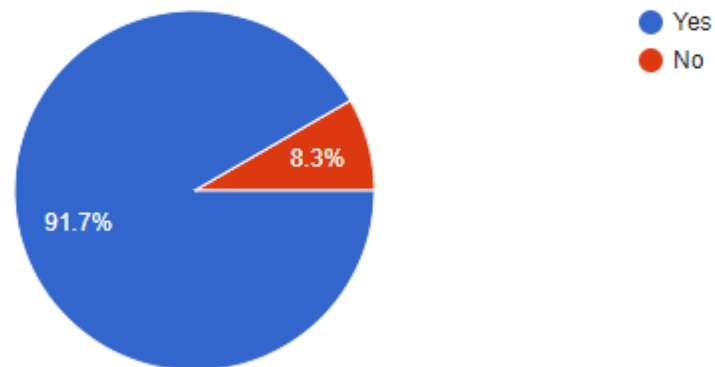


Chart 5: Respondents on whether they want a CSMS or not

Would you use a computerised stock management system	Response
Yes	11
No	1

Table 4: Responses regarding the use of a CSMS.

Finally, it can be deduced from the tables above that majority of the employees have experienced stock thefts at ALG World (Table 1), and a few employees have not experienced it because they are either in top management or in a department that does not handle stocks at all. Furthermore, the thefts have led to stocks depleting at critical times amongst other factors such as poor management of buffer stock levels. Half of the respondents said stocks run out very often at critical moments (Table 2), with three employees from different departments saying stocks do not deplete that often. Lastly the majority of the respondents are willing to have the stock management system being implemented at ALG World as seen by their response in chart 5.

4.2.1 DEMONSTRATION AND OUTPUT OF THE CSMS

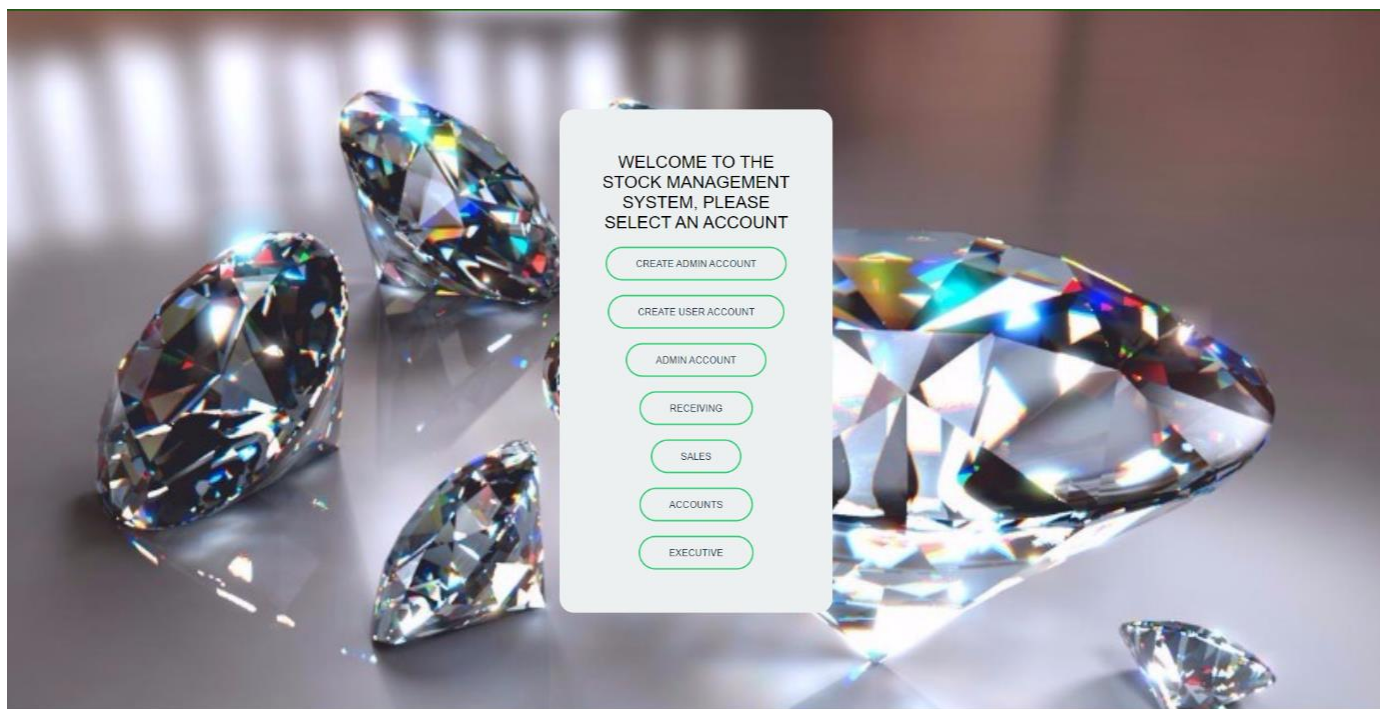


Image 1: Home page of the CSMS that allows the user to select an account.

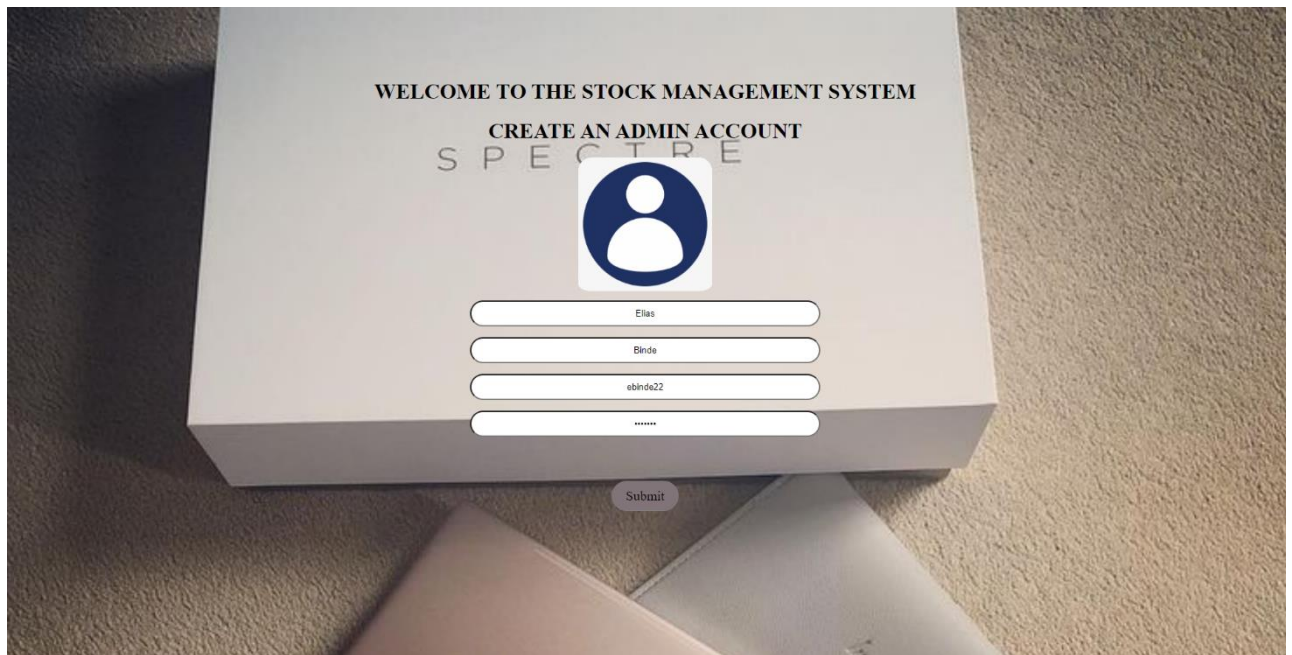


Image 2: Creating an administrative account.

registration successful

Image 3: Administrative account successfully created.

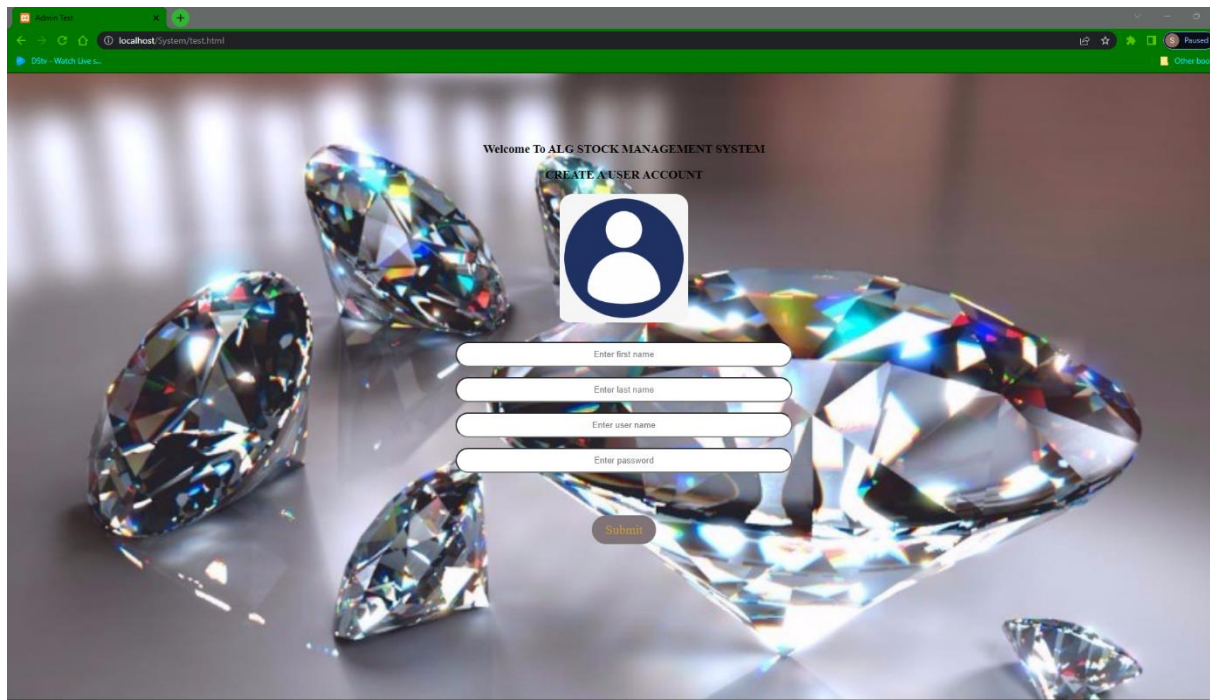
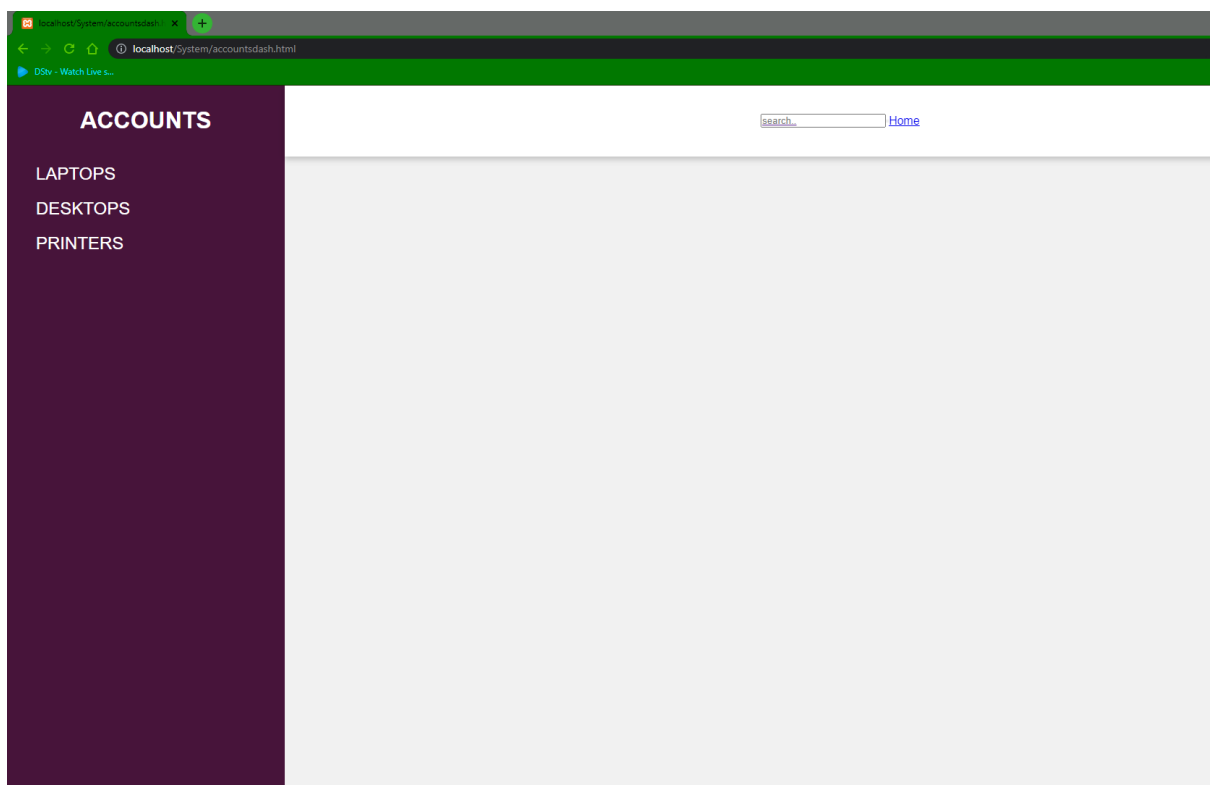


Image 4: Creating user accounts.



Images 5-8: Showing the dashboards of the different user accounts and views.

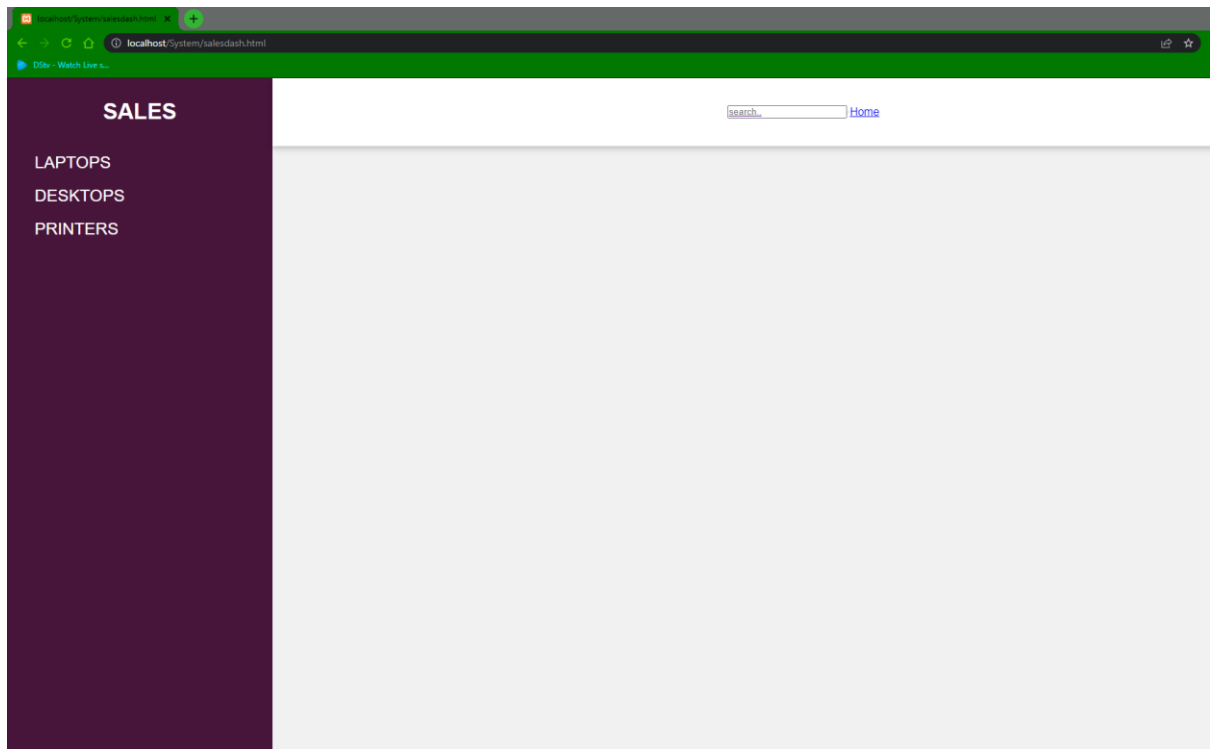


Image 6: Sales Dashboard

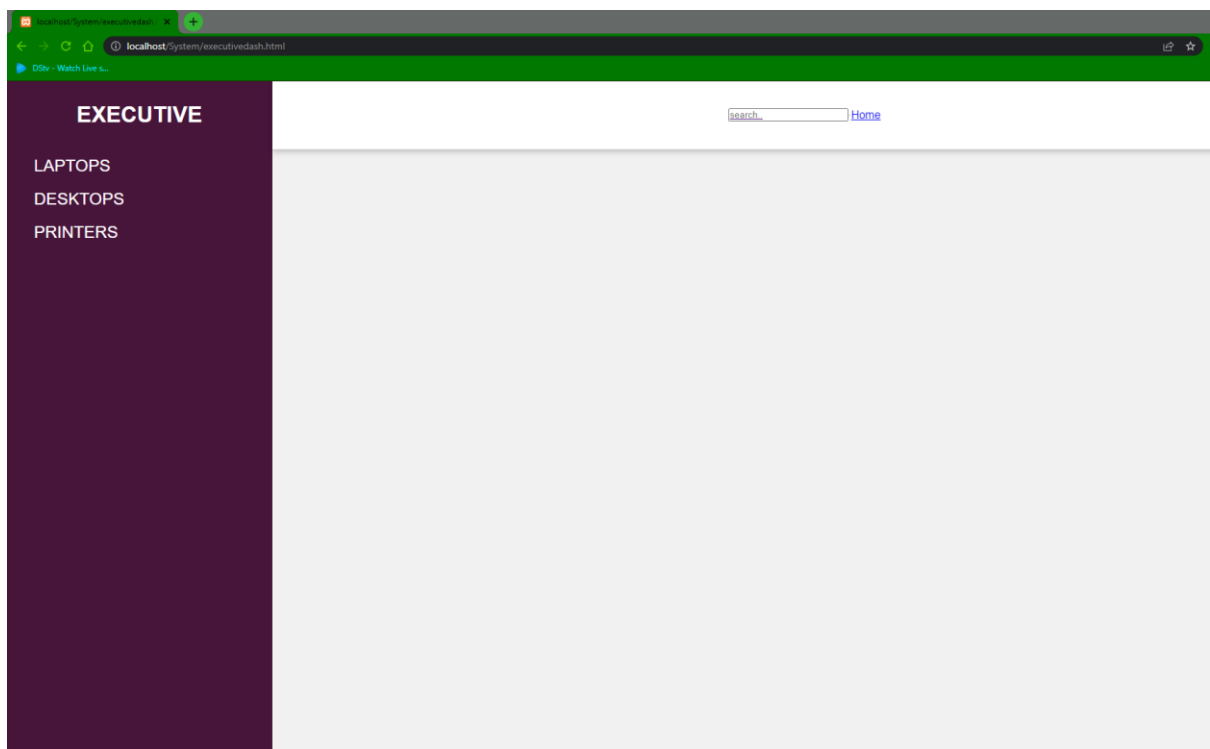


Image 7: Executive employees dashboard

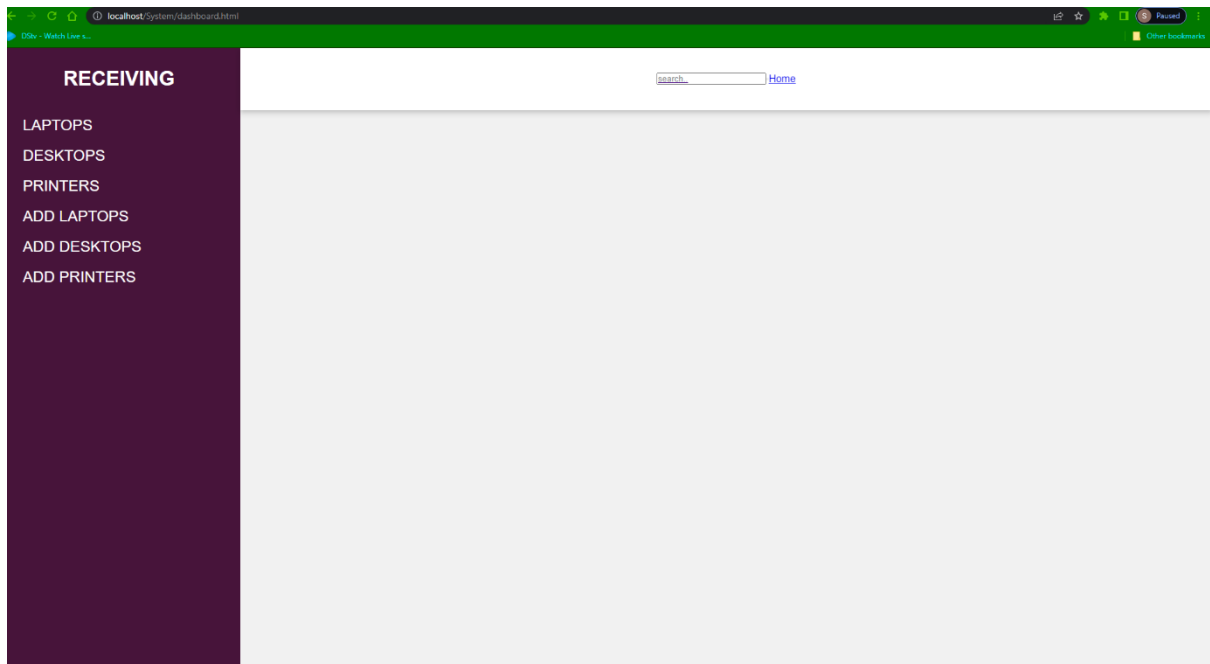


Image 8: Receiving Dashboard

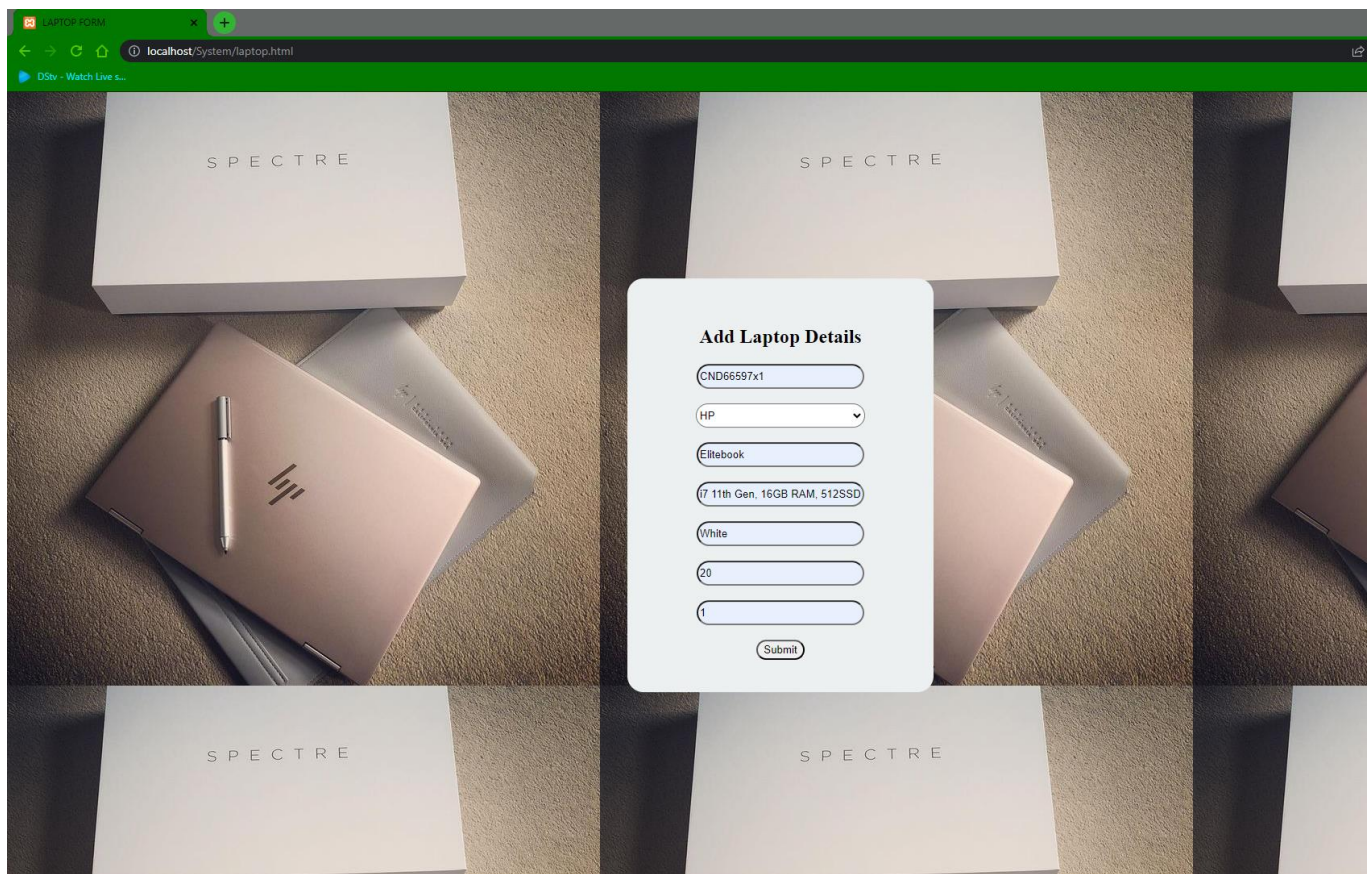


Image 9: Demonstrating a user adding details about a laptop

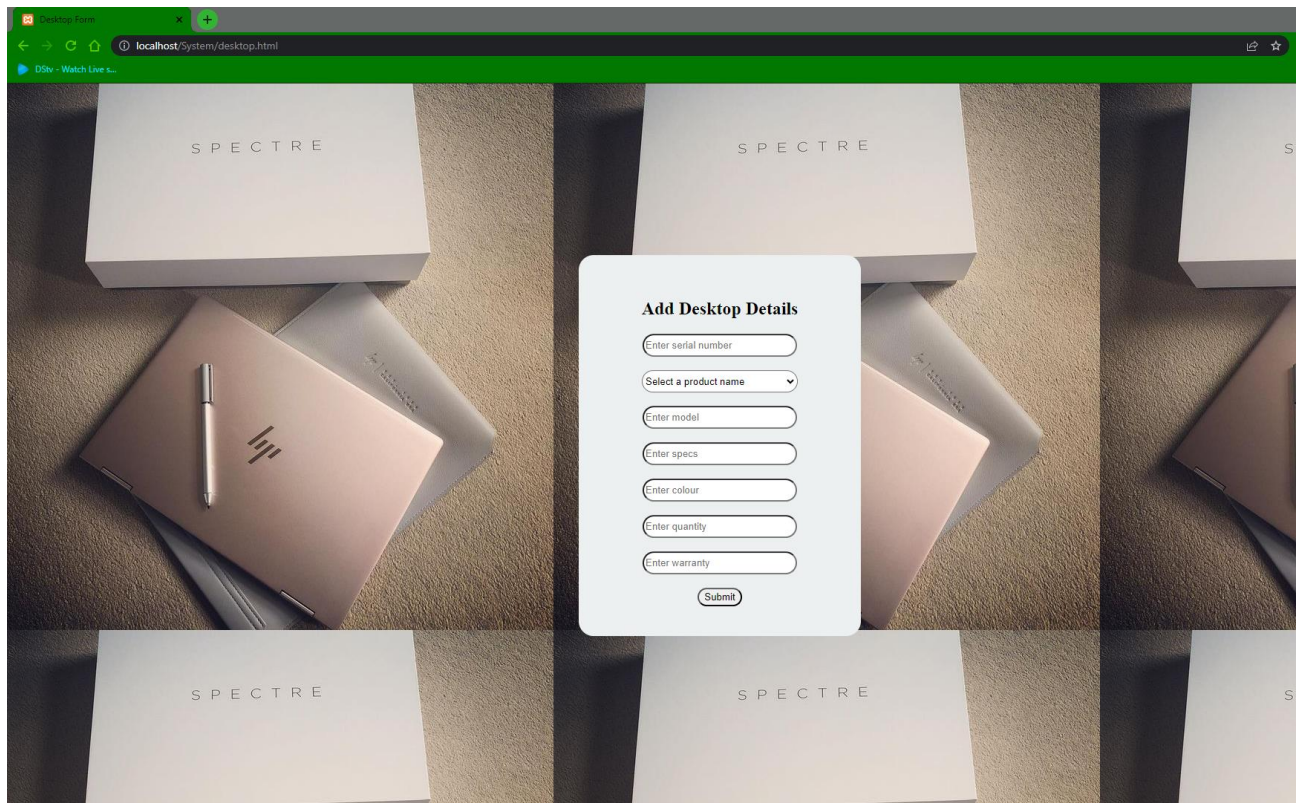


Image 10: Demonstrating a user entering information about a laptop

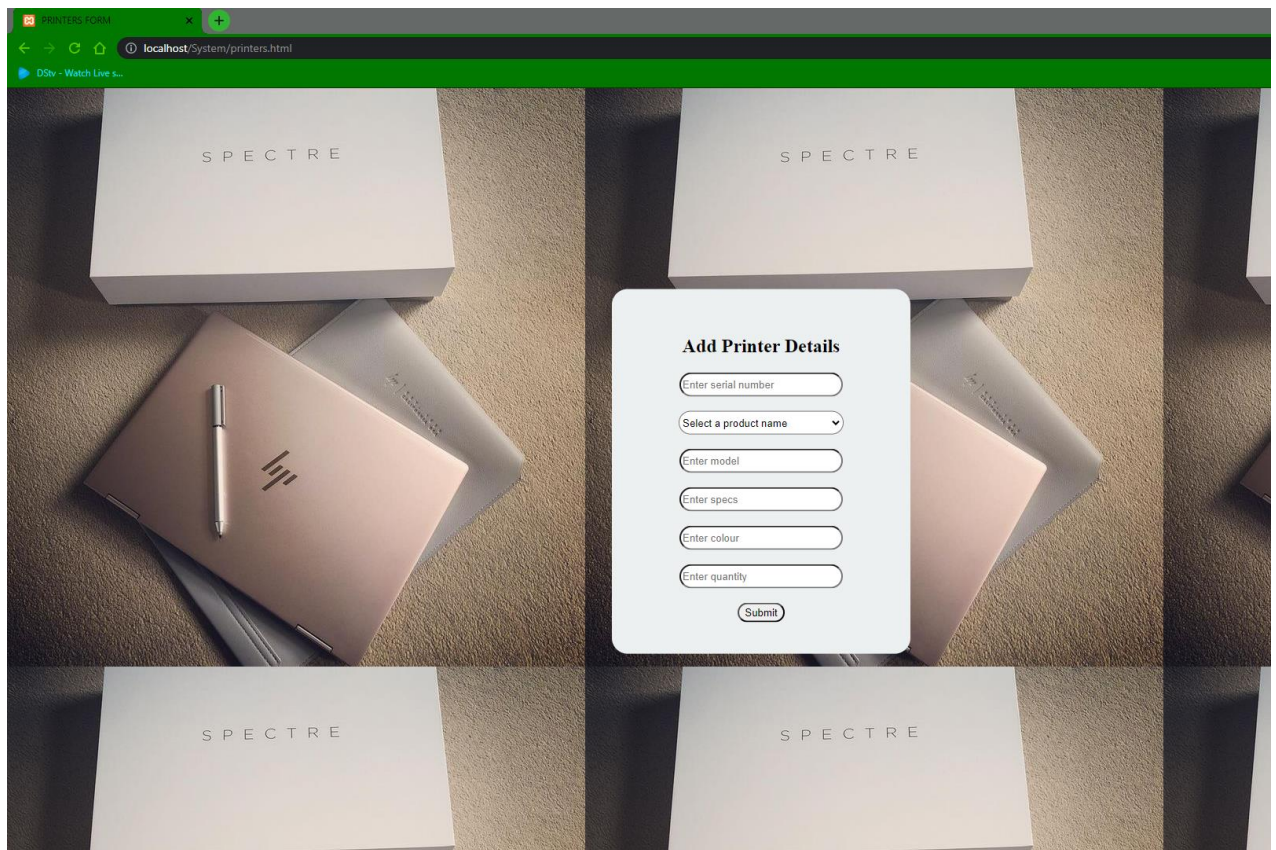
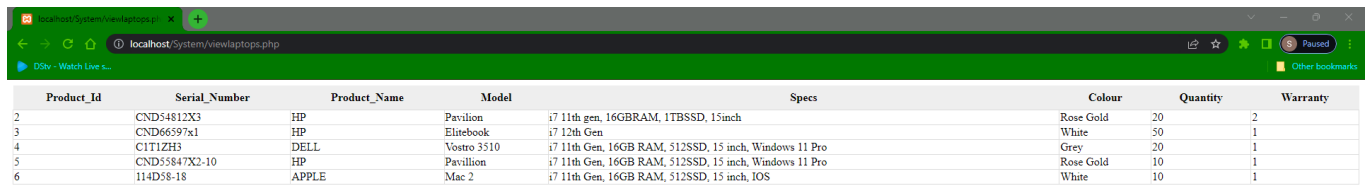
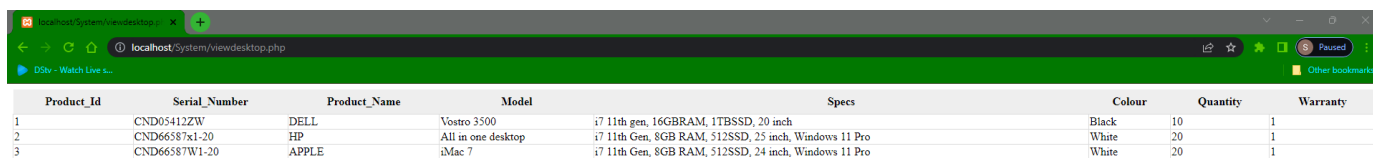


Image 11: Demonstrating a user entering information about a printer



Product_Id	Serial_Number	Product_Name	Model	Specs	Colour	Quantity	Warranty
2	CND54812X3	HP	Pavilion	i7 11th gen, 16GBRAM, 1TBSSD, 15inch	Rose Gold	20	2
3	CND66597x1	HP	Elitebook	i7 12th Gen	White	50	1
4	CIT1ZHZ3	DELL	Vostro 3510	i7 11th Gen, 16GB RAM, 512SSD, 15 inch, Windows 11 Pro	Grey	20	1
5	CND55847X2-10	HP	Pavillion	i7 11th Gen, 16GB RAM, 512SSD, 15 inch, Windows 11 Pro	Rose Gold	10	1
6	114D58-18	APPLE	Mac 2	i7 11th Gen, 16GB RAM, 512SSD, 15 inch, IOS	White	10	1

Image 12: Shows information about the laptops in stock



Product_Id	Serial_Number	Product_Name	Model	Specs	Colour	Quantity	Warranty
1	CND05412ZIW	DELL	Vostro 3500	i7 11th gen, 16GBRAM, 1TBSSD, 20 inch	Black	10	1
2	CND66587x1-20	HP	All in one desktop	i7 11th Gen, 8GB RAM, 512SSD, 25 inch, Windows 11 Pro	White	20	1
3	CND66587W1-20	APPLE	iMac 7	i7 11th Gen, 8GB RAM, 512SSD, 24 inch, Windows 11 Pro	White	20	1

Image 13: Shows information about the desktops in stock

4.3 Chapter Summary

The data from the research was presented and analysed in this chapter. It investigated the demographics of the research participants. It also mentioned the questionnaire response rate, departments worked in relation to stock management and questions to assess the level of stock thefts and incorrect stocks being ordered. In addition, it also provided a demonstration of how the system is going to be used and the outlook, the dashboards of different user accounts and different user views and how the receiving department will add different details of stocks: laptops, desktops and printers.

CHAPTER 5 SUMMARY, CONCLUSION AND RECOMMENDATIONS.

INTRODUCTION

The purpose of this study was to examine the process involved in the design, development and implementation of a computerised stock management system furthermore, to understand the current system being used at the organisation in question which is ALG World, as well as to provide solutions that can better manage stock in an efficient manner digitally. The chapter will also discuss the conclusions, research questions and recommendations for future research.

Discussion

Implementation Methods.

After development of the computerised stock management system, the developers can use various methods of implementation to implement the new system into ALG World. They could use a parallel way of implementation, which is introducing the new system in conjunction with the old paper based manual system that is they are both working at the same time.

This way of implementation has several benefits such as the lack of important data loss because the old system files are still present and can always be used if the new computerised stock management system fails hence it reduces data loss.

In addition, users have the flexibility to learn how to use the new computerised stock management system while using the old legacy paper-based stock management system,

this gives the chance for those slow learners to familiarise with the new system at their own pace without feeling like they are being rushed or being forced. With this approach there is less resistance to adopt the new system which will result in a smooth switch from the legacy to the new system.

Lastly the advantages of using this as an implementation method is that there is always a fall-back plan in case the new system is unacceptable.

However, this way of implementation is quite costly because users now have to divide attention between the two systems and maintain the two systems until the new system is fully implemented into ALG.

Phased approach of implementation can be used to implement the computerised stock management system into ALG. The new system can be introduced in phases, with this approach roadblocks and errors can be identified before critical departments are affected this therefore means that issues can be unearthed and solved with minimal impact.

However, this way implementation takes time and this will translate to higher costs as well and the process of implementation might frustrate some employees as they will feel like it is taking longer.

Advantages of a Computerised Stock Management System

Employees at ALG World and customers may instantly learn whether an item is in stock thanks to a computerized stock management system. The inventory and sales are in sync, thus a running count of what is and isn't in stock is available. Customers receive improved service and restocking needs are flagged. New orders are placed with vendors as soon as inventory falls below a predetermined level, and they are tracked to inform customers when the new products will arrive.

More than just keeping track of inventory locations and reorder points is what a computerised stock management system accomplishes. To compile the necessary forecasting and strategic planning reports, a data collection system is employed. Owners of businesses examine patterns to determine which products do well in particular months or cyclical seasons. Owners of businesses use this information to strategically plan for expansion and order merchandise to make the greatest use of cash flow resources.

Disadvantages of a Computerised Stock Management System

However, one of the biggest problems with a computerised stock management system is the possibility of a system crash. Data loss can be caused by a corrupt hard disk, power failures, and other technological problems. When companies can't get the data they require, operations are at the very least hampered. To prevent data loss, business owners should frequently backup their data to avoid problems associated with system crashes.

In addition, it is simple to omit time-consuming physical inventory audits when everything is automated. When the computers are doing the work, they could no longer seem required. Yet it's crucial to keep conducting routine audits to spot losses like spoilage or breakage. Moreover, audits assist business owners in spotting possible internal theft and tampering with the computerized inventory system.

Lastly in a world that has seen a rise in ransomware attacks and criminals profiting from ransomware attacks, a computerised stock management system is very susceptible to such attacks. A computerised stock management system like the one in question that is going to be connected to accounting will be a valuable resource to hack into in search of potential financial information or personal details of owners or clients.

CONCLUSION

Technology has advanced greatly in recent years to provide organisations, small to medium enterprises and retail shops with a better way to manage their stocks and make sure that they never have stock challenges. The onset of the covid 19 forced organisations to discover innovative ways to do business and make work flow seamless from different locations and this was achieved by introducing technologies like computerised stock management systems.

The study's main goal was to investigate the underlying issues associated with mismanagement of stocks within organisations (ALG World Pvt Ltd to be specific). This paper identifies the main problems that causes stock thefts, inadequate stocks and every other problem that comes up as a result of the root causes of mismanagement of stock. In order to bring the study to a close, the following conclusions were reached in accordance with the research questions.

5.1.1 implementation method that was used to implement the **Computerised Stock Management System**

After development and testing the next stage of every new computer software is to implement it into the organisation as such for this study a phased approach was used to implement the new system. A phased approach is when the new system is introduced in stages instead of rolling out the entire system at once. This approach to implementation was chosen because it provides the development team with the opportunity to study the new system with a fall-back legacy system still being used so as to make sure that if a catastrophic error occurs with the new system normal business operations are not hampered while the new system is being repaired.

In addition, the phased implementation method allowed for the implementation to be broken down into smaller components as such each component was reviewed before it went to the next stage. This therefore translated to better work and fewer issues as implementation efforts got to more critical departments like accounts that have to handle the financial aspects of the company.

ALG World is a small organisation in terms of size as such if a catastrophic failure is to occur with the new system the cost of rectifying this loss might be too large for them to cope with as such the phased approach to implementing this new computerised stock management system makes sense because the new system was introduced in stages as such at each stage the errors were easier to rectify and less costly to rectify.

However, this implementation method can be very costly if roll backs keep occurring, the rate of return on ALG World for this new computerised stock management system will be long. This implementation method requires participation from every individual in every department at different stages for it to be a success and avoid frequent roll backs that might prevent implementation from moving on to the next stage.

This implementation method reduced ALG World employee performance as attention was divided between trying to learn the new system being implemented at every stage it was being implemented furthermore, they needed to maintain the legacy system as well because the new computerised system was not fully implemented.

RECOMMENDATIONS

There are certain limitations to this study that need to be considered. Firstly, due to time constraints, the study clearly did not have all the variables included that are sufficient to have a full conclusive study. In this particular study, the researcher

primarily talked about the issues that lead to stock theft within ALG World, the issues that lead to stock depleting at critical moments within the organisation, the problems that lead to improper stocks being ordered and developing a computerised stock management system that can effectively ensure that stocks are managed well with some accountability. Other variables such as producing conclusive reports for the executive department to make sound decisions need to be studied, security risks of computerised stock management systems.

Furthermore, the study did not look into the different user acceptance of the new computerised stock management, some employees might not want to use new technologies as they prefer doing things in a way they are used to

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APPENDICES

APPENDIX 1: QUESTIONNAIRE SAMPLE FOR THE EMPLOYEES AT ALG WORLD

Current Stock management system evaluation.

This form is meant to find out how stock is currently being managed at ALG and if it is being efficiently managed.

Email *

Valid email

This form is collecting emails. [Change settings](#)

Name of respondent

Short answer text

Department you work under

Short answer text

What stock management system is being used?

- ☐ Manual paper based stock management system
- ☐ Computerized stock management system
- ☐ Hybrid system

Have any stock thefts occurred?

☐ Yes

☐ No

How often has ALG run out of stock at critical moments?

☐ Not so often

☐ Often

☐ Very often

How many times is stock taking conducted

☐ Weekly basis

☐ Once a month

☐ quartley

Have conflicts occurred between the receiving department and managing director in relation to inventory?

☐ Yes

☐ No

How frequent has incorrect stock been ordered?

- ☐ Not so frequently
- ☐ Frequently
- ☐ Very frequent

How many times do you check the stock and sales book for information?

- ☐ Everyday
- ☐ Once a week
- ☐ Monthly
- ☐ Never

Do you wish to see sales data at the click of a button?

- ☐ Yes
- ☐ No

Would you consider using a computerized stock management system?

- ☐ Yes

Do you wish to see sales data at the click of a button?

☐ Yes

☐ No

Would you consider using a computerized stock management system?

☐ Yes

☐ No

If no state the reason

Short answer text

Any features you would like to see on a CSMS

Long answer text

Appendix 2: Approval from AUREC



AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 website: www.african.edu

Ref: AU2702/23

24 March, 2023

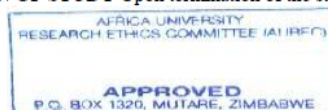
Shingirai Chidavaenzi
C/O Africa University
Box 1320
MUTARE

RE: Design, development and Implementation of A Computerised Stock Management System At ALG WORLD INVESTMENTS Harare, Zimbabwe.

Thank you for the above-titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

- a) Research proposal
 - **APPROVAL NUMBER** AUREC 2702/23
This number should be used on all correspondences, consent forms, and appropriate documents.
 - **AUREC MEETING DATE** NA
 - **APPROVAL DATE** March 24, 2023
 - **EXPIRATION DATE** March 24, 2024
 - **TYPE OF MEETING** Expedited
After the expiration date, this research may only continue upon renewal. For purposes of renewal, a progress report on a standard AUREC form should be submitted a month before the expiration date.
 - **SERIOUS ADVERSE EVENTS** All serious problems having to do with subject safety must be reported to AUREC within 3 working days on standard AUREC form.
 - **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
 - **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.



Yours Faithfully

MARY CHINZOU
ASSISTANT RESEARCH OFFICER: FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE

Appendix 3: Approval from ALG World to conduct a study



11 PERCY FYNN ROAD
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sales@algworld.co.zw

28 November 2022

Dear Sir/ Madam

RE: PERMISSION FOR SHINGIRAI CHIDAVAZENZI TO CONDUCT A RESEARCH ABOUT ALG WORLD'S STOCK MANAGEMENT.

We refer to the above granting permission to Shingirai Chidavaenzi to conduct a research and grant further permission for anything else that will be involved in his research

Yours Faithfully,

Washington Kadero

Sales and Administration

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