

**POULTRY RECORDS MONITORING SYSTEM FOR UGACHICK POULTRY
BREEDERS**

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DECLARATION

I Akatwijuka Isaac hereby declare that this project report is my original work and has never been submitted for any award in higher institutions of learning.

Akatwijuka Isaac

Signature 

Date 9. Aug. 2017



DEDICATION

I dedicate this research report to the almighty GOD who has been the giver of knowledge and wisdom, towards the completion of this course. Glory to you Lord.

APPROVAL

This is to certify that Akatwijuka Isaac BIT/3515/153/DU of Kampala International University has carried out the final year research project to fulfill the requirements for the award of degree of Bachelor of information technology under my supervision

Signature  Date 11/8/2017

Eng. Generous Begumisa

Supervisor

LIST OF ACRONYMS

BIT	Bachelor of Information Technology
CPU	Central Processing Unit
ER	Entity Relationship
GDP	Gross Domestic Product
SQL	Structured Query Language
ICS	Institute of Computer Science
MITM	Man- in-the- middle
PC	Personal Computer
PDF	Portable Document Format
HTP	Hypertext Preprocessor
RAM	Random Access Memory
SSL	Secure Socket Layer
TLS	Transport Layer Security

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ABSTRACT

My research was about poultry which urged me to think about a poultry monitoring system where I came to the consensus of making it a records desktop platform or system that can be accessed through a computer over a network with the above research I discovered that Ugachick breeders Mbarara branch would best suit me as my case study. All was a result of three strong members with an idea and motivation to bring up drastic changes as regards poultry farming in Uganda. It was after identifying the case study that i gathered information that led me to formulate my problem statement. Under my problem statement I identified major problems to handle which later led me to specific object and then general objectives.

With the above information gathered, the methodology that would be best and more achievable to me was Prototyping methodology reason being it is process which allows users to create portions of the solutions to demonstrate functionality and make needed refinements before developing the final solution and also the requirements are quickly converted to a working system since it involves close collaboration between users and developers.

As for my results i was told to add more functionality to system especially database part of due to the fact that it was not secure that is it could be accessed by any one. I was advised to change the colors, logo and put their images.

In conclusion therefore, the computerized records monitoring systems varies functionalities ensures development of the farm since it's able to capture records and generates advisory reports that enable the management to critically analyses and developmental decisions.

I concluded by recommending a mobile application in support to the desk top system to ease communication and mobility of transactions and hard ware components to work with the system for example an external device that would test the bird's egg and determine the bird's fertility, temperature, breed, and others.

CHAPTER ONE

BACKGROUND AND INTRODUCTION

1.0. Introduction

Poultry are domestic birds kept by humans for the eggs they produce, their meat, their feathers, or sometimes as pets. The word "poultry" comes from the French/Norman word poule, itself derived from the Latin word pull me, which means small animal. The domestication of poultry took place several times and years ago. This may have originally been as a result of people hatching and rearing young birds from eggs collected from the wild, but later involved keeping the birds permanently in captivity. Although some birds are still kept in small flocks in extensive systems, most birds available in the market today are reared in intensive commercial enterprises. Poultry is the second most widely eaten type of meat globally and, along with eggs, provides nutritionally beneficial food containing high-quality protein accompanied by a low proportion of fat. (<https://en.wikipedia.org/wiki/Poultry>). The term poultry also refers to a variety of birds types raised on farms for food, feeder, or entertainment. Other poultry birds include ducks, geese, ostriches, turkeys and many more.

(<http://articles.extension.org/pages/72904/what-is-poultry>)

Monitoring is regular observation and recording of activities taking place in project program. It is a process of routinely gathering of information on all aspects of the project

Monitoring is to check on all the project activities are progressing. It is observation; - systematic and purposeful observation. Monitoring also involves the giving of the feedback about the progress of the project to the donors, implementers and beneficiaries of the project. Reporting enables the gathered information to be used in making decisions for improving project performance. Purpose of monitoring is to help in planning and implementation. In addition monitoring provides information that can be used in;

- Analyzing the situation in the community and its project
- Determining whether the inputs in project are ill utilized
- Identifying the problems facing the project and finding the solutions
- Ensuring that all the activities are carried out properly by the right people and in time
- Being lessons from one project experience on to another
- Determine whether the way the project was planned is the most appropriate way of solving the problem at hand.

1.1. Background

Ugachick poultry breeders was established in 1992 and it has evolved a vertically integrated poultry producer. Ugachick poultry breeders (Mbarara) are a private Ugandan family owned and a run business. Which is a child company of the Uga Chick Foundation based in Kampala Makidye with the branch Located in Mbarara Municipality along Mbarara High Street, plot 61.

Anon, 2016, said that Ugachick Poultry Breeders Limited revamps poultry industry in Uganda through production of day-old chicks, high quality animal feeds and other poultry products especially eggs and chicken which are on high demand in neighboring countries like South Sudan, DR Congo and Rwanda. It is also one of the leading poultry farms in the country, that is, it is running a processing plant, a breeder farm (broilers and layers) hatchery, feed mill and a broiler farm with the aim of availing high quality chicken products. Latest official data published in the Statistical Abstract 2011 says that the number of poultry increased by three percent. I noticed that many transactions are made and yet they few workers that makes work tiresome and at times incomplete work is the result yet much is supposed to be achieved in short possible time with the a delay of services to the customers. This calls for a communication platform is between workers and different heads of departments.

A great need to keep statistical data such as how workers are paid, also keeping track of electricity bills, water bills and others so as to tell where more expenses and fair expenses are made together with respective departments.

1.2. Problem Statement

Ugachick poultry breeders has been facing a problem monitoring expenditure, labor force, maintaining costs, management and generating supervisory reports of the farm. This has led to having insufficient feeds at the farm, poor balancing of records, improper accountability resulting to financial losses at the farm, data insecurity. Therefore this project aimed at designing a poultry records monitoring system that would make it easier for poultry managers to capture information and generate reports concerning daily, weekly, monthly reports on activities irrespective of the location and this project also allows backups of records which is a secure measure in case of fire or theft, records are to be kept in database which makes them safer.

1.3. General objective.

The main objective was to design and develop a poultry records monitoring system that can be used to track the activities such as monitoring expenditure, labor force, maintaining costs, management and generating supervisory reports of the farm.

1.4. Specific objectives

1. To study the current system and identify the loopholes at Ugachick Mbarara
2. To gather and document system and user requirements for Ugachick Mbarara
3. To design a poultry records monitoring System for Ugachick Mbarara.
4. To test and validate the designed system at Ugachick Mbarara

1.5. Research questions

1. What is the current poultry records monitoring systems and what are the loopholes?
2. Which system and user requirements are needed to develop the system?
3. How will the poultry records system be designed at Ugachick Mbarara?
4. Which test and implementation methods can be used for the new system at Ugachick Mbarara?

1.6. Project significance.

Once accomplished the following will be the outcomes of this poultry farm monitoring system;

To the customers

Convenience. The monitoring system will enable the customers to carry out transactions like making purchases on feeds, drugs, equipments wherever they are without first going to the farm premises.

Time saving. The system will enable the customers carry out their transactions wherever they will be without going to the firm.

To the firm

Competitive advantage: The monitoring system will enable the firm management to favorably compete in the farming world since most farmers prefer paper work compared to computerized record taking (provides illustrations for firm progress) which can be misplaced or lost. Timesaving which leads to out-competing other poultry farms

Capture information: It will provide a platform for record capturing that will be used in carrying out accountabilities of the farms daily, weekly and monthly performances of the farm that would eliminate problems that result from improper record taking such as losses, poor accountability, embezzlements, lack of poultry feeds. Various notifications to poultry farmer as reminders on various activities within the farm such as bird vaccination, feeds purchase.

1.7. Scope

1.7.1. Physical scope

The area scope was limited only to Uga Chick poultry breeders Mbarara branch to avoid too much complexity in research findings.

1.7.2. Technical scope

The hardware tools

The system was developed using a personal computer with the following hardware Specifications;

- 6Intel(R) Celeron(R) CPU N2820@2.13GHz 2.13GHz
- Memory (RAM): at least 2.00GB.
- System type: at least 32-bit operating system.
- Flash disk to aid in data transfers
- 200 or higher hard disk drive

The Software tools

- Workbench for databases/ visual paradigm.
- Notepad++ and notepad which are text editors.
- WAMP server is used to run the databases.
- MySQL is used to connect the server to the database.
- PHP and HTML for functionalities and interface

1.7.3. Time scope

The project took a period of 5 months.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction:

This chapter gives a review of what other academicians, scholars and researchers have written about the topic under investigation, so that the researcher can learn from experience of others, support my case, with various reviews, and show how this topic fits inside the context of what has been done before.

2.1 Analysis of the current poultry records monitoring system

2.1.1 Records Management

The ISO 15489: 2001 standard defines records management as "The field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records, including the processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records".

ISO 15489:2001 states that records management includes:

- (i) Setting policies and standards.
- (ii) Assigning responsibilities and authorities.
- (iii) Establishing and promulgating procedures and guidelines.
- (iv) Providing a range of services relating to the management and use of records.
- (v) Designing, implementing and administering specialized systems for managing records.

2.1.2 Existing record keeping system

With poultry record keeping system, tedious tasks like filing papers, storing records and backing up your system can become things of the past. Update of records is not easy right from the barn or coop so there is need to worry about losing information between your flock and the office.

2.1.3 Challenges of a manual poultry records monitoring system.

Data is not always reliable as it is hand written and some human errors might have occurred example wrong telephone number.

Retrieval of data is very slow as it has to be searched in lots of registers and this wastes lots of time.

Mostly data is kept in registers and these are stored in filing cabinets which consumes a lot of space.

Many times duplication occurs as workers find it hard to keep track the bundles of registers

2.2 System and user requirements for the records monitoring systems

Server set ups with the emerging new technologies, there have been requirements that go with the workability of the application, If you're using a records management system for example provided by a third party, they will be the ones responsible for storing all clients data and keeping it safe. This can be solved by sensitizing users about the security measures in records systems

2.2.1 Requirements analysis

During the feasibility study, an analysis was carried out to establish the basic requirement for the development records management system. The availability of necessary requirements and the commitment of the management to invest in this project was a key factor to the success of the project information system depends on such factors as;

- (i) The environment in which organization must function.
- (ii) The organization cultures and policies.
- (iii) The type of organization i.e. political, business or government

With our poultry record keeping software system, the user against anytime, anywhere access to important information:

- Health records
- Reminders for upcoming flock events
- On-farm food safety program records

2.2.2 Security requirements

Keep poultry houses locked; secure from the inside when working inside.

The resident flock manager should have protective clothing (including shoes, boots, hat and gloves) when caring for flocks separate from clothing worn off the farm.

The flock manager and other caretakers should not visit other poultry farms/flocks without taking adequate bio security measures.

Do not allow visitors in or near the poultry houses.

Essential visitors such as poultry catchers, repairmen and service personnel must put on protective outer clothing, including boots and head gear, before they are allowed near the flocks.

Tools and equipment carried into the poultry houses should be cleaned and disinfected before entering or leaving.

2.3 Advantages and disadvantages of Record Management Systems

2.3.1 Advantages of Record Management Systems.

A sound records management programme is advantageous in a way that;

- A well-organized file plan enables an organization to find information easily. Records that are correctly filed and stored are easily accessible, and this facilitates transparency, accountability and democracy in a computer system;
- the orderly and efficient flow of information enables the organization to perform its functions successfully and efficiently;
- authoritative and reliable records are created and maintained in an accessible, intelligent and usable manner to support the business and accountability requirements of the organization;
- efficiency and economy are ensured by eliminating unnecessary duplication of records;
- a retention and disposal programme ensures that the organization maintains only those records it really needs for functional purposes; and
- Controls are exercised to ensure that only authorized persons have access to the information, thus preventing information and/or the records themselves from being stolen or damaged. This ensures the protection of privacy and confidentiality, and prevents the inappropriate disclosure of information that could harm the organization or infringe the privacy rights of individuals.
- Functions do not change over time
- Files can be easily identified and used without affecting the file plan classification
- There is a greater spread of ownership
- There is better search and retrieval of information
- The transition from paper to e-systems becomes simpler and more transparent
- New functions can be added

- Work processes are identified and mapped
- Retention calculation
- compliant services to larger service oriented architectures Access controls
- To achieve broader information sharing. This is the direction security classification markings
- That the industry is taking to achieve open and improved
- Information sharing. Management of records stored in electronic formats
Management of emails and attachments in electronic formats
- Linking of records to supporting materials

2.3.2 Disadvantages of Record Management Systems.

- Implementing such a system across an institution or business requires a cultural shift in the organization and attitudes. It also requires confidence in the systems in place. It is both an organization and a people issue.
- To the 'first-timer' the relationship between the organizational structures in Departments within the business which is easily understood does not relate immediately to the corporate file structure by function. This appears to be an intellectual abstraction rather than a business tool. The curious thing to say is that once in place such a system it becomes almost second nature, because it removes the uncertainty of 'What shall I call this, and where shall I file it so that I can find it again?'
- The major hurdle to be overcome is the perception that work is 'my work' rather than part of a bigger business process which must be shared (and in practice usually is). The key is not who owns the work, but how the work is done.
- Older ways of organizing files by subject, creator or department become irrelevant, and the feeling of personal loss of control of file taxonomy has to be counteracted by making it easier to retrieve and share all information.
- Unmanaged, out-of-date designs can't be trusted, causing costly redesign work.
- Uncontrollable process variables leading to inconsistent client needs and expectations.
 - It is again disadvantageous that only computer literate who may be able to use the information system and it can only through training that one can use the system.

2.4. Testing and Implement a New System

The introduction of IT resources, such as computer-based records, clinical information systems and records management systems can help to improve the quality of public service.

It can also minimize costs and ensure easy access to office records (Davidson 2000:196 citing the US Office of Technology). It is only a small number of organizations that changed to a completely paperless business by

reengineering their business processes through the implementation of electronic business operation. This is done by imaging and cataloguing all paper records and managing them using a corporate database. Paperless dealing is about removing paper-based practice and introducing an electronic business practice environment which is effective and efficient.

2.4.1 Testing

However, several confrontations may be encountered in introducing the new technology. The introduction of the new technology might create some instruction challenges. Workers might be terrified of the innovative changes and this should be taken into contemplation for the reason that, typically, learning the latest operational ways can be hard-hitting. Staff should be trained on how to use the system and how they are going to benefit from the new system (Johnson and Bowen 2005: 135-136). Benfell (2002:94) explained some of the IT challenges that should be prevented in electronic records management, such as unintentional destruction/alteration by users or administrators, unauthorized retrieval and saving in other personal repositories like PC hardware or e-mails. IT is a good tool that can be utilized in smoothening access to records and information.

CHAPTER THREE

METHODOLOGY

3.0. Introduction

Under this chapter the Methodology includes the method, procedures and tools used to collect and analyze information. The methodology to be used in developing the system is incremental prototyping methodology.

A research methodology, also often referred to as a data collection method or mode of collection, refers to the process involved in collecting the data needed for a particular object of study. For a research methodology to be effective, specific data collection techniques need to be employed.

Data collection techniques allow the researcher to systematically collect information about the objectives of study and about the settings in which they occur. In the design and implementation of a poultry system and mobile application, the following data collection techniques will be used;

Methodology is defined as a system of broad principles from which specific methods may be derived to interpret or solve different problems within the scope of a particular discipline. Unlike an algorithm, a methodology is not a formula but a set of practices.

The researcher used prototype methodology when designing and developing my system and application. A prototyping methodology is a software development process which allows developers to create portions of the solution to demonstrate functionality and make needed refinements before developing the final solution.

Prototyping-based methodologies perform the analysis, design and implementation phases concurrently, and all the three phases are performed repeatedly in a cycle until the final working system was achieved.

3.1. Prototyping Methodology

Prototyping methodology is a software development process which allows users to create portions of the solutions to demonstrate functionality and make needed refinements before developing the final solution. Prototyping which is an iterative development process where requirements are quickly converted to a working system. System is continually revised with a close collaboration between users and developers. The Purpose of a prototype is to allow users of the software to evaluate developers' proposals for the design of the eventual product by actually trying them out, rather than having to interpret and evaluate

the design based on descriptions. Prototyping can also be used by end users to describe and prove requirements that have not been considered, and that can be a key factor in the commercial relationship between developers and their clients.

3.1.1 Prototyping is associated with the following Advantages.

A prototype can serve as an initial model that is needed as a benchmark to evaluate the finished system. Prototyping assists in identifying any problems with the effectiveness of earlier design, requirements analysis and coding activities.

A prototype its can be developed in to the final version of the system.

Prototyping helps to refine the potential risks associated with the delivery of the system being developed.

Early visibility of the prototype gives users an idea of what the final system will look like. It also encourages active participation among users and designers since they are all involved in system development.

Prototyping is also cost effective in this, development costs are reduced. It also increases system development speed. In this users will be expecting to interact with the prototype at least after every specified period of time.

3.1.2 The possible Disadvantages of Prototype models are;

Important decision might be made too early before business or Information Technology issues are understood thoroughly.

Practically, this methodology may increase the complexity of the system as scope of the system may expand beyond original plans.

Incomplete application may not be needed as the full system was designed.

Incomplete or inadequate problem analysis due to the fact that an early working version is produced in the early stage of system development.

Below is an illustration of the structure of the phases to be covered in the system development process

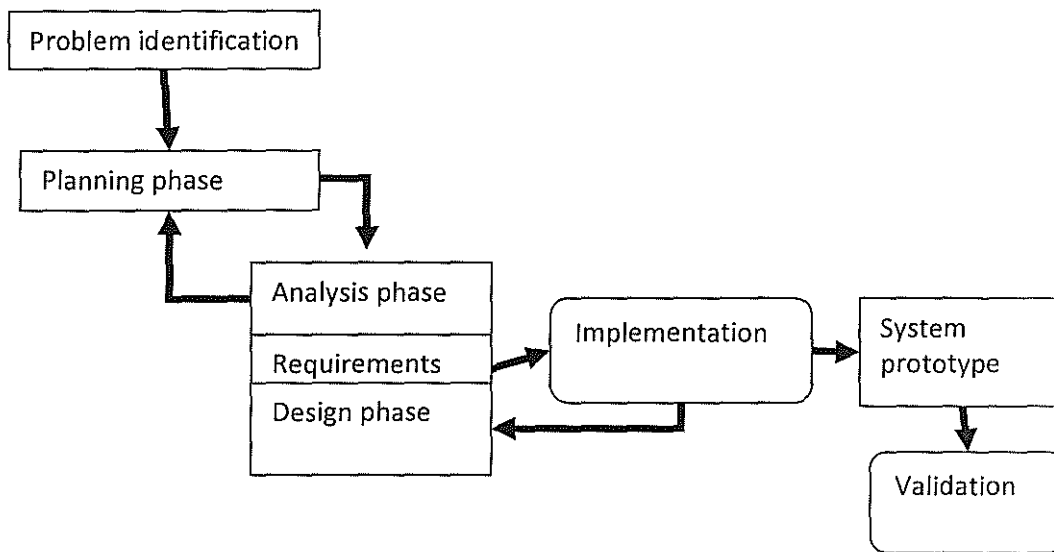


Figure 1: Prototyping phases

Explanation of the phases involved.

Planning phase

This is a fundamental process for understanding why any information should be developed. It

focuses on the requirements the user needs in the system. The phase also determines how the project team will go about building the information system.

Analysis phase

At this phase, the current system is analyzed to determine where the problem was in an attempt to fix the system. This step involved breaking down the system into different pieces to analyze then situation, analyzing project goals, breaking down what needs to be created and attempting to engage users so that definite requirements can be defined. Under analysis, Requirement gathering is the most crucial aspect as many times communication gaps arise in this phase and this leads to validation errors and bugs in the software program.

Implementation phase

In this phase the system is developed and integrated through creating tables in the data base, user interfaces, and linking the interfaces to the database.

In this phase users are involved in specifying the interactions with the system and this is a repeated process until you came up with the system that meets client's needs.

Conclusion

The researcher preferred prototyping as a methodology because it encourages active participation among users and developers, enables higher output for the user; there is requirement analysis and coding activities.

3.2. Sampling techniques

Purposive and Random sampling techniques were used to locate 24 respondents. All the study respondents had equal chances of being included in the sample. The simple random sampling were used with a homogeneous population, that is, one composed of members who all possess the same attributes that the researcher was interested in measuring.

3.3. Study population and sample size

The study was carried out at Uga chick poultry breeders (Mbarara). The respondents therefore are used to get the reliable data related to irregularities existing in the farm system.

Table 1: Showing study population and sample size

Category	Population	Sample
Administrators	5	3
Marketers	5	1
Veterinary persons	5	2
Employees	25	18
Total	40	23

3.4. Data Collection Procedure.

During data collection, the researcher got an introductory letter from the department of computing explaining the purpose of the research. The letter was taken to Uga chick Mbarara so as to get the necessary information without bias. Then later interviews were scheduled and conducted.

3.5. Data Collection Instruments.

3.5.1. Interview guide

Before conducting interviews, I got an interview guide that helped me to direct the conversation toward the topics and issues i wanted. Interview guides vary from highly scripted to relatively loose, but they all share certain features: They helped me to know what to ask about, in what sequence, how to pose my questions, and how to pose follow-ups. They provide guidance about what to do or say next, after my interviewee has answered the last question.

Interviews become necessary when researchers feel the need to meet face-to-face with individuals to interact and generate ideas that borders on mutual interest. It is an interaction in which oral questions are posed by the interviewer to elicit oral response from the interviewee.

Specifically with research interviews, the researcher has to identify a potential Source

Of information, and structure the interaction in a manner that brings out relevant information from his respondent. The creation of a cordial atmosphere is therefore vital to the success of such an interaction. As it allows greater flexibility in wording, sequence and direction. Apart from face- to-face interviews, they can also be conducted over the phone or the computer terminal via video conferencing technology.

3.5.2. Participation (observation)

In this type of data collection instruments, the researcher is seen as a member of the subjects of the study while observing and keeping notes of the attributes of the subject that is being researched so that he can directly experience, the phenomenon being studied. Even though he/she was seen by the subjects of the study, he/she conceals his/her real identity as a researcher. By this approach the researcher gets firsthand experience with informants. This is the type of observation which deals with covert investigation for which information may be sensitive and informants may feel uncomfortable to disclose.

3.6. Data processing and analysis

Microsoft Excel package was used in data processing and analysis due to its simplicity and researchers familiarity with the package. Excel is simple yet has powerful tools for analysis like several functions that can process user's inputs for analysis.

3.7. Data presentation and interpretation

Automatic Graph and Charts generated by Microsoft Excel are used by the researcher to present and interpret data, this is simple yet efficient in presentation and interpretation that can enhance effective decision making.

3.8. Limitation of the study

The following are the limitations encountered during the system implementation;

Financial limitation as all project implementation required financial resources and the fact that I am a student, financial constraints affected the effective project implementation.

Communication as a challenge occurred due to the fact that the project was implemented in Mbarara with a majority of the stakeholders like people speaking Runyankole, this hindered effective communication between project developers and the system users. Time constraint as 5 months allocated by the faculty of science and technology to the students for project development was insufficient to organize resources required, capture all requirements and satisfy all project stakeholders.

3.9 Recommendation

Basing on the current increase rate of poultry firm's day to day transactions at the firm, increased purchases by customers, increase imports and exports and the need to compute and generate proper reports easily and faster, I recommend that there is a great need to come up with such a system alongside a mobile application in place to ease the works done in these firms.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0. Introduction

This chapter includes the presentation and analysis of data obtained from the field through the use of questionnaires, observations and comparisons to gather data about the current systems. The following is summarized data that was collected from the system users according to content on internet, questionnaires and sites visited.

4.1 Data analysis

The researcher issued out 40 questionnaires and got responses from most of the respondents. Data analysis is the process of developing answers to questions through the examination and interpretation of data. The basic steps in the analytic process consist of identifying issues, determining the availability of suitable data, deciding on which methods are appropriate for answering the questions of interest, applying the methods and evaluating, summarizing and communicating the results.

Data analysis consists of various processes as used in relation of my research to obtain reliable data as follows.

4.1.1 Data requirements

The data necessary as inputs to the analysis are specified based upon the requirements of those directing the analysis or customers who will meet the finished product of the analysis. The general type of entity upon which the data will be collected is referred to as an experimental unit (for example a person or population of people). In this case which are the stake holders such as administrators, marketers, veterinary persons and employees with various age groups to determine working experience of these stack holders.

4.1.2 Data collection

Data was collected from a variety of Sources. The requirements are communicated by analysts to custodians of the data, such as information persons within an organization. The data was also collected and obtained through interviews, downloads from online Sources, or reading documentation.

4.1.3 Data processing

Data initially obtained was processed or organized for analysis. For instance, this involved placing data into rows and columns in a table format for further analysis, such as within a spreadsheet or statistical software.

4.1.4 Data cleaning

After data processing and organization was done, data cleaning was ensured to avoid data incompleteness, duplication and errors. For example the questionnaires the researcher collected back contained gaps, misspelled words and incorrect information as required by the researcher. The researcher had to use a type of data cleaning technique called spellcheckers used to lessen the amount of mistyped words, but it is harder to tell if the words themselves are correct for purposes of textual data. The researcher further grouped the various categories that were assessed and compared their data to ensure it's reliability.

4.1.5 Exploratory data analysis

After data cleaning, the researcher went ahead to analyze as applied to a variety of techniques referred to as Exploratory data analysis this helped me to begin understanding the messages contained in the data, during this process, the researcher had to further clean the data and also realized some data was missing which the researcher had to include such as the salary scale range and expertise of these stack holders which the researcher gathered because they both influence some one's effective response.

4.1.6 Modeling and algorithms

Mathematical formulas or models called algorithms are used ensure my population study was effective, here the researcher used Slovene's formula which states that $n = N / (1 + N * e^2)$ where n = sample size,

N = population study, e = margin of error at 0.05. A total of 40 stack holders are involved that include 5 administrators, 25 employees, 5 Veterinary persons and 5 marketers.

4.1.7 Data production

My data product in this case as is the records monitoring system that takes data inputs and generates outputs, feeding them back into the environment. For example inserting records that are generated in a portable document format for analyzing purposes and helping managers in decision making .

4.1.8 Communication

During data communication the researcher used the data visualization techniques to help clearly and efficiently communicate the message to the audience which used information displays such as tables and charts to help communicate key messages contained in the data. Tables are helpful to a user who might lookup specific numbers, while charts (e.g., bar charts or line charts) may help explain the quantitative messages contained in the data.

4.2 Data processing and data presentation.

The organization data was edited, classified and organized according to the researcher below. Data was processed and presented in MS Excel and documentation was done in MS word.

Figure 2: pie chart showing distribution of administrators

Source : primary data

The pie chart above shows the percentage distribution of Administrators that participated in the research according to years of experience. It indicates that the majority of administrators that responded to study had the working experience between 6-10 years.

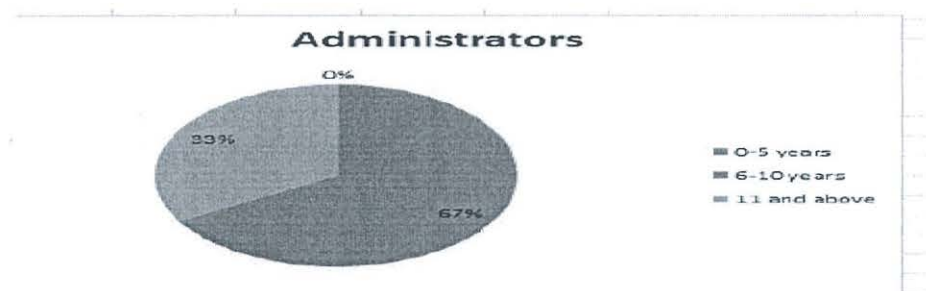


Figure 3: pie chart showing distribution of marketers

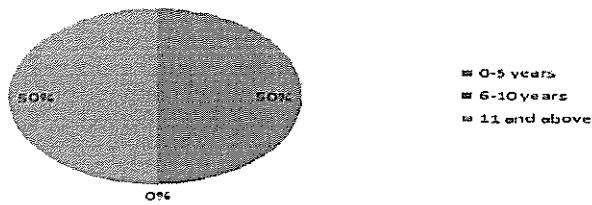
Source : primary data

The pie chart above shows the percentage distribution of Marketers that participated in the research according to years of experience. It indicates that the majority of Marketers that responded to study had the working experience between 0-5 years

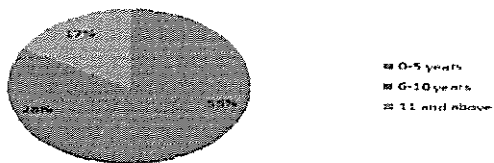
Source : primary data

The pie chart above shows the percentage distribution of Veterinary persons that participated in the research according to years of experience. It indicates that the majority of Veterinary persons that responded to study had the working experience between 0-5 years and 11 years on wards.

Veterinary persons



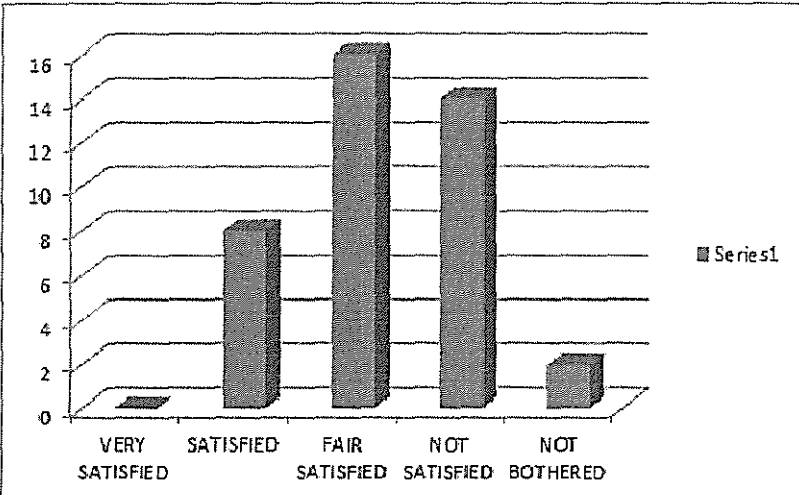
Employees



The pie chart above shows the percentage distribution of Employees that participated in the research according to years of experience. It indicates that the majority of Employees that responded to study had the working experience between 0-5 years.

Source : primary data

Figure 6: graph showing the satisfaction of the current system

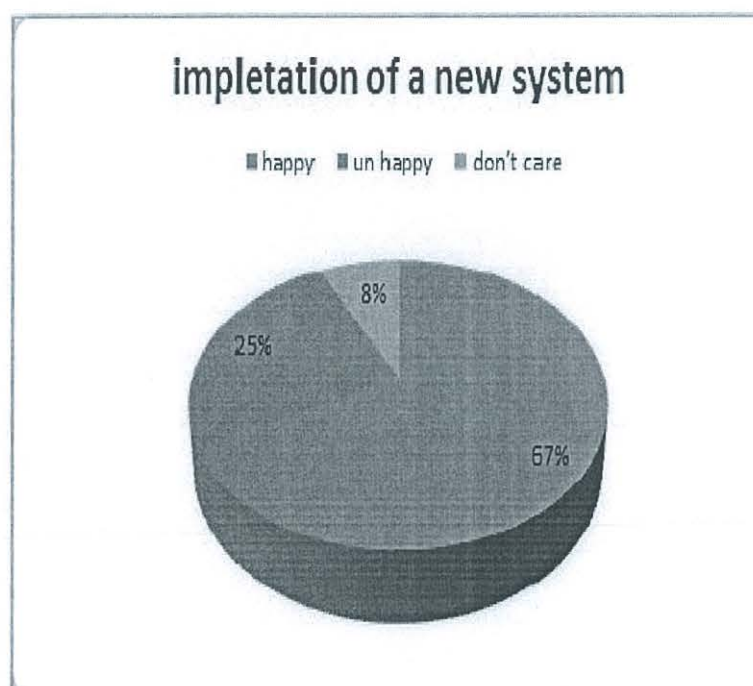


The above graph shows that more than 30% of the respondents are not satisfied with the current generating supervisory reports of the farm, the 5% are not bothered perhaps they could be un informed about the system, more than 35% are fairly satisfied may be they noticed a change in the communication system and none of the members was satisfied with communication system done.

And this would emerge a question of whether the respondents need to have a new system implemented presented in the following results.

Figure 7: pie chart showing the distribution of the implementation of a new system.

Source : primary data



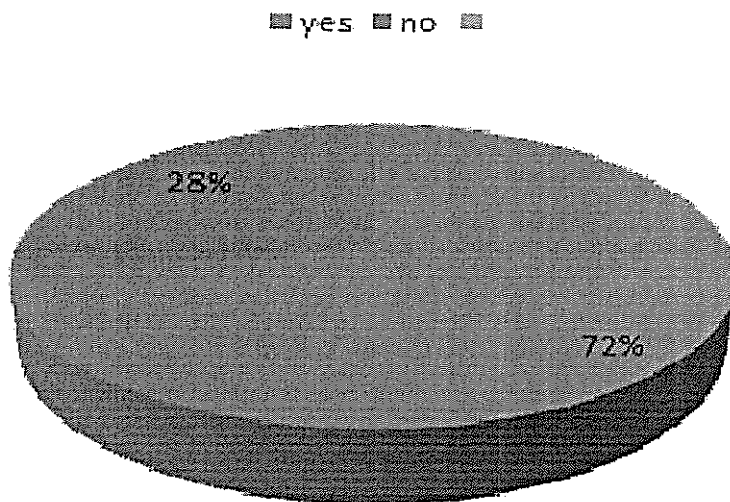
The pie chart show that more of the respondents would like to have a new system implemented in place that is at Ugachick breeders limited Mbarara branch and respondents are asked about the accessibility of the system and this is as shown below.

Figure 8: pie chart showing percentage of respondents' accessibility to the system.

Source : primary data

The above pie chart shows that more than 70% can easily access the system since it's a web based system and be able to perform activities as though they are present at the firm.

user accessibility to the system



CHAPTER FIVE

IMPLEMENTATION OF THE NEW SYSTEM

5.0. Introduction

In this chapter introduce how the entire system works, accessed, what the user do to access its resource s by describing the software specifications, hardware specifications, and computer system type that would accept its friendly mobility.

5.1. System description

The wed based poultry monitoring system is managed by the administrator who has the most privileges in the system such as inserting new data that is being recorded by employee's for example stock in and stock out, registration of users, processing(daily, weekly, monthly, annually) reports , controls access through locking and unlocking users of the system. The system captures various poultry incidents such as sick birds, dead birds and damaged eggs and a report is generated in a PDF format for farm inspection. Under transaction window there are two sections that is stock in and stock out. Under the stock in, the system keeps track of what is purchased from other business and under stock out the system keeps track of what is being sold out of business.

5.2. Hardware specifications

There is a requirement of at least a Pentium 4 computer system that has a 1GB RAM(Random

Access Memory) with a 2GHz processing speed of CPU that enables faster loading of the system database entities and loading all the system wed pages. The system runs on a server machine that will be responding reliably to all the user requests like querying for certain outputs

5.3. System software specifications

The system requires a computer with WINDOWS 7, 8 and UBUNTU operating systems that would help the user to smoothly interact with the computer system to before able to access the system files and directory

The system runs on a SQL server it may be locally hosted on a personal computer with a server software installed there two major server software that were useful in hosting these particular system that's is to say, WAMP server software and XXAMP server soft ware.

5.4. Systems architecture

- Client computers

- Server computer
- Database

The system has a variety of programming languages that are meaningful to bring out a spectacular outlook that users would enjoy to interact with. SQL this stands for Structured Query Language that is needed to structure a typical database.

CSS this stands for Cascading Style Sheet that is needed to design the appearances and interactivity behaviors on the system for example the hover state of the links and editable entities. The system functionalities are programmed using the major database languages for example Ms Access together with Visual Basic processor that is interpreted by the server, this creates a server connection and is particular needed for querying the database by the users then JAVASCRIPT that is needed for client side validations and animations.

5.5. Data requirements

5.6. Database tables

In this section, the researcher broke down the system database structure what each table (entity) represents the collection of the Ugachick databases with tables listed. A database is a collection of related data tables that are needed to store related data in columns.

The figure below the tables are all linked by database entity relationships in accordance to how the different entities affect each other as a way of normalizing the database to avoid redundancy and repeating values in the database.

Log in table



The screenshot shows a login window titled "Login window". The main area has a decorative header "Poultry Records Manager" with a background image of chickens. Below the header, there are two input fields: "Username: admin" and "Usercode:". At the bottom, there are two buttons: "Login" and "Cancel".

The table above is a foreign table which acts as the system controlling table that contains the system user's logon credentials. It's from this table that the user's passwords are compared with the user input to successfully be able to

access the system resources. The table stores data in different columns as shown in the figure below the table consists of the password column that stores password in an encrypted way using a VB and PHP encryption standard md5.

Figure 9: Showing the log in table in the database with user's log in data

5.7. MDI / Home FORM

This is the mother form which contains all the other sub parts of the system. Some times referred to as the menu form or main form.



Figure 10: Showing MDI FORM of my system


From the above figure the home menu contains, hatchery records, poultry stock levels, egg collection records, feed consumptions, sales records, expenses and summary reports can all be generated from the form.

5.8. System overview

Figure 11: Showing the Hatchery records

log out

HOME | HATCHERY RECORDS | POULTRY STOCK LEVELS | EGG COLLECTION RECORDS | FEED CONSUMPTIONS | SALES RECORDS | EXPENCES | SUMMARIES



Poultry Records Managment System

00/12/2017

No of chicks Hatched: 55

No of Death: 0

No of Alive: 65

Add data

Save

Delete


Date	No of chicks	Death	Alive
12/08/2017	56	0	56
07/12/2017	200	3	177
08/12/2017	34	4	30

This form contains the details of chicks being hatched.

Figure 12: Showing the egg collection record

log out

HOME | HATCHERY RECORDS | POULTRY STOCK LEVELS | EGG COLLECTION RECORDS | FEED CONSUMPTIONS | SALES RECORDS | EXPENCES | SUMMARIES



Poultry Records Managment System

00/12/2017

Number collected: 67

Spoils: 5

Incharge: dghh

Add data

Save

Delete


Date	No. collected	Spoils	Incharge
12/08/2017	67	5	dghh
08/12/2017	244	67	sgyhf

This form shows the number of eggs collected in a day, the spoilt eggs and the person incharge.

Figure 13: Showing the poultry feeds consumption

log out

HATCHERY RECORDS | POULTRY STOCK LEVELS | EGG COLLECTION RECORDS | FEED CONSUMPTIONS | SALES RECORDS | EXPENCES | SUMMARIES



08/12/2017

Feed type: Chick starter

Available Kgs: 456

Used kgs: 89

Remaining Kgs: 367

Add data

Save

Delete


Date	Feed type	Available Kgs	Used kgs	Remaining Kgs
12/08/2017	Chick starter	456	89	367
08/12/2017	Grower	14	9	5
08/12/2017	Broiler feed	789	0	789
08/12/2017	Grower	888	56	832

This form shows the type of feeds, the number of kilograms consumed and the remaining feeds in stock.

Figure 14: Showing the Poultry stock levels

log out

HATCHERY RECORDS | POULTRY STOCK LEVELS | EGG COLLECTION RECORDS | FEED CONSUMPTIONS | SALES RECORDS | EXPENCES | SUMMARIES



08/12/2017

Bird category: Chicks

Available no: 567

No of death: 0

Maturity level: 1-2 weeks

Add data

Save

Delete

Date	Bird category	Available	No of death	Maturity level
12/08/2017	Chicks	567	0	1-2 weeks
08/12/2017	Layers	567	9	2-4 weeks
12/08/2017	Pullets	354	0	1-2 months
08/12/2017	Broilers	400	45	3-4 months

This form shows the category of birds, available numbers in stock perday, the deaths and maturity level.

Figure 15: Showing the sales records

The screenshot shows the 'Poultry Records Management System' interface. At the top, there is a navigation bar with links: HOME, HATCHERY RECORDS, POULTRY STOCK LEVELS, EGG COLLECTION RECORDS, FEED CONSUMPTIONS, SALES RECORDS, EXPENSES, and SUMMARIES. The 'SALES RECORDS' link is highlighted. Below the navigation bar is a header section with a chicken image on the left and the title 'Poultry Records Management System' in the center. On the right side of the header is a decorative image of chicken eggs. The main content area is divided into two sections. On the left is a form for adding sales data. It includes a date dropdown menu set to '08/12/2017'. Below this are input fields for 'Income item name' (containing 'jijj'), 'Amount' (containing '345656'), 'Received from' (containing 'fgj'), and 'Received by' (containing 'dgh'). At the bottom of the form are three buttons: 'Add data', 'Save', and 'Delete'. On the right is a table displaying sales records. The table has five columns: 'Date', 'Income name', 'Amount', 'Received from', and 'Received by'. It contains one data row with the following values: '12/08/2017', 'jijj', '345656', 'fgj', and 'dgh'. Below the table is a small asterisk icon.

Date	Income name	Amount	Received from	Received by
12/08/2017	jijj	345656	fgj	dgh

This form shows the sales records accumulated from the daily sales made out of the chicks sold plus the amount obtained.

Figure 16: showing the Expenses monitoring form

The screenshot shows the 'Poultry Records Management System' interface. At the top, there is a navigation bar with links: HATCHERY RECORDS, POULTRY STOCK LEVELS, EGG COLLECTION RECORDS, FEED CONSUMPTIONS, SALES RECORDS, EXPENSES, and SUMMARIES. The 'EXPENSES' link is highlighted. Below the navigation bar is a header section with a chicken image on the left and the title 'Poultry Records Management System' in the center. On the right side of the header is a decorative image of chicken eggs. The main content area is divided into two sections. On the left is a form for adding expense data. It includes a date dropdown menu set to '08/12/2017'. Below this are input fields for 'Expense item name' (containing 'fgbhh'), 'Amount' (containing '7899'), and 'Incharge' (containing 'gff'). At the bottom of the form are three buttons: 'Add data', 'Save', and 'Delete'. On the right is a table displaying expense records. The table has four columns: 'Date', 'Expense item name', 'Amount', and 'Incharge'. It contains two data rows with the following values: '12/08/2017', 'fgbhh', '7899', 'gff' and '08/12/2017', 'ghijj', '976', 'sfgg'. Below the table is a small asterisk icon.

Date	Expense item name	Amount	Incharge
12/08/2017	fgbhh	7899	gff
08/12/2017	ghijj	976	sfgg

This form gives the details of daily expenditures made and the one responsible or the incharge.

Figure 17: Showing the summary reports

STOCK LEVELS REPORT				
Date	Bird category	Available no.	No of death	Maturity level
12/08/2017	Chicks	567	0	1-2 weeks
08/12/2017	Layers	567	9	2-4 weeks
12/08/2017	Pullets	354	0	1-2 months
08/12/2017	Broilers	400	45	3-4 months

This is a summary report of stock levels.

DAILY FEEDS REPORT				
Date	Feed type	Available Kgs	Used kgs	Remaining Kgs
12/08/2017	Chick starter	456	89	367
08/12/2017	Grower	14	9	5
08/12/2017	Broiler feed	789	0	789
08/12/2017	Grower	888	56	832

This is a summary report of the daily feeds expected for the chicks to consume on a regular basis.

CHAPTER SIX

CONCLUSIONS AND RECOMENDATIONS

6.0. Introduction

This chapter covers the Evaluation s, limitations, problems encountered, experiences from team work, recommendation and conclusions in the design of a wed based monitoring system for Ugachick poultry breeders.

6.1. System evaluation

The system helped to put a wed based monitoring system that will help farm administrators and researchers to manage Ugachick poultry breeder's record ill and easily find records they want easily respectively as ill as assessing their performances. The system was able to achieve the main objective which was to design and develop a wed based desktop system that can be needed to track the activities such as monitoring expenditure, labor force, maintaining costs, management and generating supervisory reports of the farm.

6.1.1. Security of the system

The system contained a server side and client side.

6.1.2. System efficiency and effectiveness

The WAMP server together with SQL database was capable of handling multiple requests simultaneously from the user/ client machines then ensure high level of efficiency.

6.1.3. System data integrity

Data recorded and stored in the system database are not accessed by unauthorized users, there fore all the reports and inputs in the system have a high level of integrity.

6.1.4. Limitations of system

The system did not include an external device that would test the bird's egg and determine the bird's fertility, temperature, breed, and others, hence making it difficult for the employees that are not veterinary experts who know the health of birds in the farm.

6.1.5. Problem encountered

I faced challenge of the codes that can present notification alerts on some activities that needed to be performed including querying and retrieving information stored in the data base. Decision making among group members was prolonged instantly due to poor coordination that led to delay in finishing the whole system in time.

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