

**DESIGN AND IMPLEMENTATION OF FOCAL PERSONS' DETAILS INFORMATION
MANAGEMENT SYSTEM**

FOR A NON GOVERNMENTAL ORGANIZATION

A CASE STUDY OF TRIAS UGANDA

By

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**PROJECT REPORT SUBMITTED TO THE COLLEGE OF APPLIED SCIENCES AND
TECHNOLOGY IN THE PARTIAL FULFILLMENT OF**

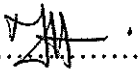
**THE REQUIREMENTS FOR A WARD OF DIPLOMA IN COMPUTER SCIENCE OF
KAMPALA INTERNATIONAL**

UNIVERSITY

SEPTEMBER, 2012

DECLARATION

I declare to the best of my knowledge that this project report is my original work and that work performed by others is appropriately cited.

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APPROVAL

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Date: 13th Sept 2012.

Supervisor

Signature: 



DEDICATION

This work is dedicated to my mother, Mrs. Namaganda Neoline, my grandparents, uncles and aunts.

ACKNOWLEDGMENT

To complete this work, I received immense support from many people to whom I owe gratitude. It has been a tasking and demanding period for me. But I would like to thank everyone who gave me the push to carry on and encouraged me not to give up. My parents' financial support and my friends' encouragement and assistance were vital in coming up with this report. I will always be indebted to them.

I'm very grateful to my supervisor and mentor Eng. Kasawuli Faik who has guided me in getting the right project topic, writing the proposal and coming up with this report. I salute his charisma and professionalism.

Above all I give praise and glory to the Lord God Almighty. If it wasn't for his mercy, graces and guidance none of this would have been possible. May the grace of our Lord Jesus Christ and the love of God and the fellowship of the Holy Spirit be with us all!

Amen.

LIST OF FIGURES

Figure 1. 1: Conceptual framework of the proposed system	4
Figure 4. 1: Respondents' views about registration follow up	18
Figure 4.2: Impact of designed system on cost of operation	20
Figure 4.3: Context Level Diagram	24
Figure 4.4: Data Flow Diagram (DFD)	25
Figure 4.5: Entity Relationship Diagram.....	27
Figure 4.6: Entity employeeinfo	29
Figure 4.7: Entity readers	29
Figure 4.8: Entity debts.....	30
Figure 4.9: Entity admin.....	30
Figure 4.10: Login credentials form for admin user.....	32

LIST OF TABLES

Table 4. 1: Respondents' occupation.....	17
Table 4.2: Respondents' views about the impact of designed system.....	19
Table 4.3: showing hardware requirements for the proposed system	22
Table 4.4: showing software requirements for the proposed system.....	23

ABBREVIATIONS

BASIC – Beginners All Purpose Symbolic Instruction Code

COM - Component Object Model

DBA - Database Administrator

DBMS - Database Management System

ICT - Information and Communications Technology

IDE – Integrated/Interactive Development Environment

IS - Information Systems

NGO - Non-Governmental Organization

OLE - Object Linking and Embedding

RAD - Rapid Application Development

RDBMS - Relational Database Management System

SDLC - System Development Life Cycle

SPSS – Statistical Package for Social Sciences

SQL – Structural Query Language

VB – Visual Basic

ABSTRACT

The Information Management System changes the way we do organizations. That's inescapable conclusion of many organization's seeking to use Information Management System technology to gain a competitive advantage in an ever more Information Management System –based organization environment. Increasingly an Information Management System is seen as an appropriate way for organizations use to capture data, organize information and store information in order to facilitate easy access and modification.

Of course, information management system technology has always had an impact on the way the organizations operate .companies are increasingly adopting to use of information management system technology to organize and store data, and to enhance their core company processes and most organizations with more than a handful of employees use a manual system for keeping files and phone calls to share data. What makes the information management systems such a major organization issue is the way they captures information, organizes information, analyzes information, compiles information , manipulates information and stores information and makes previously unimaginable levels of data management and ability of sharing data.

When a Non-governmental organization such as Trias Uganda uses the information management system, for capturing focal persons' details it takes place in a micro second and clients can do an exercise in the shortest possible time.

If an NGO is to survive, let alone prosper, in the information management system technology it needs to examine what it does and how it does it closely and identifies ways to make its organization processes adoptable to the information management system

Table of Contents

DECLARATION	ii
APPROVAL	iii
DEDICATION	iv
ACKNOWLEDGMENT	v
LIST OF FIGURES.....	vi
ABBREVIATIONS.....	viii
ABSTRACT	ix
CHAPTER ONE	1
INTRODUCTION	1
1.0 Introduction	1
1.1 Background	1
1.3 Objectives of the study	2
1.3.1 MAIN OBJECTIVE.....	2
1.4 Research Questions.....	2
1.5 Scope	3
1.6 Significance.....	3
1.7 Conceptual Framework	3
CHAPTER TWO	5
LITERATURE REVIEW	5
2.0 Introduction	5
2.1 Scope of the Literature review	5
2.2 Information system.....	5

2.3 Computerized System.....	6
2.4 Databases	6
2.4.1 TYPES OF DATABASES	6
2.4.2 APPLICATION ADVANTAGES OF DATABASES	7
2.5 Database Management System.....	9
2.5.1 ADVANTAGES OF A DBMS.....	9
2.6 Structured Query Language (SQL)	10
2.7 Visual Basic	10
2.8 Literature Conclusion	12
CHAPTER THREE.....	13
METHODOLOGY	13
3.0 Introduction	13
3.1 Target population	13
3.2 Sampling selection	13
3.3 Data collection tools.....	13
3.3.1 INTERVIEWS	13
3.3.2 QUESTIONNAIRES	14
3.3.3 OBSERVATION	15
3.4 Development Methodology	15
3.5 Conclusion	16
CHAPTER FOUR	17
SYSTEM ANALYSIS, DESIGN AND IMPLEMENTATION	17
4.0 Introduction	17
4.1 Fact finding analysis.....	17
4.1.1 SCOPE REGARDING OCCUPATION OF RESPONDENTS	17
4.1.2 VIEWS ABOUT PROCEDURES FOR ORGANIZED CLIENT REGISTRATION FOLLOW UP.....	18

4.1.3 RESPONDENTS VIEW ABOUT THE IMPACT OF THE DESIGNED SYSTEM ON COST OF OPERATION	19
4.2 System and requirement analysis.....	21
4.2.1 USER REQUIREMENTS	21
4.2.1.1 Hardware requirements.....	21
4.2.1.2 Software requirements	23
4.3 System Design	23
4.3.1 PROPOSED SYSTEM.....	23
4.3.2 ARCHITECTURAL CONTEXT LEVEL DESIGN	23
4.3.3 DATA FLOW DIAGRAM (DFD)	25
4.4 Database Design	26
4.4.1 CONCEPTUAL DESIGN	26
4.4.2 LOGICAL DESIGN.....	27
4.4.3 PHYSICAL DESIGN	28
4.5 Implementation	30
4.5.1 SYSTEM TESTING.....	31
4.6 Presentation of Results	31
4.6.1 SECURITY	32
4.6.2 OTHER INTERFACES.....	32
CHAPTER FIVE	33
DISCUSSION, CONCLUSION AND RECOMMENDATIONS	33
5.0 Introduction	33
5.1 Discussion	33
5.2 Conclusion	34
5.3 Recommendations.....	34
5.3.1 LIMITATIONS OF THE STUDY	34
5.3.2 FUTURE WORKS	35
APPENDICES.....	36
APPENDIX A.....	36

A questionnaire used in survey.....	36
APPENDIX B.....	38
Sample interview questions for senior managers	38
APPENDIX C.....	39
Sample screenshots	39
APPENDIX D.....	44
Sample codes	44
References.....	46

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Business Enterprises, today are striving to operate business environments that are dynamic with the ever changing technology to cope with business challenges around the world. Both government and the private sector have no alternative but to constantly realign their business strategies to maintain profitability and growth. These rapidly changing global business environments have equally precipitated new challenges to different institutions, organizations and markets. Increase client demand for products and services have led to the need for streamlined information harnessing, processing, storage, access, payments, sharing as well as exercising best practices to avail protection for information assets in these organizations.

1.1 Background

Trias Uganda is an NGO (Non governmental organization), with headquarters is located in Muyenga Kampala. It has more than 10 employees at the head quarter. Trias Uganda offers donations and aware focal persons on how to distribute the donations to the needy over the country. The organization has branches in some Western parts of Uganda such as Hoima district, Masindi, Kibaale district, Mbarara district called Trias Uganda.

NGOs are organizations that are non-political, non-profit, non-governmental, and accountable to their stakeholders and involved in welfare and socio-economic development of people. NGOs with fast expansion in size and services in the late 20th century throughout the world are being considered as the third sector of society, besides, public and private.

1.2 Statement of the problem

Currently, Trias Uganda was using a manual system to capture data, workers find it hard to keep track of the documents and transactions and data isn't preserved properly for future use. Due to the problems faced within the organization, hence the need to automate the functions of the

organization by designing and implementing a Focal Persons' Details information management system that would capture and store details of Focal persons, to help in decision taking.

1.3 Objectives of the study

1.3.1 Main Objective

The overall objective of this study is to design and implement a registration Information Management System for focal persons' details of Trias Uganda which captures, accumulates, processes, stores and disperses or distributes the data available in the form information which are vital for carrying out the important functions of managing in an organization.

1.3.2 Specific Objectives

- i. To investigate and find out the existing problems with the current traditional registration system
- ii. To analyse the requirements of the focal persons' details system to be designed
- iii. To design the automated focal persons' details system
- iv. To develop the automated focal persons' details system
- v. To implement and test the focal persons' details system

1.4 Research Questions

- i. Would the Information Management System capture, accumulate, process, store and disperse or distribute the data available in the form information?
- ii. Would the system classify, examine, assess, and then dispense data available to the decision makers in a timely and accurate manner?
- iii. Would an Information System automate the focal persons' details registration and management?

1.5 Scope

This study focused on Trias Uganda, with headquarters in Muyenga, Kampala. Focal persons normally go for donations to Trias Uganda. The technical scope comprised of a Visual Basic 6.0 (VB) user forms and a Microsoft Access 2007 database.

1.6 Significance

The study would help Trias Uganda to minimize the risks associated to manual registrations that include Employees' Registration Information System.

In this study the research ensured that employees of Trias Uganda registered data base, focal persons' details into Information Management System, so as to contribute to both efficiency and central data Management.

It was proven beyond no doubt that the system would help to classify, examine, assess, and then dispense to the decision makers in an organization in a timely and accurate manner. The new system implementation would ensure top security measures and data or records integrity.

Finally, the researcher gained knowledge in researching, fact finding, application development fundamentals and project management skills at large. The researcher would also be awarded an undergraduate diploma in Computer Science on successful completion of the project.

1.7 Conceptual Framework

In the study, the researcher undertook surrounding the implementation of the Focal Persons' Details information management system with lots of interest. Below is a conceptual framework the researcher used to implement the library management system.

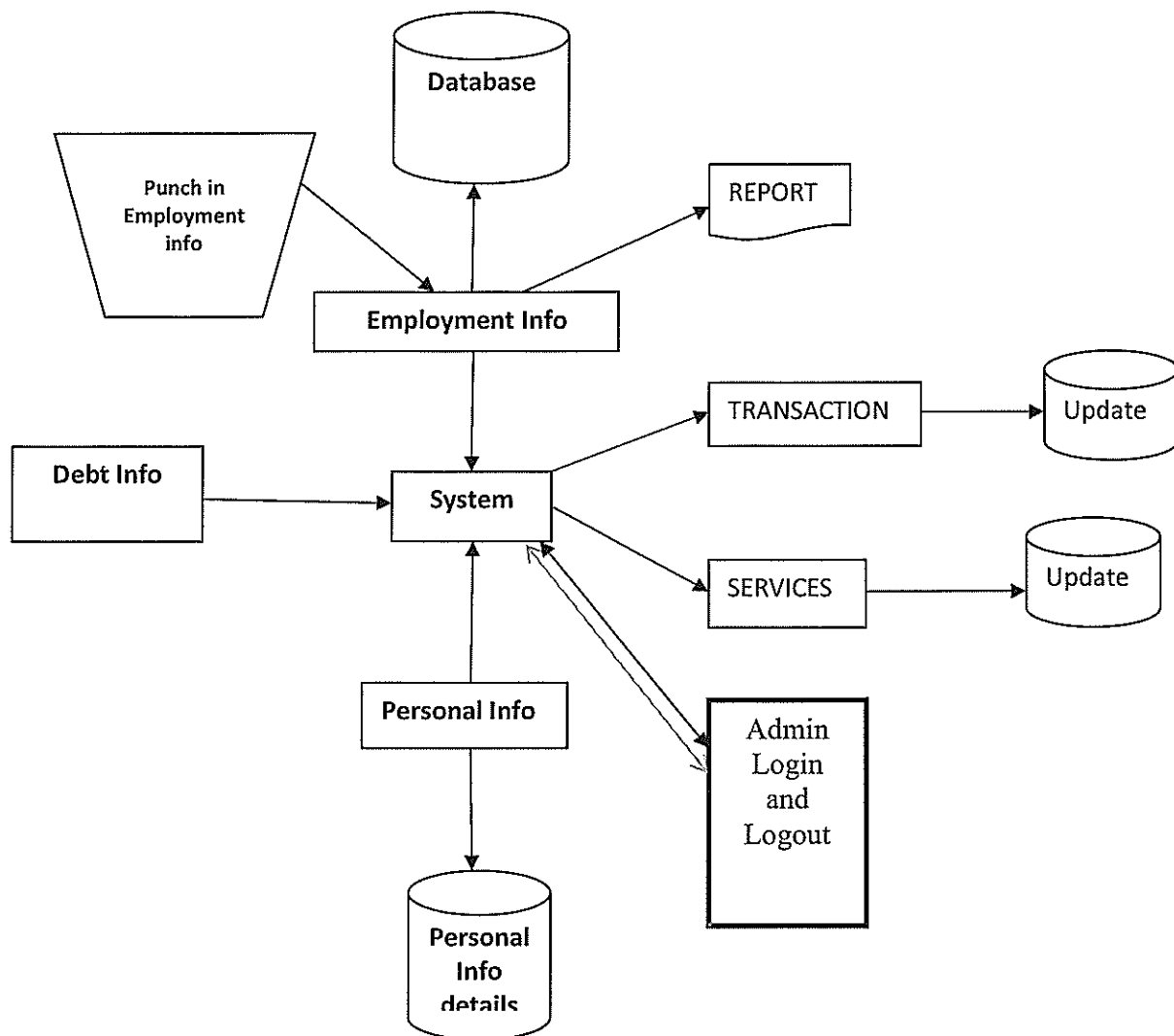


Figure 1. 1: Conceptual framework of the proposed system

In the figure 1.1 above, the researcher demonstrated how the system would work conceptually. Administrator members login and utilize the system by transacting employment, debt and personal information after which they logout. Transactions vary and were from the specific tasks done by the system by the system users. The back end of the system was the system database for storage purposes.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provided a critical review of existing literature and documents containing information related to the research problem that was investigated made by other authors, scholars and academicians about the proposed system.

2.1 Scope of the Literature review

The literature about the system developed dueled so much on information systems that make use of databases (Long, 1989, p.249), knowledge from books about how to set and operate networks and in particular Ethernet cabled local area networks. The review put into consideration related systems that have previously been developed. It dug deep into how databases could be designed, how an interface could be created, and how such system could be put into use and maintained. It also covered problems anticipated and how they could be troubleshot.

It further looked at how the client /server network could be set up and the technology that could be used to share the different resources. It also covered the kind of computers and other devices that could be reliably used in setting up a network that would enable sharing of the database.

It suggested the different areas where such a system could be applied and the problems that such a system cable used to solve. The review further tackled the different techniques that could be used in collection of data, how to analyze the data, how to develop the system itself by suggesting various methodologies and tools that could be used (Loudon, 2002).

2.2 Information system

According to Jeffrey, Lonnie.Bethey, Dittman (2000), define an information system as an arrangement of people, data, processes, information, presentation and information technology that interact to support and improve day to day operations in business as well as support the problem solving and decision making needs of management and users.

2.3 Computerized System

According to Jeffrey, Lonnie.Bethey, Dittman (2000), define Computers in a way that they are used to store data by creating files within the computer that can be retrieved whenever needed by any one. In this system one is able to make changes and updates information without having to rewrite the data.

2.4 Databases

A database is an organized collection of integrated files (Williams, sawyer, 1999). Connolly, Begg (2002), refer to a database as a collection of related data necessary to manage an organization. It excludes data such as input document, reports and intermediate results obtained during processing.

A database, models the data resources of an organization using the relationships between different data items. The model is independent of any application program.

2.4.1 Types of Databases

Flat-File

The flat-file style of database are ideal for small amounts of data that needs to be human readable or edited by hand. Essentially all they are made up of is a set of strings in one or more files that can be parsed to get the information they store; great for storing simple lists and data values, but can get complicated when you try to replicate more complex data structures. That's not to say that it is impossible to store complex data in a flat-file database; just that doing so can be more costly in time and processing power compared to a relational database. The methods used for storing the more complex data types, are also likely to render the file unreadable and un-editable to anyone looking after the database.

The typical flat-file database is split up using a common delimiter. If the data is simple enough, this could be a comma, but more complex strings are usually split up using tabs, new lines or a combination of characters not likely to be found in the record itself.

One of the main problems with using flat files for even a semi-active database is the fact that it is very prone to corruption. There is no inherent locking mechanism that detects when a file is being used or modified, and so this has to be done on the script level. Even if care is taken to lock and unlock the file on each access, a busy script can cause a "race condition" and it is possible for a file to be wiped clean by two or more processes that are fighting for the lock; the timing of your file locks will become more and more important as a site gets busy.

Relational

The relational databases such as Microsoft Access, Microsoft SQL Server and Oracle, have a much more logical structure in the way that it stores data. Tables can be used to represent real world objects, with each field acting like an attribute. The "relation" comes from the fact that the tables can be linked to each other. These kind of relations can be quite complex in nature, and would be hard to replicate in the standard flat-file format.

One major advantage of the relational model is that, if a database is designed efficiently, there should be no duplication of any data; helping to maintain database integrity. This can also represent a huge saving in file size, which is important when dealing with large volumes of data. Having said that, joining large tables to each other to get the data required for a query can be quite heavy on the processor; so in some cases, particularly when data is read only, it can be beneficial to have some duplicate data in a relational database.

Relational databases also have functions "built in" that help them to retrieve, sort and edit the data in many different ways. These functions save script designers from having to worry about filtering out the results that they get, and so can go quite some way to speeding up the development and production of web applications. One stop website shop, 2012.Types of Database. [Online] Available at: <<http://www.theonestopwebsiteshop.com/web-design/database-type.htm>>

2.4.2 Application advantages of Databases

- i. Data can be shared; it might be possible to satisfy the data requirements of the new applications without having to add new data to the data base (Date, 2001).

- ii. Redundancy can be reduced; in file based system redundancy is an avoidable, but with the data base files are integrated and this problem is eliminated as long as the data administrator is aware of the data requirements for both applications (Date, 2001).
- iii. Inconsistence can be avoided in file based; suppose there is a change in one file means changes have to be made in all other files otherwise data becomes inconsistent but for the data base a change in one record is done automatically to all others as well through a process called Progating updates (Date, 2001).
- iv. Transaction support is provided; having a logical unit of work typically involving several database operations in particular, several update operations. Examples transferring cash amount from account A to account B clearly two updates are required one to withdraw cash from A and the other to deposit to account B, if the user has stated that the two updates are part of the same transaction then the system can effectively guarantee that either both of them or neither is even (say because of power outage) half way the process (Date, 2001).
- v. Integrity can be maintained; To ensure that the data in the data base is correct ,data is controlled centrally by permitting the data administrator define and the data base administrator implement integrity constraints known as business rules (Date,2001).
- vi. Security can be enforced; Data access is restricted to those with passwords and proper permissions (Date, 2001).
- vii. Conflicting requirements can be balanced; Here the data base administrator under the instruction of the data administrator's direction can so structure the system as to provide an overall service that is "best for the enterprise" to avoid the conflicting requirements issue(Date,2001).
- viii. Standards can be enforced; Date (2001), states that the data base administrator under the data administrator's instruction ensures that all applicable standards are enforced in the presentation of data. The applicable standards may include any or all of the following departmental installation, international standards. Standardizing data representation is particularly desirable as an aid to aid interchange or movement between systems.

2.5 Database Management System

A Database Management System (DBMS) is a set of procedures that manage the database and provide access to the database in form required by an application program. The DBMS aims to allow transmitting application programs independent of the physical organization of files in secondary storage. Because it can access several files at once, a DBMS is much better than flat-file management system that used to dictate computing. A file manager is a software manager that can access one file at a time (Hutchinson, sawyer, 2000).

Database resulted into minimal space wasted for storage of data for example traditionally the same data (such as address of an individual) would be lead into data redundancy.

2.5.1 Advantages of a DBMS

- Controlling redundancy: Data redundancy is controlled by integrating the files so that multiple copies of the same data are not stored.
- Providing storage structure for efficient query processing.
- Restricting unauthorized users. Without suitable security measures, integration makes the data more vulnerable than file based systems. However, integration allows the Database Administrator (DBA) to define, and the DBMS to enforce database security which may take the form of user name and passwords. The access that un authorized user is allowed on the data may be restricted by the operation type (retrieval, insert, delete, update).
- Providing concurrency by eliminating or controlling redundancy, we are reducing the risks of inconsistencies occurring. If a data item is stored only once in a database, any update to its value has to be performed only once and the new value is available immediately to all users.
- Enforcing integrity constraints, Database integrity refers to the validity and consistence of stored data, this is normally expressed in terms of constraints which are consistence rules that the database is not permitted to violet.
- Increased concurrence. DBMS manage concurrence database access.
- Sharing of data. A database belongs to entire organization and can be shared by all authorized users. In this way more users share more of the data.

- Economy of scales. Combining all the organization's operational data into one database and creating a set of applications that work on this one source of data can result in cost savings.

2.6 Structured Query Language (SQL)

This stands for Structured Query Language. It was formally known as SEQUEL. It has the following advantages:

- SQL is not a complicated programming language and is usually used in conjunction with a host language in this case VB.
- It has English like statements which are easily programmed.
- Works well with different operating systems while integrated in a Relational Database Management System (RDBMS) like MS Access
- Very fast during processing transactions of a database

SQL is basically used to do the following:

- Data definition language (DDL): It defines the contents of the data stored in the database.
- Data Manipulation Language (DML): This is used to insert update and delete data from the database.

MS Access version 2007 in this case was used as the relational database management system by the researcher.

2.7 Visual Basic

Visual basic is a high level programming language evolved from the early DOS version called BASIC. Basic means 'Beginners All-purpose Symbolic Instruction Code'. It is a fairly easy programming language to learn. The code looks a bit like English language. Different software companies produced different versions of BASIC such as Microsoft QBASIC, QUICK BASIC, GWBASIC, and IBM BASIC and so on.

The Library membership registration management system used visual Basic programming language version 6.0 to build the user interface. Visual Basic is a programming environment that is, a program specifically designed to facilitate the creation of new programs. Visual Basic runs on windows operating system and it is mostly used to create business applications (Burrows and Langford, 2000).

VB was used because of the following uses:

- i. The structure of the Basic programming language is very simple, particularly as to the executable code.
- ii. VB is not only a language but primarily an integrated, interactive development environment ("IDE").
- iii. The VB-IDE has been highly optimized to support rapid application development ("RAD"). It is particularly easy to develop graphical user interfaces and to connect them to handler functions provided by the application.
- iv. The graphical user interface of the VB-IDE provides intuitively appealing views for the management of the program structure in the large and the various types of entities (classes, modules, procedures and forms).
- v. VB provides a comprehensive interactive and context-sensitive online help system.
- vi. When editing program texts the "IntelliSense" technology informs you in a little popup window about the types of constructs that may be entered at the current cursor location.
- vii. VB is a component integration language which is attuned to Microsoft's Component Object Model ("COM").
- viii. COM components can be written in different languages and then integrated using VB.
- ix. Interfaces of COM components can be easily called remotely via Distributed COM ("DCOM"), which makes it easy to construct distributed applications.
- x. COM components can be embedded in / linked to your application's user interface and also in/to stored documents (Object Linking and Embedding "OLE", "Compound Documents").
- xi. There is a wealth of readily available COM components for many different purposes.

2.8 Literature Conclusion

Basing on the literature from other writers, the system would improve the NGOs' day to day activities easing its managerial status and outlining the usefulness of application systems.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter introduced the tools, techniques and methods of acquiring data and analyzing data for user requirements, to be used in the proposed system.

3.1 Target population

The target group included: Senior managers, administrators and clients of Trias Uganda.

3.2 Sampling selection

This involved the categories of persons who would participate in the collection of data, that is key informants or personalities and users who would interact very closely with the system. These included two senior managers, one administrator and ten clients of the organization.

3.3 Data collection tools

Interviews, observation and questionnaires were used to collect data. The sample to be selected was interviewed following some already set questions. Questionnaires were given to the selected sample. Time was set for them to fill easy and straight forward questions. The collected data from interviews and questionnaires was analyzed using Statistical Package for the Social Sciences (SPSS). SPSS is a computer program majorly used for survey authoring and deployment (IBM SPSS Data Collection), data mining (IBM SPSS Modeler), text analytics, statistical analysis, and collaboration and deployment (batch and automated scoring services).

3.3.1 Interviews

These are formal meetings where the analyst attempts to obtain information by asking questions. Interviews are used to get data on produces and operations, verify understanding of the system

and to build user confidence in the new system. The two senior managers and one administrator were interviewed as far as the concept was concerned.

Advantages of Interview

- i. First hand information access is possible.
- ii. Interviews make the researcher feel as though she/he is part of the system.
- iii. The researcher can clarify on certain questions and thus they are more flexible compared to other methods.

Disadvantages of Interviews

Interviews demand a lot of time in that appointments have to be made with the interviewee and in some cases are impractical because of preoccupation of some members.

3.3.2 Questionnaires

This is a written document that is used to gather data from a large number of people in the same region. The users are sometimes remote from the analysis, making them inaccessible due to work related conditions. In these circumstances are used to gather facts, attitudes and some suggestions about the system. Ten clients of the organization were served with questionnaires.

Advantages of questionnaire:

- i. The questionnaire is answered quickly. People finish juicily and return them at their convenience.
- ii. Questionnaires prove to be relatively cheap in gathering the information.
- iii. Response comes very fast.
- iv. The researcher finds out that questionnaires allow individuals to maintain anonymity, therefore individuals provide real facts rather than what their bosses want them to tell us.

Disadvantages of questionnaires:

- i. The number of respondents is low as compared to what is expected.
- ii. There is no guarantee that an individual will answer or elaborate on all questions.
- iii. There is no opportunity for a respondent to clarify on vague answers.
- iv. Good questionnaires are hard to design.

3.3.3 Observation

This method was also employed such that the researchers acknowledge the flow of activities in the organization. The researcher stationed at the organization's branch in Muyenga, Kampala for some duration of time and silently monitors the various activities from within the organization and amongst which were; how clients gave in their employment, personal and debt information, how they were registered in the manual organization system and how other tasks were handled within the organization.

3.4 Development Methodology

The following steps were used to develop the system under study.

Preliminary investigation: This phase was conducted for the purpose of determining the cost of operation on the old systems and the cost expected for the new system. The problems with the old system were identified through interviews and questionnaires. Finally, a suggestion to develop the computerized system was made and a report submitted to management.

Systems analysis: The data gathered from the above phase was arranged and prioritized. From the findings of the study, a system's specification was made stating what the system should do to meet the library goals.

Systems design: Defining of the architecture, components, modules, interfaces, and data for the system to satisfy specified requirements were fulfilled.

Logical design: This took an abstract representation of the system's data flows, inputs and outputs of the system.

Physical design: Shown were the actual input and output processes relating to the system proposed.

The Registration Information Management System for Focal Persons' Details of Trias Uganda was a system to be developed hence abided to System Development Life Cycle (SDLC). SDLC had:

- System Requirement and Specification phase
- System Analysis and System Design phase
- System Implementation phase where user interface and the application programs (coding) that use and process the database were designed and implemented
- Testing Phase where the developed system was tested

3.5 Conclusion

The system developed structured on a constructive well defined system methodology and reliable fact finding techniques.

CHAPTER FOUR

SYSTEM ANALYSIS, DESIGN AND IMPLEMENTATION

4.0 Introduction

This chapter focused on the analysis of the data generated during the course of the field study, the system, in addition to the design and implementation of the system. The field results were achieved by descriptive statistics and presented using SPSS.

4.1 Fact finding analysis

Most significant data presented and illustrated below was analyzed from 13 respondents' (2 senior managers, 1 administrator and 10 Clients) questionnaires gathered from the survey.

4.1.1 Scope regarding occupation of respondents

The respondent's scope comprised of 6 registered clients, 3 staff members and 4 non registered clients as illustrated in the table below.

Occupation of respondent				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid student	6	46.2	46.2	46.2
r. clients	3	23.1	23.1	69.2
n. r clients	4	30.8	30.8	100.0
Total	13	100.0	100.0	

Table 4. 1: Respondents' occupation

Source of primary data used: refer to Appendix A showing questionnaire

From the table above, the sample selection covered respondents who interfaced the traditional organization system and were critical in accelerating the design and implementation of the proposed system.

4.1.2 Views about procedures for organized client registration follow up

The figure below represents respondents' views about procedures for organized client registration follow up in the traditional system at the Trias Uganda.

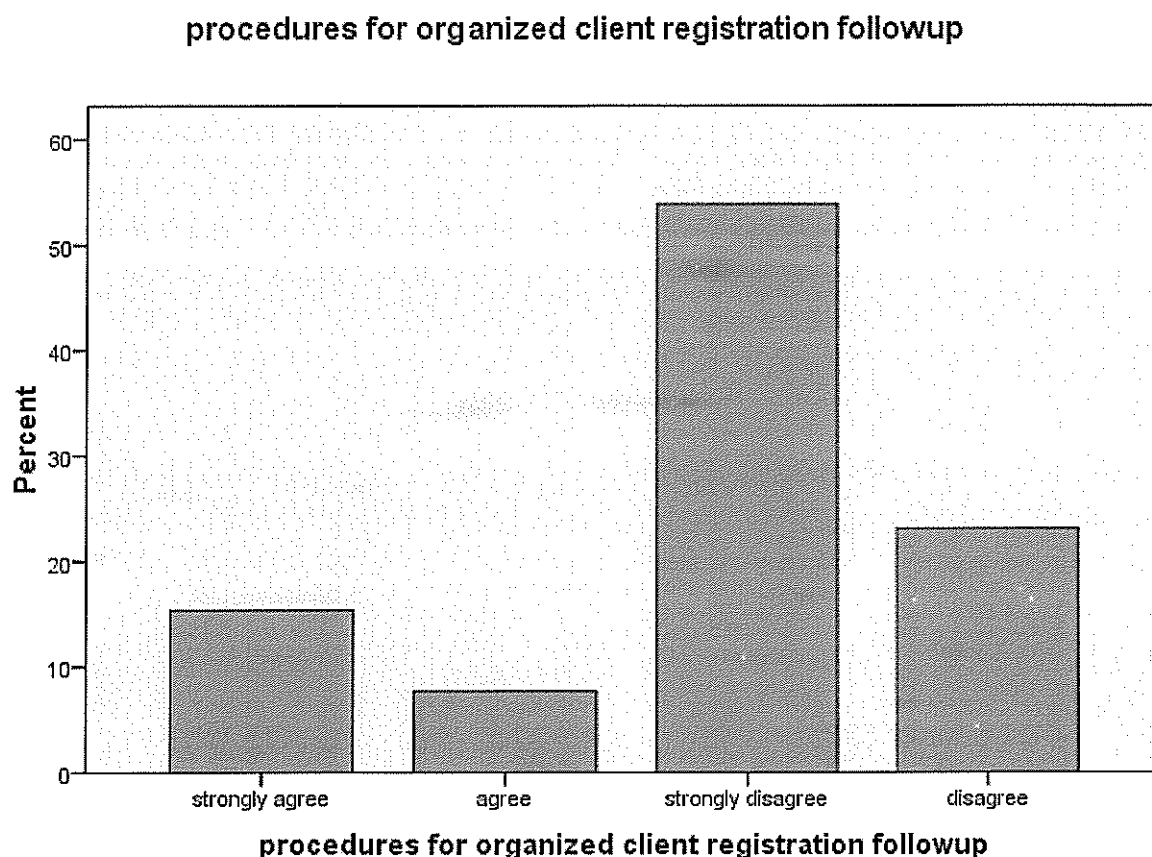


Figure 4. 1: Respondents' views about registration follow up

Source of primary data used: refer to Appendix A showing questionnaire

According to the research conducted; majority, 53.8% strongly disagreed and 23.1% disagreed on the existing procedures for organized client registration follow up resulting in the need to implement the proposed focal person's details registration system for Trias Uganda. Minority of the respondents strongly agreed and agreed (15.4 and 7.7% respectively).

4.1.3 Respondents view about the impact of the designed system on cost of operation

A table that shows respondents views regarding cost of operation of the system designed.

Impact of designed system on cost of operation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	7	53.8	63.6	63.6
	Bad	2	15.4	18.2	81.8
	not decided	2	15.4	18.2	100.0
	Total	11	84.6	100.0	
Missing	System	2	15.4		
Total		13	100.0		

Table 4.2: Respondents’ views about the impact of designed system

Source: primary data from Appendix A showing questionnaire

According to the table above, majority of respondents (7) generally viewed the impact to be good. The advantages of offering automated clients/focal persons’ registration alternatives would begin to appear, streamlining routine organizational business processes.

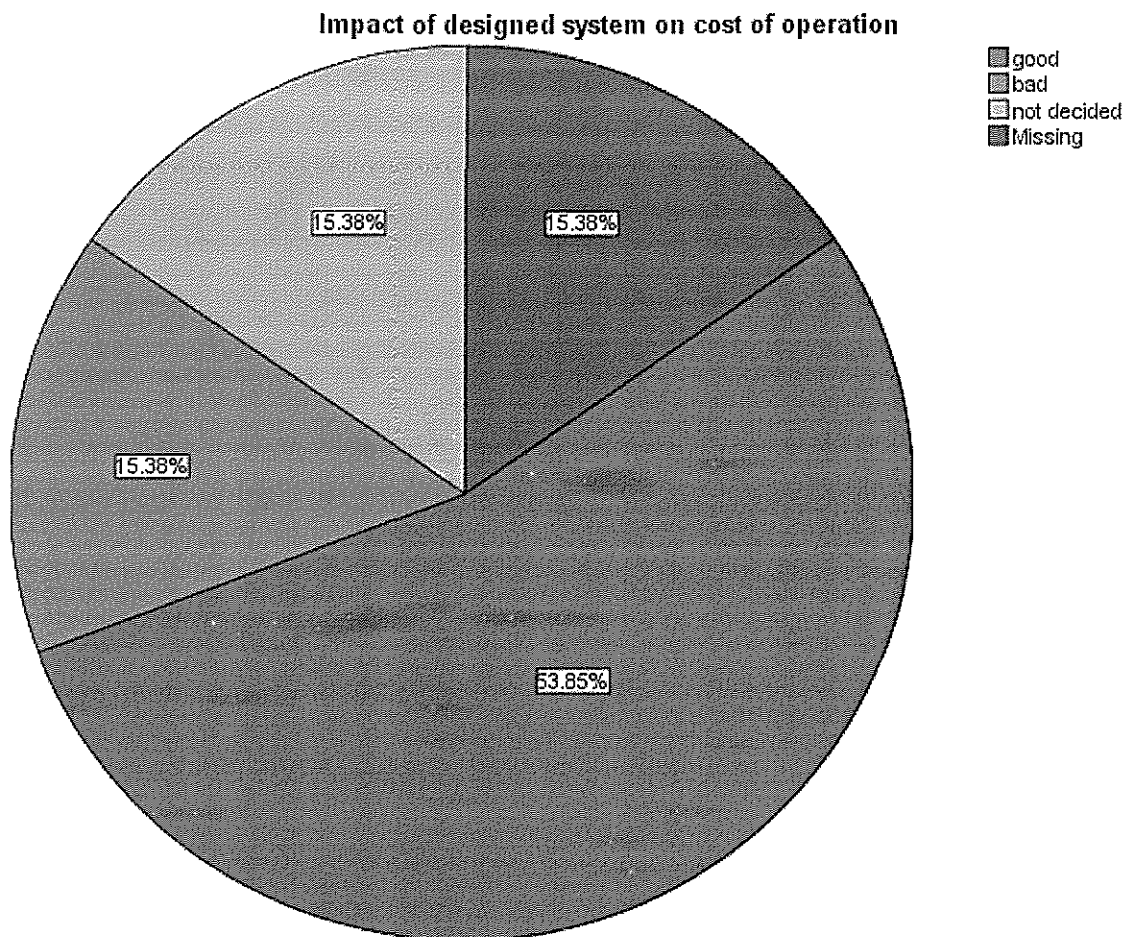


Figure 4.2: Impact of designed system on cost of operation

Source 1: primary data from Appendix A showing questionnaire

The figure above reflects results from table 4.2 showing the impact of the designed system on cost of administration.

Thus from the survey undertaken, the results reflected that there was need to automate the functions of the organization by developing a Registration Information Management System for Focal Persons' Details of Trias Uganda that would eliminate significant problems in the manual organizational system.

4.2 System and requirement analysis

4.2.1 User requirements

Through the data gathering process the researcher found out that users wanted a system with the following attributes.

- i. A user friendly system, one that is easy to learn and use.
- ii. A secure system where the rights of the administrator and the members are clearly defined.
- iii. A consistent system. Consistency to a clear step by step navigation through the system.
- iv. A system that can generate report for the administrator review.

4.2.2 Functional requirements

The system should perform the following functional requirements

- i. Generate reports for the administrator to review
- ii. Allow administrator to insert, update and delete data from the database containing organization's records.

4.2.3 Non Functional requirements

- i. Quick response to member search request

4.2.4 System requirements

Information was reviewed from the internet published journals and text books to understand the best suitable system requirements namely:

4.2.1.1 Hardware requirements

General hardware requirements to the system

Hardware	Minimum system requirements for the sever	Minimum system Requirements
Processor	Intel Pentium (iv) AMD Cyrix, Intel Celeron	Intel Pentium (iv)
Cycle speed	500mhz	200mhn
Memory RAM	8GB	128MB
Disk space	5 GB	1GB

Table 4.3: showing hardware requirements for the proposed system

4.2.1.2 Software requirements

Software requirements of the new system

Software	Minimum requirements
Operating system for the server	Windows XP or 7 or Server 2003
Operating system for the members' computer	Windows XP or 7
Database management system	MS Access 2007 and Higher version

Table 4.4: showing software requirements for the proposed system

4.3 System Design

This took a look at which system was to be designed replacing the existing system at the organization.

4.3.1 Proposed System

The designed system embodies automotive focal persons' details registration to fully access services provided by the organization in coupled to generate reports for administrative review. The context diagram and data flow diagram were constructed from the information contained in the specification document.

4.3.2 Architectural Context Level Design

This gave a high level of the review of the system with the main system and services it provides and how users communicate to the system.

At this stage of the system development, the focus is put on the definition of central architecture of the system. One of the major interests was the identified with their respective interface. The product at this stage is the architectural model identifying the different components of the system. The figure below shows the context level diagram of the proposed system.

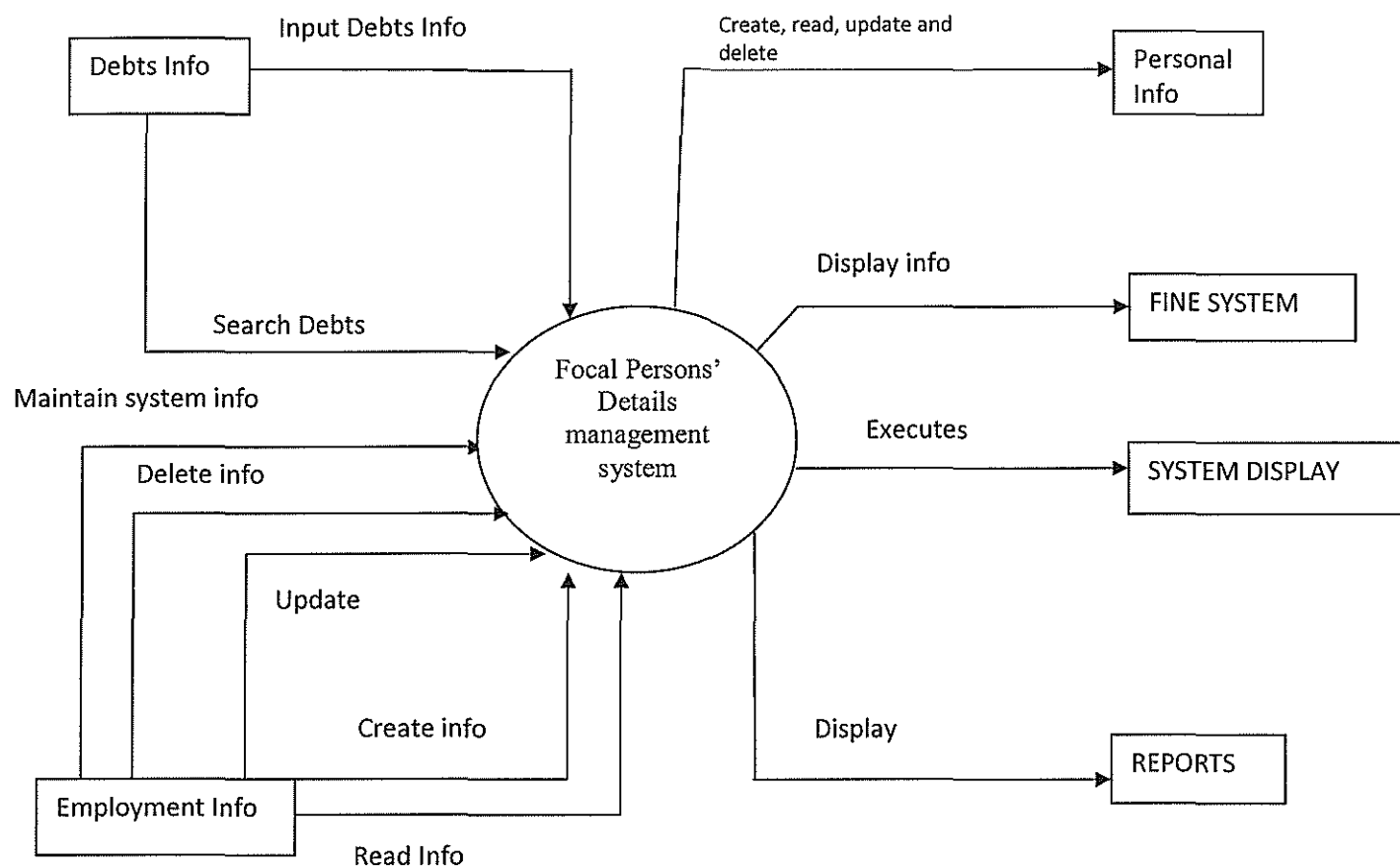


Figure 4.3: Context Level Diagram

4.4 Database Design

The database design was divided into two stages. First, a conceptual design was defined using the Entity Relationship Diagram Model, which has the purpose of mapping the identified information into database entities, attributes and their relationships. Second, an implementation design was described, which lists all the actual entities needed to hold the information defined in the conceptual design. The major objective of the conceptual design was to integrate the different pieces of information coming from the users into a consistent model, in which entities and relationships were explicitly declared.

4.4.1 Conceptual Design

Conceptual design follows requirements analysis; it yields a high level description of data to be stored in the database. The data model was produced that defined the relevant entities, their attributes and relationship from which a context diagram was developed. Entities and relationships were identified to come up with an entity relationship diagram as shown in the next figure.

Entity Relationship Diagram

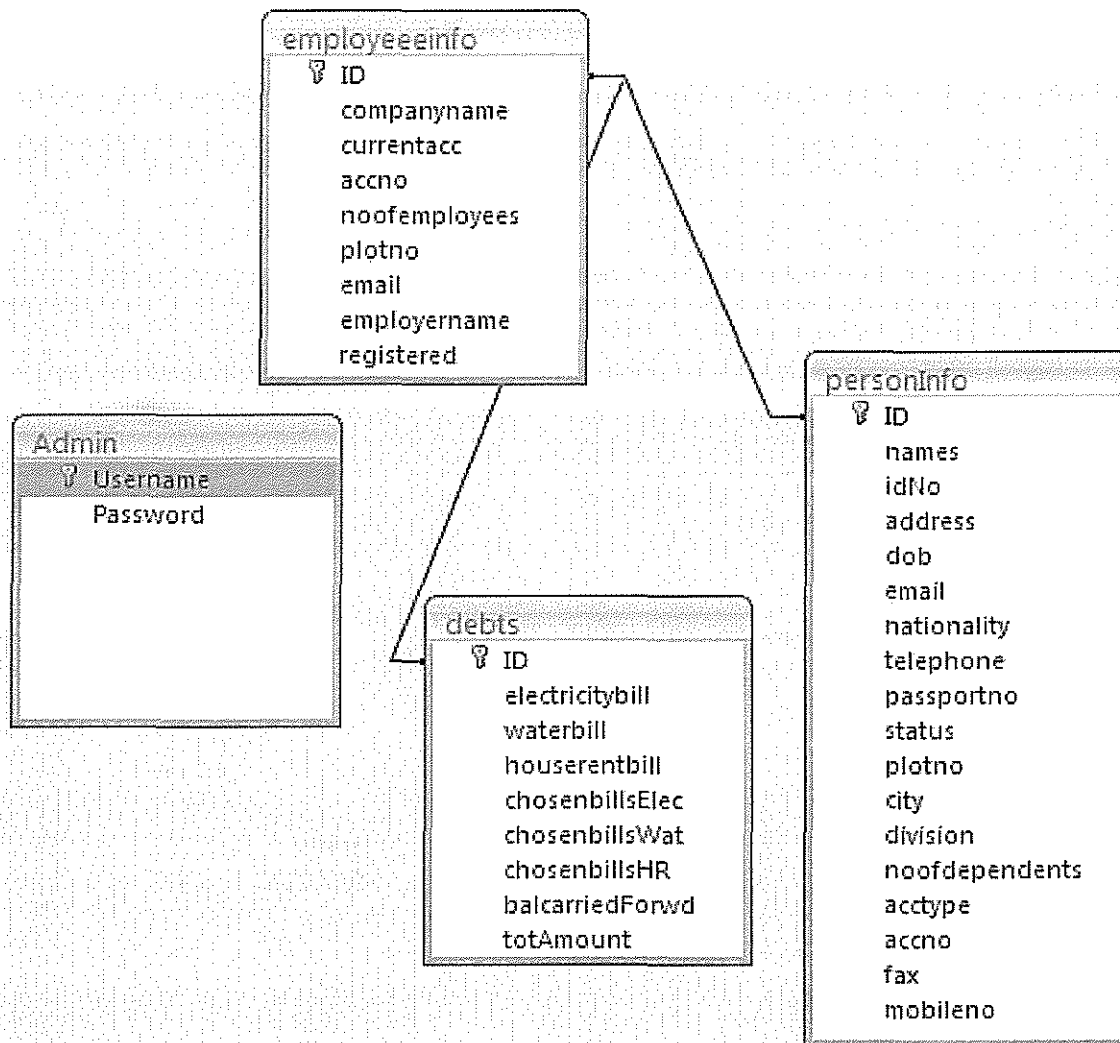


Figure 4.5: Entity Relationship Diagram

4.4.2 Logical Design

This involved mapping relations to avoid redundancy in the designed database. By use of the entity relationship model and following the integrity constraints (entity integrity and referential integrity) to ensure consistency, entities and relationships were mapped.

Mapping Relations

Strong Entity and One-to-Many Relationships

- employeeinfo (**ID***, companyname, currentacc, accno, noofemployees, plotno, email, employername, registered)
- personalinfo (**ID**, names, idNo, address, dob, email, nationality, telephone, passportno, status, plotnocity, division, noofdependents, acctype, accno)
- debts (**ID***, electricitybill, waterbill, houserentbill, chosenbillsElec, chosenbillsWat, chosenbillsHR, balcarriedForwd, totAmount)
- admin (**username**, password)

4.4.3 Physical Design

This illustrates the data dictionary, which consists of the table fields, the size of characters allowed and the description of the field in the table.

Data Dictionary

The data dictionary defines the basic organization of the database; the database consists of several tables which contain entity records that include their data type, font size and field.

Data was captured in the MS Access database and is categorized as follows:

Employeeinfo

The figure 4.6 below shows an entity that stores employee information details regarding fields of id (primary key and foreign), companyname, currentacc, accno, noofemployees, plotno, email, employername and registered. It also describes the data type and other field descriptions.

employeeinfo			X
Field Name	Data Type	Description	
ID	AutoNumber		
companyname	Text		
currentacc	Text	Current Account	
accno	Text	Account Number	
noofemployees	Number	Number of Employee	
plotno	Text	Plot Number	
email	Text		
employername	Text		
registered	Text		

Figure 4.6: Entity employeeinfo

Personalinfo

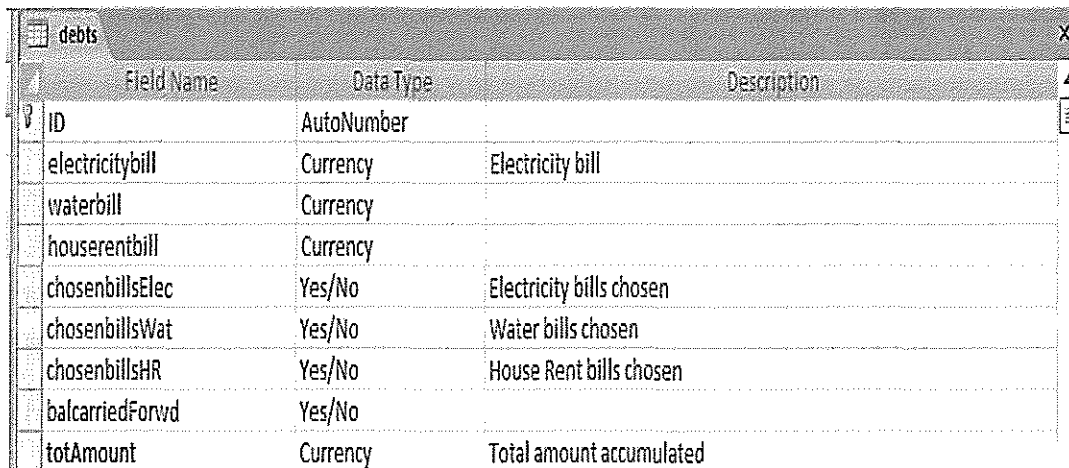
The figure 4.7 below shows an entity that stores personal information from focal persons. Fields include ID (primary key), names, idNo, address, dob, email, nationality, telephone, passportno, status, plotnocity, division, noofdependents, acctype and accno. It also describes the data type and other field descriptions.

personInfo			X
Field Name	Data Type	Description	
email	Text		
nationality	Text		
telephone	Text		
passportno	Text	Pass port Number	
status	Text		
plotno	Text	Plot Number	
city	Text		
division	Text		
noofdependents	Number	Number of dependants	
acctype	Text	Account Type	
accno	Text	Account Number	
fax	Text		

Figure 4.7: Entity readers

Debts

The figure 4.8 below shows an entity that stores debts information of focal persons.

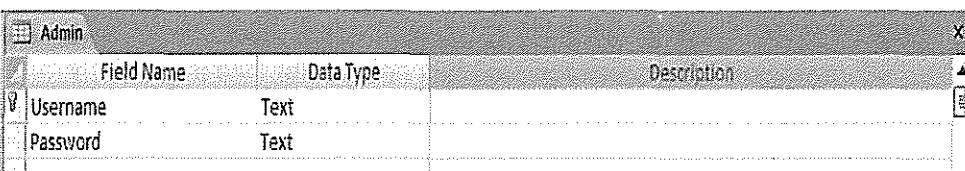


Field Name	Data Type	Description
ID	AutoNumber	
electricitybill	Currency	Electricity bill
waterbill	Currency	
houserentbill	Currency	
chosenbillsElec	Yes/No	Electricity bills chosen
chosenbillsWat	Yes/No	Water bills chosen
chosenbillsHR	Yes/No	House Rent bills chosen
balcarriedForwrd	Yes/No	
totAmount	Currency	Total amount accumulated

Figure 4.8: Entity debts

Admin

The figure 4.11 below shows an entity that stores information regarding system users. Users are administrators only. Fields include username and password. It also describes the data types of the fields.



Field Name	Data Type	Description
Username	Text	
Password	Text	

Figure 4.9: Entity admin

4.5 Implementation

During implementation, the database and user interfaces were created. The user interfaces were developed to input data, to process and output information. The database was developed for storage of information. The frontend layer of the system design is the VB user interfaces. They

4.6.1 Security

To ensure security, access to the system is granted to only authorize administrators requiring usernames and passwords. This is shown by the login interface the user interfaces with as illustrated in figure 4.10.

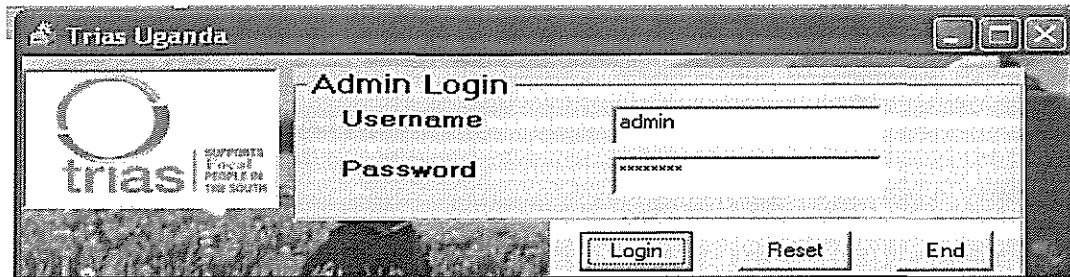


Figure 4.10: Login credentials form for admin user

4.6.2 Other interfaces

These are user friendly system interfaces that allow the administrator of the system to manipulate the system regarding reading, creating, updating and deleting information from the database in coupled to viewing reports. Members are all entitled to view reports.

These User interfaces of the designed System can be accessed in the [Appendix C](#).

5.2 Conclusion

The designed system eases Focal persons' details registration management and tracking. It stores reliably Focal persons' details registration Information .It also gives the administrator the ability to effectively manage the data. Henceforth the management shall be further empowered to define operationally relevant concepts in controlling the worker registry.

This research also gives academics an insight in relevant parameter settings and insight in models needed to improve and elevate Focal persons' details registration Information management systems.

5.3 Recommendations

In order for Trias Uganda to achieve the stated objectives, it needs to put in place the following:

- To provide on the availability of the system to the registered clients this can be achieved through hosting the developed Focal persons' details registration system.
- A back up plan must be put in place to safe guard data loss. This helps to keep the data safe and in case of any system failure it can be retrieved back.
- To improve on the quality of computing, the management of Trias Uganda must employ highly skilled competent professional data managers to manage the Focal persons' details registration system
- Training workshops aimed at sensitizing Trias Uganda staff and other key decision makers about the Focal persons' details registration management system.

5.3.1 Limitations of the study

Some of the limitations faced included:

- Financial constraint.
- The limited time: Scope of this project neceinitated me to have at least 12 months of through findings. I was only able to use 6 months.

- Lack of enough training, the importance of user inputs should be under rated, indeed sometimes systems do fail because their components and functions are not clearly in terms of user objectives and do not adequately control.

5.3.2 Future works

Certainly I did not accomplish all I intended to do. This can be attributed to time and resource constrain. Future work will be integrating the designed system online for more organizational branches to access.

APPENDICES

APPENDIX A

A questionnaire used in survey

Dear respondent,

The researcher kindly requests you to fill this questionnaire below to facilitate the research study to a success.

- PLEASE feel free and give the important information as required to make the project feasible.
- Your information will be treated and kept with a lot of confidentiality, great care and will be highly appreciated.

Much regards:

1) Your occupation

- Client ☐
- Staff ☐
- Other ☐

2) Age bracket

16 – 20 ☐, 20 – 25 ☐, 25 – 30 ☐, 30 and above ☐

3) Gender

- Male ☐
- Female ☐

4) Your education level

- masters ☐
- degree ☐
- diploma ☐
- Others ☐

5) Are there procedures for organized client registration follow up? (*please tick where appropriate*)

- Strongly agree ☐
- agree ☐

- Strongly disagree ☐

- disagree ☐

6) Is the organization ready to fund this project? *(please tick where appropriate)*

- agree ☐

- Fair ☐

- Disagree ☐

- not decided ☐

7) What is the level of computer literacy in the organization?

- Good ☐

- Average ☐

- Poor ☐

8) What do you believe will be the impact of the designed system on the cost of operation (administration)? *(please tick where appropriate)*

- Good ☐

- Bad ☐

- Not decided ☐

Your support is highly appreciated.

Thanks

APPENDIX B

Sample interview questions for senior managers

Interview Guide for knowledge acquisition

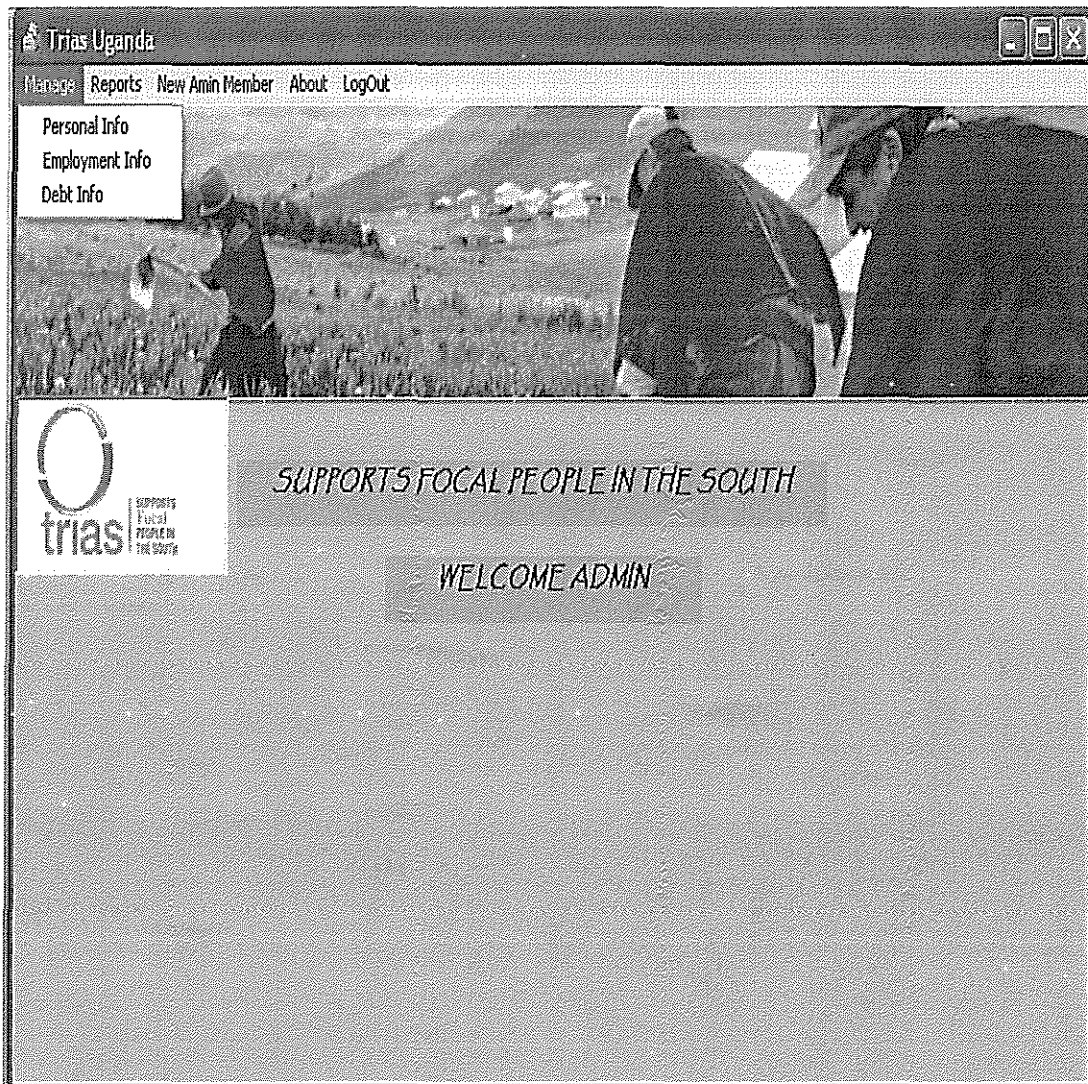
- Establishing whether the organization would be comfortable with change of old to new system or needs no change of system
- Determine the minds of staff towards the new system to be implemented.
- Determine the skill of computer usage among the staff
- What measures are in place regarding backup of files?

Thanks.

APPENDIX C

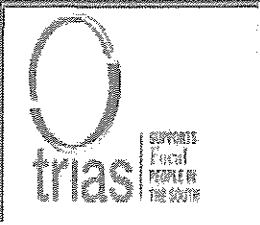
Sample screenshots

System main menu



Personal information form

Personal Information



SUPPORTS FOCAL PEOPLE IN THE SOUTH

Person's Names:	kiggundu M	Plot No.:	112g
ID No.:	KIU123	City/Town:	kampala
Address:	p.o.box 112	Division:	makindye
Date of Birth:	12/ 7 /1987	No. of Dependents:	3
Email Address:	kig@hotmail.com	Account Type:	Personal Acc
Nationality:	uganda	Account No.:	Ac112889
Telephone:	22211111	Fax:	2342222
Pass Port No.:	b0441556	Mobile No.:	23333
Status:	single		

Save

Add New


Previous

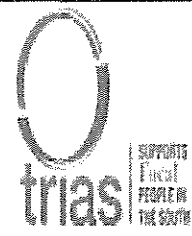
Next

Cancel

Delete

Employee information form

 Employment Information [-] [max] [x]



SUPPORTS FOCAL PEOPLE IN THE SOUTH

Company Name:

Current Account: Employer's Name:

Account No.: Is Company registered?:

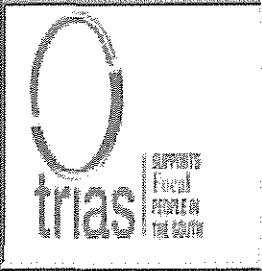
No. of Employees:

Plot No.:

Email Address:

Debts information form

Current Debts Information



SUPPORTS FOCAL PEOPLE IN THE SOUTH

Electricity Bill (UG SHS):
50000

Water Bill (UG SHS):
30000

House Rent Bill (UG SHS):
100000

Electricity: ☒

Water: ☒

Rent: ☐

Balance Carried Forward from the above bills:
☐ Yes ☐ No

Total Amount:

Save

Add New

Previous

Next

Cancel

Delete


Design and Implementation of Focal Persons' Details Information Management System by Kiggundu Eryeza

42

Sample report for employee information

Employment Info Report

Zoom 100%

 **TRIAS UGANDA**
PO Box 5617 Kampala, Uganda
Tel: 00256 41 4266 371

EMPLOYMENT INFORMATION REPORT Thursday, August 09, 2012

ID:	1
Company Name:	omega
Current Account:	Yes
Account No:	ac22111332
No. of Employees:	30
Plot No:	b121
Email Address:	omega@gmail.com
Employer Name:	kato omega
Registered:	Yes

Pages: 1

APPENDIX D

Sample codes

Login vb script

```
Option Explicit
Public LoginSucceededAs Boolean
Private Sub cmdCancel_Click()
    'set the global var to false
    'to denote a failed login
    LoginSucceeded = False
    Me.Hide
End Sub
Private Sub cmdOK_Click()
    'check for correct password
    If txtPassword = "" Then
        'place code to here to pass the
        'success to the calling sub
        'setting a global var is the easiest
        LoginSucceeded = True
        Me.Hide
        frmMDI.Show
    Else
        MsgBox "Invalid Password, try again!", , "Login"
        txtPassword.SetFocus
        SendKeys "{Home}+{End}"
    End If
End Sub
```

Employeeinfo form vb script

```
Private Sub Command1_Click()
    Adodc2.Recordset.Save
End Sub
Private Sub Command2_Click()
    Adodc2.Recordset.AddNew
End Sub
Private Sub Command3_Click()
    On Error Resume Next
    Adodc2.Recordset.MovePrevious
End Sub
Private Sub Command4_Click()
    On Error Resume Next
    Adodc2.Recordset.MoveNext
```

```

End Sub
Private Sub Command5_Click()
Me.Hide
frmMain.Show
End Sub
Private Sub Command6_Click()
confirm = MsgBox("Are sure you want to delete this record?", vbYesNo + vbExclamation,
"Deletion confirmation")
If confirm = vbYes Then
Adodc2.Recordset.Delete
MsgBox "Record deleted!", , "Message"
Else
MsgBox "Record not deleted!", , "message"
End If
End Sub
Private Sub Command7_Click()
Unload Me
End Sub

```

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