

THE MANAGEMENT INFORMATION SYSTEM

A CASE OF DEJAVOUR SUPERMARKET

BY

NUWAGABA IGNATIUS

BIT/17606/71/DU

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Declaration

I do hereby declare that this Project Report is original and has not been published and/or submitted for any other degree or Diploma award to any other University or institute before.

NAMES

#	Names	Registration Number	Signature
	Nuwagaba Ignatius	BIT/17606/71/DU	

Date.....^{12th}/~~Nov~~^{Oct}/2012.....

Approval

This project report has been submitted for examination with my approval;

Signed: 

Date: 12th Oct 2012

ENG. KASAWULI FAIK

Dedication

I humbly thank the Almighty God for having kept me for all these years and the energy to come up with this report.

I dedicate this work to my dear parents and guardian for their tireless efforts towards the success of this degree award. I thank them for having supported us both financially, parental care as well as in prayers.

I also dedicate this work to our supervisor ENG. KASAWULI FAIK

for the tireless work, supervision and guidance he has offered us. It has been great working with him. God bless you abundantly.

Furthermore we dedicate to the management of Dejavour Supermarket for providing me with information and assistance that was required to attain the success of this project.

Also I want to thank all the friends for their corporation, contributions and efforts rendered towards achieving this success.

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Abstract.

The purpose of this project was to develop a Supermarket management system for Dejavour Supermarket Limited. The researcher collected data through interviewing the company's employees and customers/clients met at the Supermarket's main branch, and observing how the previous system was functioning from where I based myself to come up with the project report and system. Because of the nature of this study, data was further collected from secondary sources like literature review. Results from data collected indicated that the system being used was inefficient in tracking, storage and retrieval of supermarket sales and stock information which led to delays in decision making for the management. Therefore to solve the above problem I designed, implemented, tested and validated a well functioning Supermarket management system for Dejavour Supermarket. The system developed is now able to efficiently track, store and retrieve supermarket sales against stock information in a timely and convenient fashion, thus decision making was enhanced. The research examined ways of expanding the product selling systems to improve on existing systems. Future research work is also needed on how to build better products and inventory management systems to improve efficiency, reliability and user friendly systems.

List of Abbreviations

HTML:	Hyper Text Markup Language
PHP:	Hypertext Pre-Processor
SQL:	Structured Query Language
ERD:	Entity Relationship Diagrams
EERD:	Enhanced Entity Relationship Diagrams
DFD:	Dataflow diagrams
VIP:	Very Important Personnel
GB:	Gigabit
RAM:	Random Access Memory
VGA:	Video Graphics Accelerator
MHZ:	Megahertz
SCD:	System context diagram.
DBMS:	Database Management System
CSS:	Cascading Style Sheet

CHAPTER ONE

1.0 Introduction

Dejavour supermarket is a supermarket located in Kanyanya along Gayaza road. After its inception dejavour supermarket has been using a manual file based information system to manage inventory stock and sales information. Purchasing information, vendor and regular customer information has been stored in books and on paper receipts. At first this seemed to work perfectly but as competition in the business increased and the number of customers and vendors increased, the whole process became slow and less efficient. At times fewer inventories would be purchased leading to shortage of services to the customers or at times losses may not be realized and total sales would be hard to calculate. Management thus decided to make a change and institute a Supermarket management system that will allow easy storage and viewing of supermarket inventory stock and sales information to make timely decisions.

1.1 Problem Statement

The management and tracking of supermarket sales and inventory stock information at Dejavour supermarket has been problematic due to the use of manual file based information system both in handling stocking and selling daily inventory of the supermarket as the number of customers and supermarket size expanded. Management has found it very hard to make timely decisions due to poor information storage and retrieval of supermarket sales and stock information.

Much as dejavour supermarket can record the sales and stock for their inventory, it is difficult to make and quickly view reports on domestic statistics for their inventory because of numerous problems associated with their information systems. The problem this project will address thus, is poor information tracking and inventory management to increase efficiency of information management to enhance the decision making process which has always been dragged down by untimely provision of information to management at dejavour supermarket.

1.2 Objectives

1.2.1 Main Objective

The main objective of this study is to develop a Supermarket Management System for dejavour supermarket, which will make it possible for dejavour supermarket management to easily view inventory stock and sales information recorded in the management system.

1.2.2 Specific Objectives

- i. To collect and analyze data from dejavour supermarket
- ii. To design a management system for dejavour supermarket
- iii. To implement an automated inventory tracking system for dejavour supermarket
- iv. To test the designed system for any errors and validate its functionality

1.3 Scope

The study is conducted at dejavour supermarket located in Kanyanya along Gayaza road and focus is made on all operations done by management as well as sales and stock of the supermarket, sharing information within dejavour supermarket and its stake holders like Vendors and suppliers. Specifically this covers information access for the management. The study started on 15/march/2012 and ends on 28/may/2012

1.4 Significance of the study

The project is to make operations at dejavour supermarket to be run on accurate sales, vendor and stock information.

The project is to go a long way in improving on the provision of vital information to the right people especially the management at the right time for management purpose. Developing a supermarket system for dejavour supermarket would provide seamless and critical information, which is a key requirement.

The relevancy of the project primarily focuses on the Management, stock recorders and sellers who will be the core users. This will in turn lead to faster decision making, data entry and viewing by reducing on data inconsistencies, improper storage and increased paper work.

CHAPTER TWO

Literature Review

This chapter presents a review of the earlier work done by several researchers about sales records and management systems globally and the models and criteria that have already been used in organizational information management. Automated supermarket management systems have become so vital in the business sector, since there is always need to efficiently address structured and semi-structured circumstances. The literature has therefore been gathered relying on these areas of interest among others: Performance of the sales records management systems, Performance of the automated supermarket management systems and factual beliefs about the intended system.

2.1 Stock and Sales

Rose, (2009), states that whether a sales executive, sales manager, sales trainer, marketing manager, or maybe within an inside/outside sales rep role, you've likely struggled with writing a great resume. Why? Sales resumes have changed dramatically over the last 10 years, mainly due to changes across the "hiring landscape." Thus recording systems and database applications have taken over to embrace new techniques, systems, and processes.

Hath, (1997), asserts that Periodic inventory systems record cost of goods sold and keep inventory at its current balance throughout the year. Therefore, there is no need to do a year-end inventory adjustment unless the perpetual records disagree with the inventory count. In addition, a separate cost of goods sold calculation is unnecessary since cost of goods sold is recorded whenever inventory is sold. This is the main aim why such systems are well trusted to keep business owners informed of majorly the sales without a worry of stock deficits.

Room, (2010), states that, we have seen this method improve sales systems to turn poor results into a hefty 45% conversion rate of prospects into new customers. Lasting sales performance rarely comes from super-star performers. It comes from nice sales management systems. Good systems are reliable and they allow all of your sales people to improve and maintain their performance.

KAP, (2011), Having a well centered sales system not only manages records but also maintains decision makers ticking their boxes not their competitors'. Decision makers see their returns not through the competitor's eye but through the records preserved in the entire sales records availed from their record keeping systems.

2.2 Document Management Systems vs. Record keeping Systems

There is a quiet revolution occurring in information technology today. It's called "document management". Reports indicate that document management systems, designed to manage textual electronic information that may not necessarily qualify as records have been marketed as recordkeeping systems, and accepted by records managers as such, causing loss of context and evidential value in records "managed" by such systems.

Keith, (1994), noted that computer systems developed or purchased to manage electronic documents need to be more than just systems for tracking the physical location of the documents. They should manage documents over their complete life cycle, based on their value to the organization. Complex compound documents should be able to be managed as a logical entity now and in the future and even if they are migrated through many changes in technology. This requires that a number of document attributes are selected that best describe the document content and the context in which the document was used, and that these attributes are managed along with the document. In a computer file server environment the management of document attributes would need to be automated as much as possible.

Dollar, (2000). notes that, in North America at least, there is "considerable confusion regarding what constitutes an electronic record vis-a-vis what constitutes an electronic document" He goes on to explain: This confusion is heightened by the recent development of document management software systems, which focus largely upon individual and group development of draft material, versioning, review and approval, and correspondence tracking. One aspect of this ambiguity and confusion is an inadequate understanding of fundamental concepts of archival science and records management. Records are a subset of documents, which in turn are subsets of recorded information.

2.3 Databases as Sales Record keeping Systems

All the systems touched, deal with records generated in an office system environment (where networked PCs provide word processing, e-mail and group work capabilities as opposed to a database environment). But what about databases as recordkeeping systems? A lot has been written about databases, but practically nothing was found that analyzed databases and database systems from the point of view of evidence of transactions.

Ken, (1996), it is, however, possible to distinguish between two fundamentally different kinds of databases: those created solely for gathering or manipulating scientific data, and those which are an integral part of an agency's or organizations administrative transactions. The former kind lacks recording in the strict sense of the word, while the latter kinds of databases reflect transactions and potentially have evidential value. Consequently, they can be considered meeting the requirements for "recordness". A Swedish study has made an effort to explain the difference between records and data as they have been accessioned in the Swedish National Archives. Anders, (1995).

2.4 Strengths of the Automated Records Management Systems

The automated sales records management systems eliminate the exchange of papers containing records or tracking data between different individual within the organization. This may be achieved by collating all the data into one storage bowl and only guaranteeing access only by permit. Bill, (2003) listed the following strengths of automated sales records management systems.

- (i) Authentication capabilities
- (ii) Assigning views on very crucial data at different organizational level
- (iii) Automated systems are effective and efficient.

The proposed system however is to do away with the incessant problems associated with records management in Gayaza. Very crucial literature has been presented pertinent to records management systems and their performance.

2.5 Database Approach

A database is a collection of logically related files organized in a format that meets and satisfies organizational needs. A good database usually has a list of characteristics which maybe a yardstick for determining how well they can be depended on. These include accuracy, integrity, confidentiality and flexibility.

Gerald (1999) advises that Database is software that defines a database, stores data, supports query languages, produces report and creates data entry screens some of the most challenging tasks in building. These systems arise from the storage and data retrieval.

Initially programs solved complications for every application they did create; however DBMS provide solutions to these constraints.

According to O'Leary, a database in its most general sense is an electronically stored collection of data in a computer system.

According to David .S. Bowers, database s are not just fancy new files structures. They bring with them a whole new way of thing about data and what should be done about it. He says that new activities known as data analysis and data modeling have emerge to become the dominant component of application design.

The central idea behind managing data resources is getting hold of the organizational resources which support operations and management decisions. Proper management of data promotes the use of data as information.

According to Gordon (2003), solving the problem of data management entails both administration and technical factors, that's creating an effective organization structure and appointing a responsible authority called the database administration and using computer based facilities along with associated operating personnel and procedures.

Many organization needs guidance moving towards the approach. The database administrator must determine what database tool to make available within the organization .When investigating commercially, available systems of the organization must learn to evaluate them in light of their own needs.

2.5.1 Database Management Systems

This is an application that controls the structures of a database and access to the data. In a DBMS an entry change needs to be entered only once and the updated information is then available in any relevant file.

O'Leary says that all kinds of individuals use databases from recording students' grades to officers checking criminal histories, colleges, universities and other institutions use databases to keep records of their students and their courses. Also organizations employ these databases to manage their records and maintain employ information among others.

2.5.2 Database benefits

Admski (2000) says that automated database approach to data processing offers several Benefits over the manual way. These benefits include the following.

Increased productivity

The availability of data combined with tools that transform data into usable information empowers end user to make quick decisions informed decisions that make the difference between success and failure in the tabulate global economy.

Improved data sharing

The database helps in providing users access to more and better managed data. By providing such an access environment the sharing of database resources by multiple users is enhanced. Such access makes it possible for users to respond quickly to their environment.

Data Integrity

The database promotes an integrated view of organizational cooperation-Big picture. Thus by providing wider access to well managed organization data, it becomes much easier to see actions in one segment of the organization effect other segment.

Minimized data

Essentially data inconsistence exists when different versions of the same data appear in different places. For example data inconsistence exists when an organization sales department stores representative s named as "Thomas Bamunaoba" and the organization as personnel department stores the same personnel name as Patricia.M.Bamunoba. Thus by proper designing a database, the probability of data inconsistence is reduced.

Improved data access

By using database, it becomes possible to produce quick Ad-hoc queries. Recall that from database perspective, a query is a specific request for DBMS.

O'Brien (1990) looks at database administration to store the establishment and enforcement of policies and procedures for managing and strategic co operate resources. The collection, storage and processing of data is administered in such a way that data becomes a standardized resources available to all information systems in an organization.

The ability to retrieve information about a person is a key factor in successful Human Resource Management. Piers Cain suggests that paper personnel files are ones of the largest categories of records any organization can create. If no effort is made to reduce bulk, they can occupy a big area of storage space which might more profitably be used for office work.

A database is an organized collection of one more files of interrelated data and a database management package is a program used to create, maintain and manipulate access database. Another term Database Management System or its abbreviation DBMS is also commonly used. Originally developed for main frame computers, Database Management systems are now available for machines of all size

2.6 Management Information System

Management Information Systems have been used to record data concerning employees in various firms. Information recorded relates to employee's names, date of employment, designation and salary among other issues.

Hagg et al (1998) defines a management information system as a system that provides periodic and predetermined reports that summarize information. In an organization these information comes from a database that gathers and stores daily information. Management Information Systems are thus systems that process and create new information by manipulation existing information and presenting it to whoever needs it. Management Information Systems are also referred to as managing alerting systems because they are designed to alert people to the existence or problems or opportunities. However MIS rarely tell why a problem has occurred or

how to take advantages of an opportunity. Management information system provides reports in different forms which include.

1. Periodic reports

These are reports produced at a predetermined time interval that is daily, weekly, monthly and annually.

2. Summarized reports

These are reports that aggregate information in some way for example sales people, returns by product line etc.

3. Exceptional reports

These are reports that show only a subject of available information basing on some selection criteria for example reports showing people who did not meet their quotas, students with a given fees balance and many others.

4. Comparative report

These are reports that show two or more sets or similar information in an attempt to illustrate a relationship.

Whitter et al (1998), states that MIS is the application that provides for management –oriented reporting. Usually in a predetermined fixed format. Management Information is normally produced from shared database that stores data from many sources including transaction processing systems. Computerized information systems have been known to enable easier operations in organizations as they result in faster access retrieval, update and storage of information in database

Haag (1998) states that Management Information System deals with planning for development management and use of information technology tools to perform all tasks related to information processing and management information is a driving force defining the success of creating products and services that people want.

Today more than ever, businesses are using information to gain a comparative advantage. Businesses understand that they do not know can become a source of advantage to their competitors and those that have known the true values of information are succeeding.

Information systems

Kendall (2004) analyzed the roles of database as being able to provide long term memory for information systems; the long term memory contains entities and relations. Micheal (2004) says that databases are not the only components of information systems but they also include people, procedures, input, output and software among others.

Vermaat (1999) relate database as part of information systems hereby defining the various components of an information system. He states that a system is a set of related components that work together to accomplish a common objective which is realized through interaction with the environment and performing related functions.

CHAPTER THREE

Methodology

3.1 Introduction

This chapter explores and demonstrates the approaches and a set of methods that were used to achieve the research objectives. These include; observation, interviewing and reviewing related literature. It also includes analysis, design, testing and validation which are in depth explained below.

3.2 Interviewing

This is the vastly used method of data collection and this involves direct interaction between the researchers (interviewers) and Dejavour Supermarket staff and management in this instance. Structured interview questions were drafted and used during the interview sessions. This was all aimed at obtaining problems that the intended system seeks to address.

3.2 Reviewing Existing Literature

Various books that contain the content related to this research topic will be read and then write notes about the same and indeed the software requirements. The internet will also be the main information base shall extensively be used to come up with most requirements needed to start off the project.

According to Lewis and Loftus, (2003), Software requirements specify what a program must accomplish, they indicate the tasks that a program should perform, not how to perform them. Furthermore, they stated that “We create a program to solve a particular problem. Requirements are the clear expression of that problem. Until we truly know what problem we are trying to solve, we can’t actually solve it”.

3.3 System Analysis and Design

This will involve the examination (analysis) of the proposed system and the formulation of models that comprises of entity relationship models, data flow diagrams and a data dictionary.

3.4 System Implementation

The Dejavour supermarket Management System was implemented using My Structured Query Language. (MySQL), Hypertext Pre-processor (PHP), JavaScript, cascading style sheet and hyper text markup language (HTML). CSS controls text, font, color and size, HTML supports

designing of user interfaces which users use to insert data, PHP was used to create connections to the database and JavaScript was used to enhance interactivity between interfaces.

3.5 Prototyping

Prototyping is a way of making a draft of the intended system for the purpose of testing if all the user requirements for the system are all met by the proposed final system.

In system design, and development, integrity checks have to be performed to eliminate inefficiencies in system performance. To avoid this, revision of the source code will be vastly considered and the entire system. After all this, the system shall be put to use.

CHAPTER 4

System Design and Implementation

4.1 Introduction

This chapter discusses the processes of designing and implementing the system. The chapter also looks at the findings on the current system its weaknesses and strengths which helped us to come up with the requirements for the new system.

4.1.1 Current System

The system for recording sales and stock data at Dejavour Supermarket is inefficient in helping quick decision making due to delays in availing the necessary data and information. Product Sales and stock records are done manually on paper and each receipt is stapled alongside its particular sales transaction, reference to this receipt takes a long time with a given period of time. Tracking and auditing payments was very difficult due to loss of relevant data especially the receipts and transaction papers. These inefficiencies have led the researchers to develop a Supermarket Management System for Dejavour Supermarket.

4.2 System Evaluation.

The current system has a number of weaknesses that are retarding the product sale/ stock evaluation and management of Dejavour Supermarket. Dejavour Supermarket takes long to measure its competitive advantage against its competitors who are wide spread across the country because of the delays caused by this manual based system of supermarket stock and sales records. It's because of these weaknesses that we decided to develop a Supermarket Management System for Dejavour Supermarket.

This involves use certain methods like Flow Chart diagrams to analyze the current system land Sales information flow and determine the weaknesses of this system.

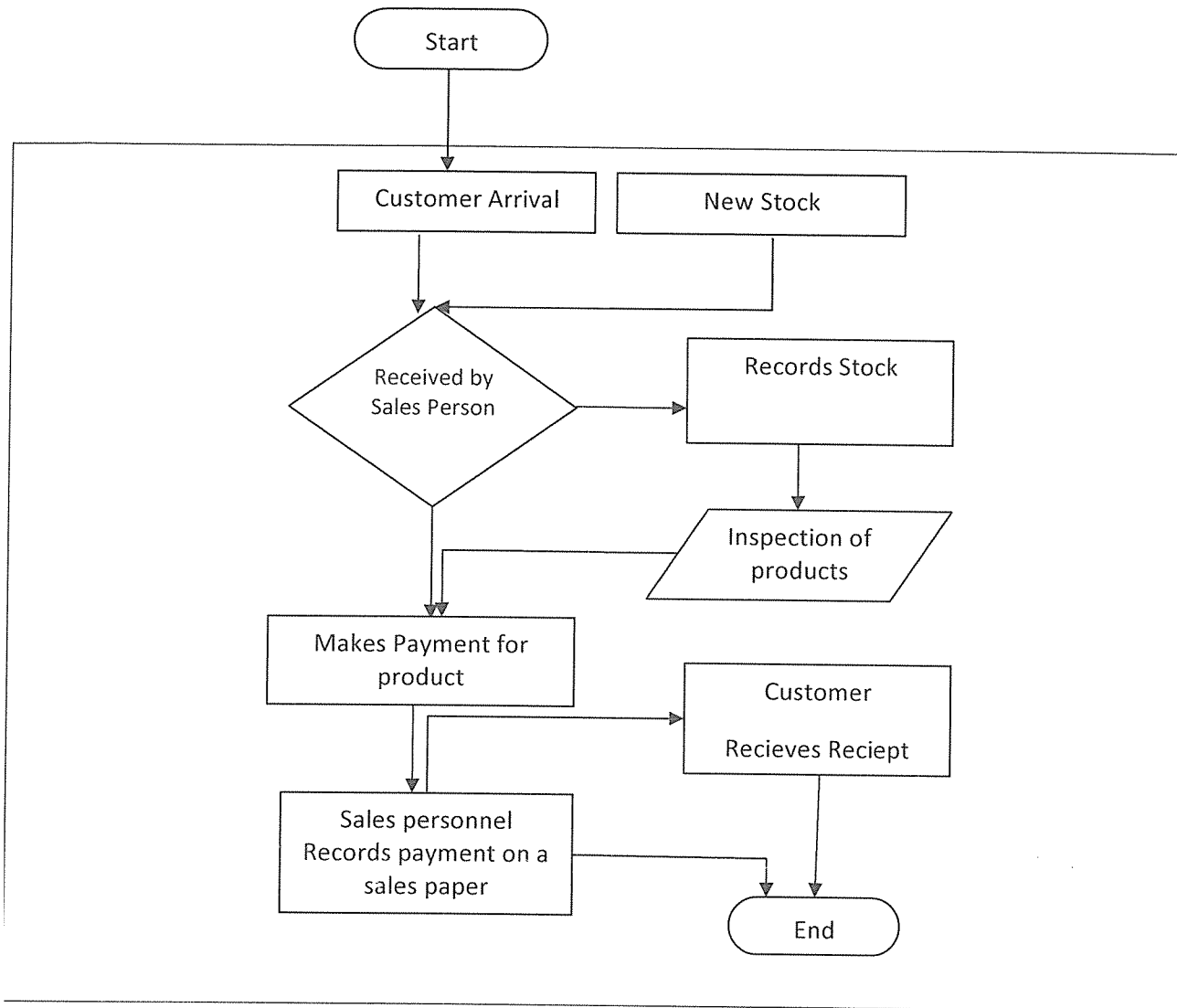


Figure1: Flow chart diagram of the existing system

4.2.1 Weaknesses derived from the system flow.

- i. There are inefficiencies caused by several customers coming at the same time especially in handling recording of their sales data by writing papers.
- ii. Handling queries is not easy especially checking for the paper records for items bought after some long period of time.
- iii. The management finds it hard to check these records to audit or view totals to make decisions about the supermarket performance.
- iv. The system leads to monotony of writing and sometimes certain sales are not recorded.

Because of the above mentioned problems with the current system, a need to come up with a Supermarket Management System for Dejavour Supermarket.

4.3 Requirements Specification Document.

4.3.1 User requirements

User requirement is one of the most important aspects in system development therefore the researcher put it into consideration on how the system can meet the expectations of the users. Therefore, the designed system should have the following:-

- Users shall be able to navigate through information stored in the database or select some information from it.
- The system will be designed with well-defined interfaces that allow users to freely and rightly interact with the system.
- The system shall be designed in a way that it is easy to update and easy to use.
- The users shall be able to get a summary of the reports about the inventory at any given time.
- The system shall provide meaningful feedback whenever users make errors by correcting the user incase of false use of the system tools, data and information.
- The system should be faster, to accept data, process it and return results with in the expected period.
- The system will appear simpler, effective and more securable than the old system
- The system will not require comprehensive training to use, preferable not differing in terms of operation from the old system by a big margin

4.3.2 Functional Requirements

These are the functions that are supposed to be performed by the developed system;

- I. Quick detailed and summary report generation
- II. Offer security for data in the system
- III. Easy and user friendly interface for data entry
- IV. Quick view of land bookings and sales hence save time
- V. Automatic search and view of available inventory stock details.
- VI. Quick reports to facilitate decision making
- VII. Fast system in processing inventory sales or stock recording tasks
- VIII. Avoid invalid input or mistakes after recording data.

4.3.3 Non Functional Requirement

These are the results gained as a result of the system usage by each stake holders and they include some of the following;

- i. Promote high integrity for checks and balances requested from the system
- ii. Easy to learn and use system.
- ii. User friendly usage.
- iv. Easy authentication and validation.
- v. Prevention of errors and interruptions of records during acquiring or selling items.
- vi. Security of entered data about a sold or received items.
- ii. Availability of the system and its services.

4.3.4. Software Requirements

Software	Minimum software requirements
Operating system	Windows 2000, NT, XP and vista/Windows 7
DBMS	Wamp Server 1.5/2.0 (MYSQL)
IDE	HTML, PHP, JavaScript, CSS
Browser	Internet Explorer, Mozilla Firefox, Flock XP

Table 1: Software Requirements

4.3.5. Hardware Requirements.

To run the application the minimum computer hardware requirements needed are;

Hardware	Minimum software requirements
Hard disk	5GB free space plus operating system space
RAM	64MB or higher
VGA	1024 x 768 Mega pixels
Processor	Clock speed of at least 700MHZ or above, Pentium III, IV,M or Intel Celeron M

4.3.6 Operational Requirements

Training of the staff/Users on the usability of the system and functionality of each of the components of the system that they are supposed to work on in the system.

It is required that the machines on which the system is installed be kept in a dust free environment and that regular backups be done for purposes of safeguarding against any system failure or data loss.

Maintenance and editing of the system is also required for the system to function properly and remove any errors that can occur during system usage since some users can misuse the system as it is open to all company users.

4.4 System Design.

This comprises of tools and methods especially diagrams used to analyze design and develop the system. The design used entity relationship diagrams (ERD), Data flow diagrams (DFD and System architecture diagram (SAD).

4.4.1 Logical Design

The Entity Relationship Diagram (ERD), this involves the relationships between all external entities of the system and the participation of each entity in the relationships.

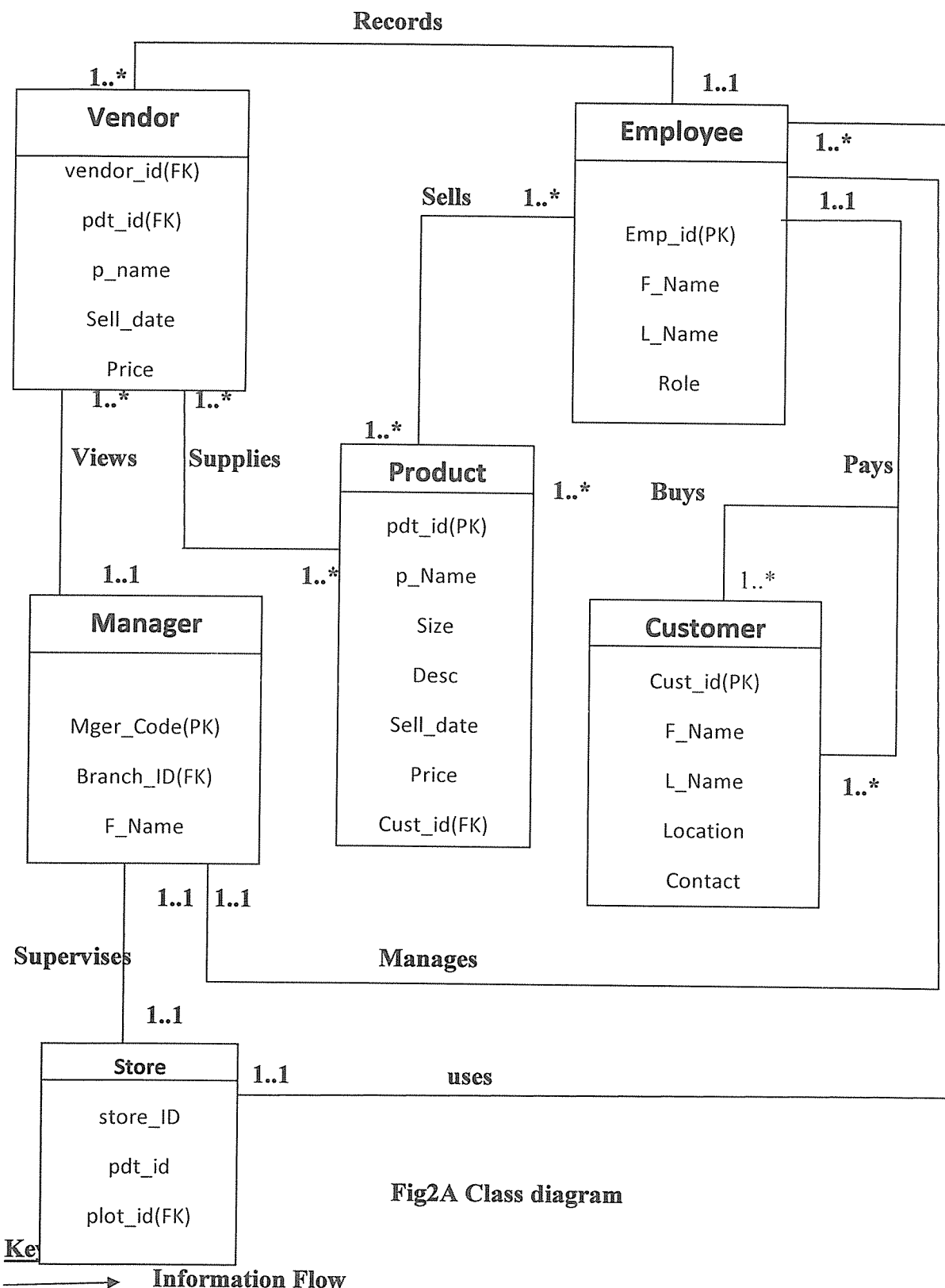
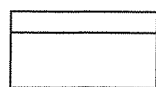


Fig2A Class diagram



Entity

FK..... Foreign Key

PKPrimary Key

Major Entity Relationships

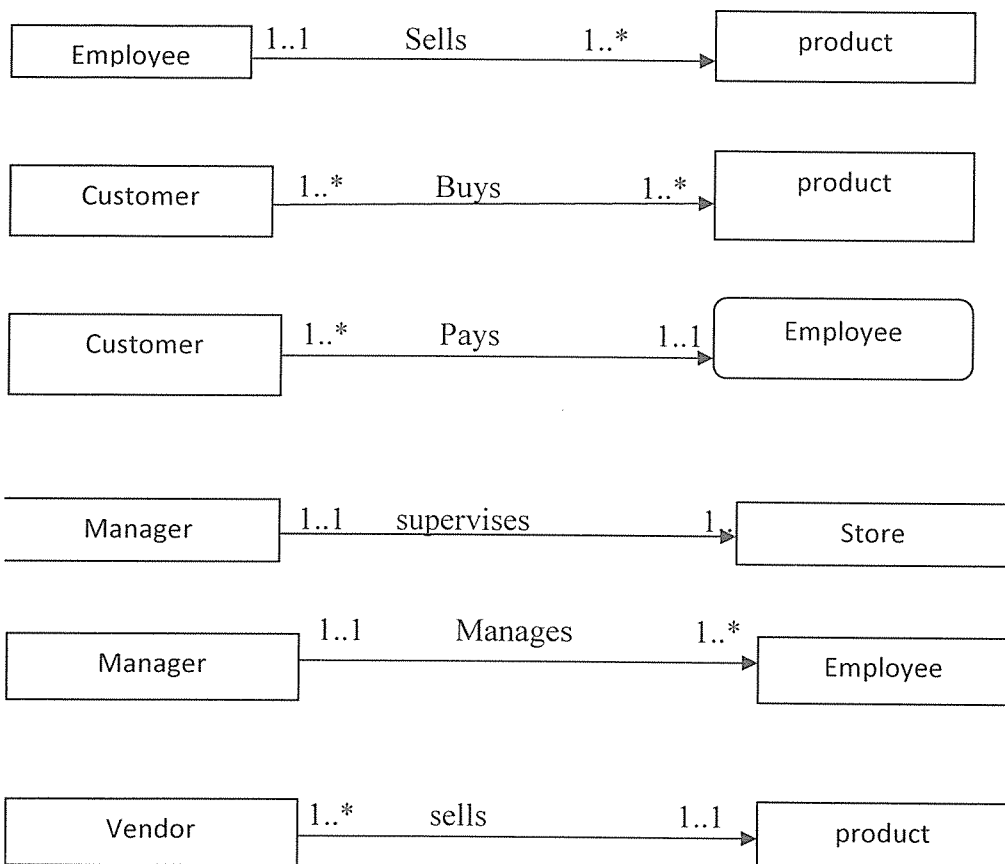


Fig3 Major Entity Relationships

Data Model

This can be best achieved by using a Level 1. Data Flow Diagram.

It shows interactions between External entities with Processes and Data stores (database).

Processes involved are;

- Employee Profiling; This includes Login, Identification and authentication
- Record New Estate/Land
- Transact Sale of Land Plot(s)
- View Land Sales and available plots
- Exit System

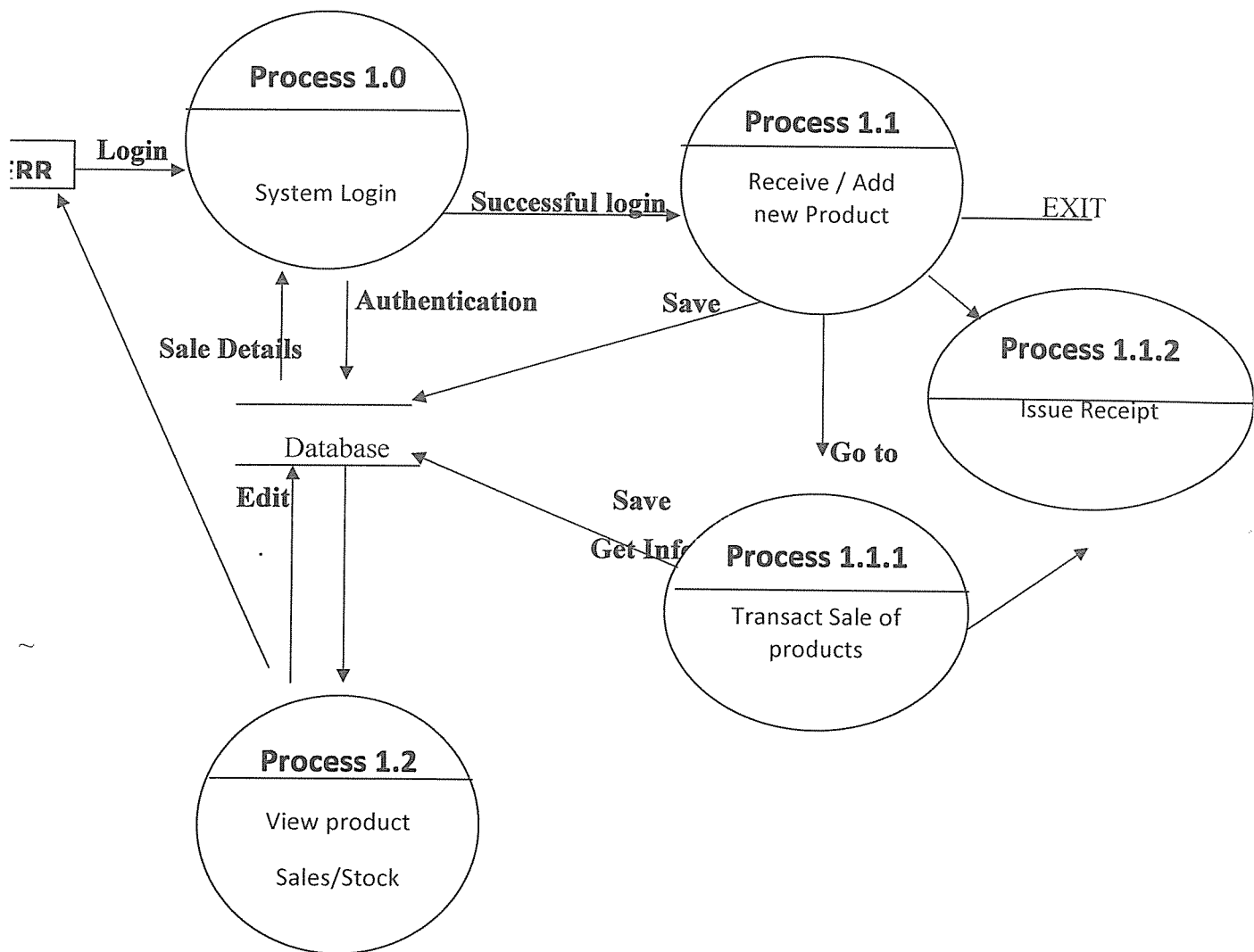


Figure 4: Level 1 Context level Diagram.

4.4.2 Conceptual Design

This involved identification of the system entity types and their attributes in the system.

Major entity types include;

- Product
- Employee
- Vendor
- Manager
- Store
- Customer

4.4.4 Physical Design

Data Dictionary

This is a repository of data about data in the database; It contains data that describes data used in the database.

Field	data type	Length	description	rules
UserName	Text	15	Login Name	Not Null
Password	Text	12		Not Null
cid	char	14	Customer ID	Primary Key
Cname	Text	30		Not Null
loc	Text	25	location	Not Null
Price	int			Not Null
Purchase_Date	Date			Not Null
Estate_Name	Text	18		Not Null
dob	Date		Date of birth	Not Null
Mger_code	char	6	Manager ID	Primary Key
Emp_ID	char	2	Employee ID	Primary Key
Plot_id	Text	8		Primary Key
Branch_ID	char	6		PK, Null
Sell_Date	Date			Not Null

contact	VarChar	25	Customer contact	Null
Duty_Time	Date-Time		System login time	Not Null
size	VarChar	8	Plot size	Not Null
ampaid	int		Amount paid	Not Null

Table3: Data Dictionary

4.5 Implementation

This chapter discusses the processes passed through to come up with a full working system. The system was implemented using HTML and PHP (IDE) for the front end interfaces, PHP with SQL is further used to connect the front end interfaces to the MYSQL Database.

4.5.1 HTML/ PHP page design (Front End)

The Login page and other interfaces were created using HTML and PHP languages. It contains text fields to input login information to access interfaces in the whole system. The System has two main interfaces which have links to their respective links. The main interfaces include Sales view and Administrator (Management) view.

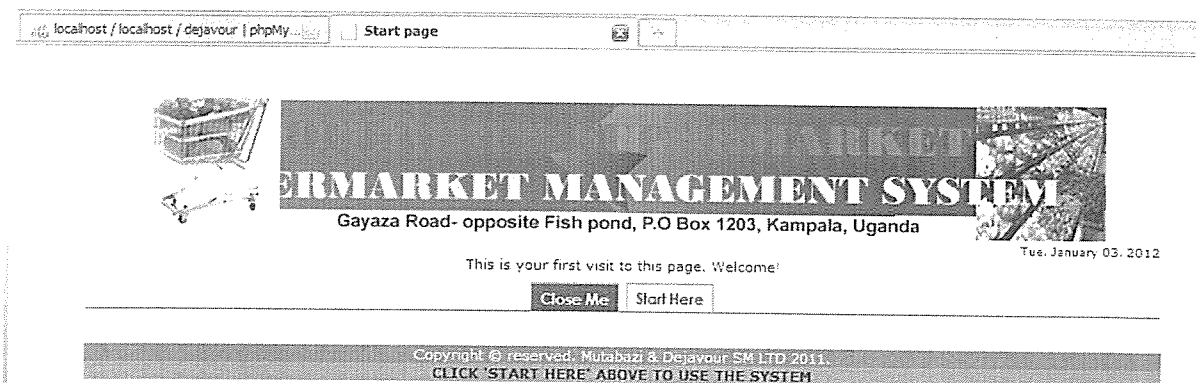


Fig.1

Start page and Login Page

Click on the start here link to to man Login page.Its main purpose is to be active on a logout by any user from the system

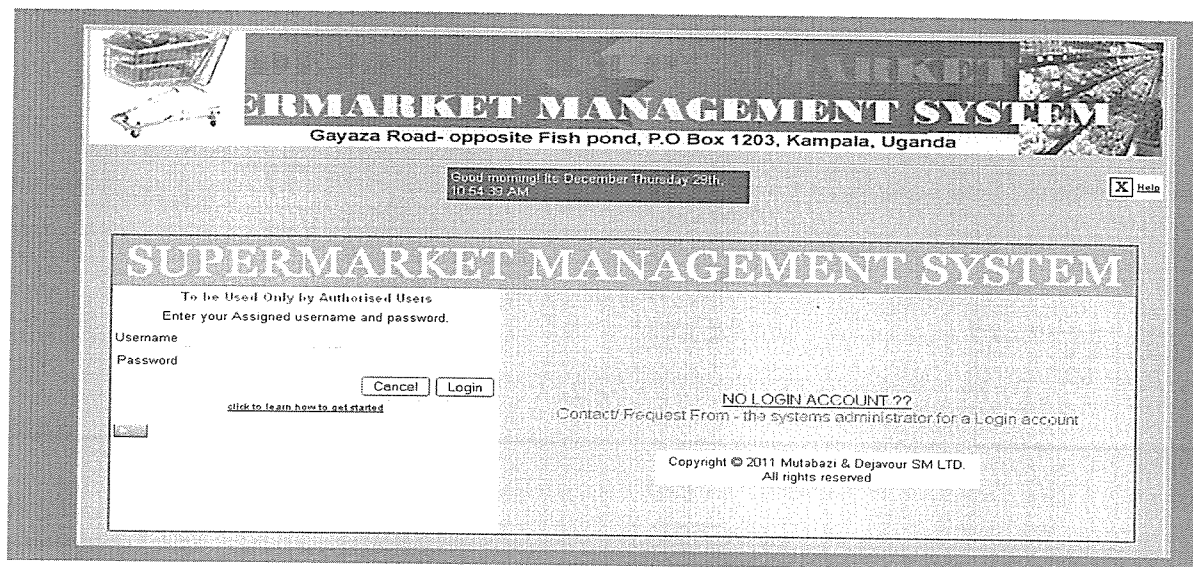


Fig. 2. Login

Input your login details or click on help to know how the login button to enter

Sales View

This interface carries out the main day to day duties of the company. It has interfaces with forms to record sales data and purchased stock. It also has reports about this recorded data.

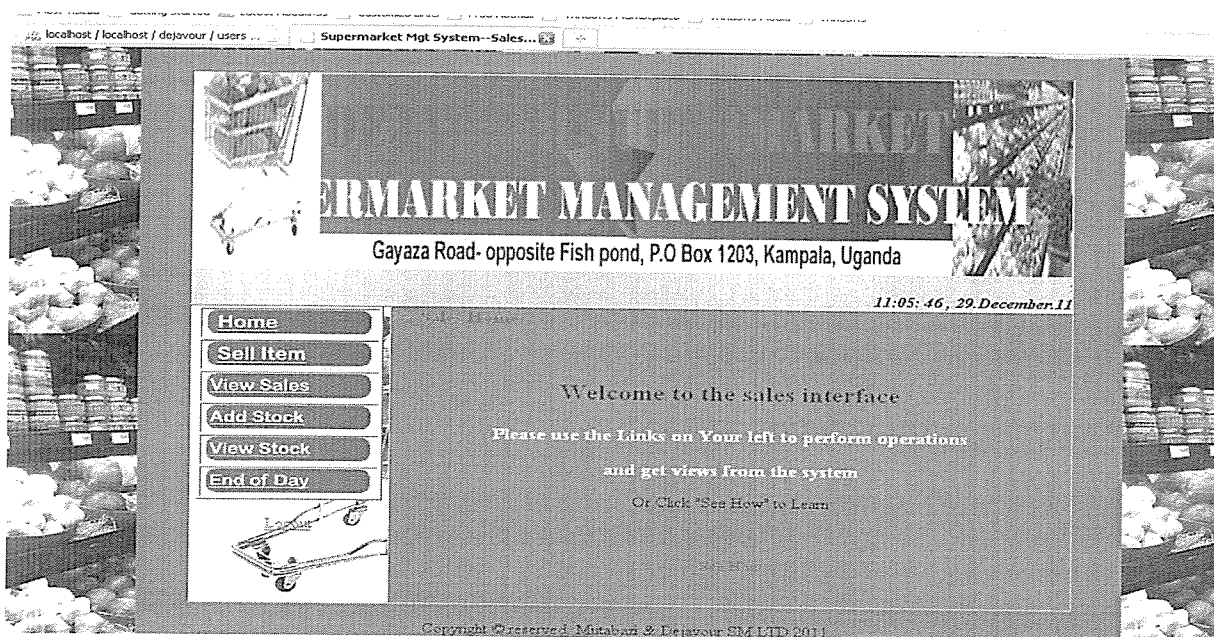


Fig 3

Main sales page for all counters

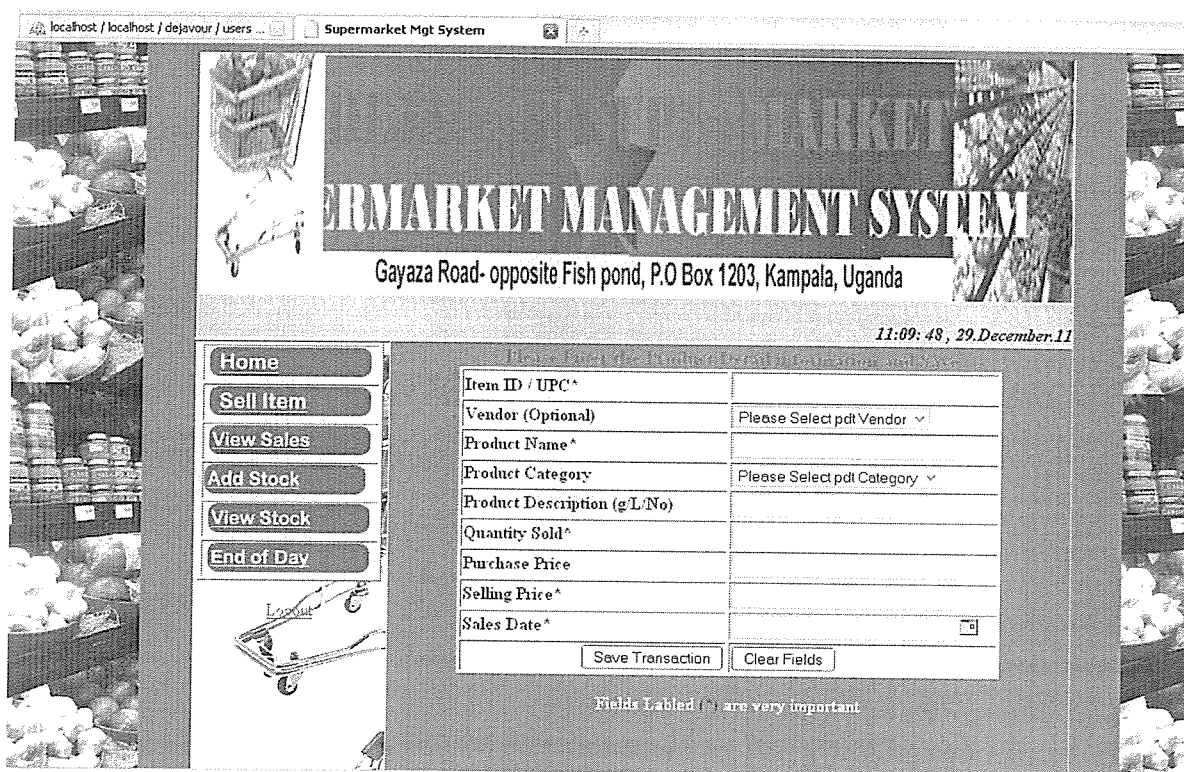


Fig 4

A sales insert page under the sales interface

Administrator (Management) View

This interface was created to facilitate creation and deletion of system users for the developed system for Dejavour supermarket.

4.5.2 Database design (Back End)

The database was implemented using Wamp server MYSQL console version 2.0. It is accessed using MYSQL DBMS. The database is designed using SQL statements like create database, create table, insert into, delete from, update, select among others. The database named '**dejavour**' has tables; major ones include; sales, stock, tbl_important, Users, License.

The front end interfaces insert and retrieve information from this database for various purposes.

Chapter 5

Presentation of Findings

5.1 Introduction

This presents the findings of the project, findings include the results of every step of the project undertaken. The steps include description of the system interfaces in form of screenshots of the Supermarket Management System for Dejavour Supermarket LTD.

The project was carried using a waterfall system development model. This follows a step by stem structure to come up with a working system.

The researchers started by data collection using observation and interview. This data was analyzed to come up with the system requirements and the design. Design was achieved using a Flow Chart Diagram, Entity Relationship Diagram (ERD) and Data Flow Diagram (DFD).

This facilitated a smooth path to develop/ implement the system. The system has both a front end and a back end.

5.2 System description

This includes a discussion of both the front end and the back end of the system

Front end Interfaces

This is implemented in HTML, PHP, CSS and JavaScript, it includes; The Login page, the admin interface, sales interface and entry screens.

The Login Page

This page was implemented to enhance security for the system. Unauthorized users are not allowed to access system. This not only prevents erroneous entry by unqualified staff but also allows secrecy of the company's data. It is this page that directs users to their specific interfaces.

Chapter 6

Summary, Conclusion and Recommendations

This project was successful in implementing the goals stipulated earlier in chapter one of this project report. The system allows easy and secure recording of supermarket stock and sales

information and generates a number of reports for management's quick decision making and information security.

6.1 Summary

The main objective of this project was to develop a Supermarket Management System for Dejavour Supermarket LTD. This was achieved in the following ways;

The researcher got a concept on a Supermarket Management System for Dejavour Supermarket LTD as a case study because the company lacked and urgently needed this system.

We used observation and proposal to achieve this objective. This helped to come up with user requirements that guided us through analysis, design and implementation of the system.

The system thus solves the problems that were at hand at Dejavour Supermarket in providing well organized interfaces to record inventory stock and sales information and giving a number of reports to help management to monitor the sales and make quicker decisions.

6.2 Conclusion

The study identified the major problems faced by Dejavour Supermarket LTD due to use of a manual based Supermarket Management System and attempted to solve them by developing a computer based with database Supermarket Management System. The system solves the problem of large space required to store box files and paper, too much time taken to get a particular record of information by providing a user friendly system interface to record and easy to retrieve information interface as well as a database to store the land sales information.

6.3 Recommendations

Dejavour Supermarket LTD should use this system to help them manage their inventory stock and sales records easily, securely and efficiently.

System backup should be done regularly to avoid data loss or system corruption effects

References

- Brown, A.M. (2002). Information Systems: A requirements analysis. *International Journal of Information Systems*, **21**: 213 – 225.
- Writers Room, (2010-12-24). Sales management system: *The Way To Create A Higher Sales Management System For Your Business*.

- II. Laudon, K. C., Laudon, J. D., (2002). *Management Information Systems, Organization and technology*
- V. Ken Thibodeau, “*International Research: Appraisal and Preservation of Scientific Databases*” (Paper given at the XIII International Congress on Archives, Beijing, 1996).
- ✓. Bill, I. (2003). *The System of Record in the Global Data Warehouse*. Retrieved on 11/02/2011 from <http://www.dmreview.com/issues/20030501/6645-1.html>.
- I. Office of Information Technology(2008), *Information Management Framework Guidelines*, pp.4-5, retrieved on 26th June 2011 from <http://www.smallbiz.nsw.gov.au/smallbusiness/Resources/Business+Tools/Glossary+of+Business+Terms/>

APPENDIX A: Interview guide

Introduction

Dear Respondent

As research of information technology in St. Lawrence University, we are required to carry out academic research with view of developing a management information system solution to cater for supermarket management system.

The objective is to develop user-friendly computer application that minimizes the problems of manual operations of super market Management information system of Dejvour super market.

Kindly avail me with necessary information by filling out the form, the information given by you shall be treated with confidentiality and will not be released to unauthorized persons. Further more, the results derived from the analysis of data shall be regarded confidential and will only be released on request to authorized persons .

INTERVIEW GUIDE

1. How do you get details of an employee /staff?

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.....
.....

2. What kind of employee /staff records do you maintain?

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.....
.....

3. How are the details (data) for a particular employee edited, retrieved, whenever they are needed?

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.....

4. How do you update employee records when a need arises?

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5. What are some of the challenges encountered in using the manual system of record keeping

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6. What security measures do you employ to ensure data of employees is safe?

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.....

7. Do you support the idea of implementing a computerized Information System in managing employee records?

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