# A DATABASE MANAGEMENT AND INVENTORY SYSTEM.

## CASE STUDY: CHRISTIAN SCIENCE CHURCH KAMPALA.

*BY:*

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**A PROJECT REPORT SUBMITTED TO THE SCHOOL OF COMPUTER STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENT**

**FOR THE A WARD OF BACHELOR'S DEGREE IN**

**INFORMATION TECHNOLOGY OF**

**KAMPALA INTERNATIONAL**

**UNIVERSITY.**

**JULY, 2011.**

## DECLARATION.

I **Mugabi Raymond-BIT/10034/81/DU** hereby declare that this project Report is my original work and has never been submitted to any Institution of higher learning or University by any student.

Sign: ..... Date: 01/07/2011

## APPROVAL.

The following project Report by **Mugabi Raymond - BIT/10034/81/DU** under the title "Database management and inventory system for "Christian Science Church of Kampala" has been under my supervision and is now ready for submission to the school of computer studies Kampala International University in my approval.

Supervisor: Date:

..... 1/7/2011

**MISS. KASUUBO ESTHER.**

## DEDICATION:

I dedicate this project Report to my dear family of Mr. and Mrs. Balinabo, not forgetting my dear friends: Jackson Onyango, Maureen Kirabira and Lamech Katamba who have been quite supportive to me and have been encouraging and sacrificed their time for me in all ways round.

## ACKNOWLEDGEMENT.

This project would have not been completed if it had not been for the support and encouragement of the following people.

First and fore-most, Special thanks to my dear- caring supervisor **Miss Kasuubo Esther** for her distinguished guidance and patience throughout the project.

I would like also to thank my beloved family members for the support, encouragement and their patience for me during the three years in the University.

Finally I thank all friends at the University and more so my course Mets of Bachelor in Information Technology class 2008-2011 academic years, though it looked a joke at the beginning.

## ACCRONYOMS, ABREVATIONS AND DEFINITONS.

| | |
|---|---|
| CSC: | Christian Science Church. |
| DBMS: | Database Management System. |
| SQL: | Structured Query language. |
| System: | A set of components which interacts to accomplish a task. |
| ABF: | Albert Barker Fund. |
| DBA: | Database Administrator. |
| PC: | Personal computer. |

## ABSTRACT.

The purpose of this project is to develop a database management and inventory system for Christian Science Church (CSC). This will be used to meet the objectives of the system users.

Observation, interviews, and studying of current system were carried out which enabled the researcher to get information from the sample population, secondary and primary sources of information were used.

The findings indicate various reasons to use a database system like reducing costs. There were various recommendations put forward to guide in the proper use of the system to avoid any discrepancy that may arise.

Despite an increase in the services offered and the number of members, it has not yet been supported by any automated system. The church uses manual systems in carrying out its activities like registration, storing data, updating recorded data

CONTENTS:

# CHAPTER ONE

## 1.0 INTRODUCTION.

This chapter comprises of the background of the study, the problem Statement, the main objective of the study, Research questions, Scope, and significance of the study.

### 1.1 Background of the case study.

Christian Science Church (CSC) is one of the outstanding branches of the Mother church with head offices in Massachusetts-Boston-United States of America (USA).

The church is located in central division on Bombo road at YMCA Kampala Uganda about a half a kilometer away from the city center. Miss Arian from USA and Lecturer Ggodons of Makerere University from USA started it in 1976.

The church started with just 12 members and with an average of at least 7 visitors every Sunday who later on kept becoming members after four-eight times of visitation to the church on Sundays. The members used to hold their Sunday services in a very small room. However the church has gradually expanded to around 500 confirmed members with an average of 100 regular and fully registered members in every Sunday services. Other than Sunday prayers, they offer Sunday school services at the church and nursing training to chosen members.

It also collaborates with the Albert Baker Fund (ABF) in USA and sponsors members registered to the mother church who face tuition payment problem.

However, with such a gradual development, the church has a vision of advancing into a highly developed and expanded church as per the international standards with other branches in countries like Kenya, Canada, and South Africa and London city.

## 1.2 Problem statement of the study.

The manual system used is very inefficient to lift up the performance of the church as evidenced by the members' missing records, re-registration of members, poor data entry methods. Despite management's effort to improve the standards of the church, if no action is taken, the church is likely to lose its data and members, reputation and competitive advantages it has over the other branch churches the more.

However, this research project has established a user friendly and secured database and inventory management system as a solution to the problems in the Christian Science branch church.

## 1.3 The main objective of the research.

The main purpose of the study is to develop a secure and user-friendly database and inventory management system for the branch Christian Science Church of Kampala.

## 1.4 Other research objectives.

- ✓ To develop a faster system that allows more administrative work compared to the existing manual system.
- ✓ To establish an economical system that will save resources like reduction on the stationary quantity used for the Christian Science church (CSC) activities.
- ✓ To design and implement an automated system for enhancing efficient management for Christian Science church data with enough security.
- ✓ To establish a system that supports faster decision-making, this will not require the staff to look through the files manually.

## 1.5 Research Questions.

a. How can the Christian Science Church improve on the time management in administrative processes?
b. How can the church reduce on the costs spent on the stationary?
c. How can the church improve on the data management efficiency?
d. In what ways can the church fasten on decision-making processes?

## 1.6 Scope of the study.

The study was majorly focused on designing a database for the Christian Science church branch in Kampala Uganda.

Geographically, the study was carried out in Christian Science church of Kampala at YMCA. The study was focused on database management system and inventory management efficiency. The researcher looked at the impact of having a database management in place.

The study looked at the period from 2008-2011.

## 1.7 Significance of the study.

i. The successfully designed, developed, and implemented system saves time for more administrative work.
ii. The study helps the church to be able to make faster decisions and accurately.
iii. The fully, designed and implemented system ensures speed and accuracy in the data management of the church.
iv. The system greatly cuts down the expenses on the stationary resources compared to the manual system.
v. The study will help the researcher to attain an under graduate degree.

## 1.8 Conceptual Framework of the design.

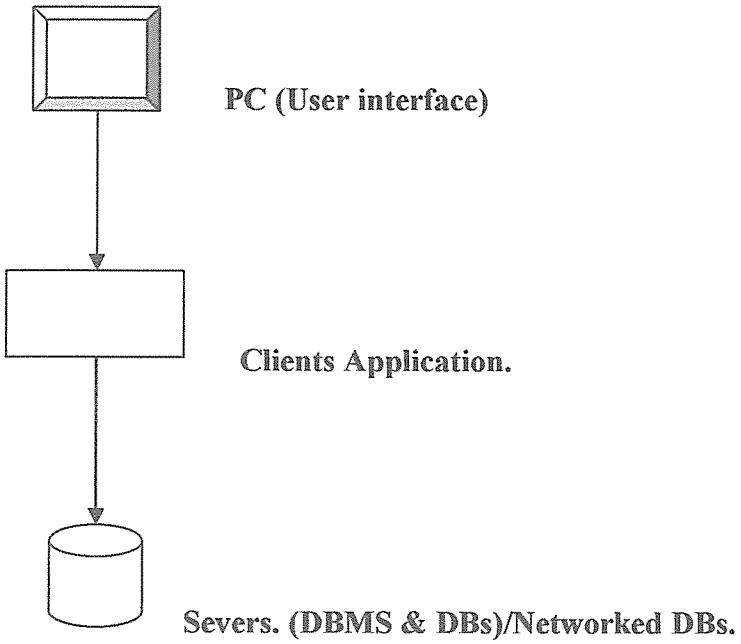



*FIG: 1 Database Conceptual frame work.*

The database system has two part structures that is;

i. One consisting of a server also called the back end.

ii. A set of clients' applications also called front end.

1. The personal computer (PC) provides the user interface for the data clerk to interact with the system while performing his duties.

2. The server contain the Database, Database Management system and supports all of the basic Database Management system function like data definition, data dictionary and performance, data manipulation and execution, Data recovery and currency.
3. The clients Application contains the various programs that run on top of the DBMS. Both user-written applications and built in application (Applications provided by the DBMS vendors or by some third party)

# CHAPTER TWO.

## LITERATURE REVIEW.

### 2.1 INTRODUCTION.

This chapter analyzed the different sources in relation to subject study. This Literature introduced databases as drawn from a number of sources acknowledged.

### 2.2 Manual system:

This is a process of producing a number of separate systems each with its program suit, its own file, inputs, and outputs by an individual without using a computer. S. French (1990).

Saleam (1990) alleged that record keeping takes more time than it is worth simply because it is very tiresome and involves making many mistakes when it is done manually.

### 2.3 Critics of a manual system.

Information provided by manual system does not give a complete picture since information is obtained from a series of separate file therefore making it less valuable with a manual system data may be easily duplicated into two or more files creating un necessary maintenance and hence inconsistency.

### 2.4 Database application.

*A database application*: is a type of computer application dedicated to managing a database. Database applications span a huge variety of needs and purposes, from small user- oriented tools such s an address book, to huge enterprise wide systems for tasks like accounting. Nicholas Taylor (2002).

The term "database application" usually refers to software providing a user interface to a database. The software that actually manages the data is termed as a database management system (DBMS) or (if it is embedded) a database engine

DBMS; Refers to the software that enables better management to the collection of related records.

Database management systems are usually categorized according to the data model that they support, relation, object-relational, Network and so on. The data model will tend to determine the query languages that are available to access the database. A great deal of the internal engineering of a DBMS, however is independent of the data model, and is concerned with managing factors such as performance, concurrency, integrity and recovery from hardware failures. In these, there are large differences between products.

Examples of database applications include MYSQL, Microsoft Access DBASE File maker, ORACLE, Informix and (to some degree) in March 2004, AMR research sited in the 'references' section predicted that open source database applications would come into acceptance in 2006.

A database is an organized collection of data. The term originated with in the computer industry but its meaning has been broadened by popular use to the extent that the European database directive (which creates intellectual property rights for database) includes non-electronic database within its definition.

Paul argues that database is an integrated collection of logically related data elements.

Database consolidates records previously stored in separate files into a common pool of data element that provide data for many operations.

Its back –end affords data in putting and updating a database is usually but not necessarily stored in same machine-readable format accessed by a computer.

There are wide varieties of databases, from simple tables stored in a single file to very large database with many millions of records, stored in rooms full of disk drivers or other peripheral electronic storage devices.

Database resembling modern versions were first developed in the 1960s; A pioneer in the field was 'Charles Bechman.'

**2.5 Advantages of using the database application.**

- Ease of setting up: Databases do not require programming in a low-level language to set them up, and in many cases, a working prototype of the required systems can be developed quickly, allowing users to be invoiced with design of the system and capturing of data before the final system is anywhere near fully developed.
- Lower maintenance costs: This is because many of the highly technical aspects are handled by the 'engine' the programmer involved can concentrate on therefore the ongoing maintenance of the database can be significantly lower than those of the system s' design using other methods that the church would have incurred –Xiao Daniel yi (2004)
- Elimination of data duplication: An application with specific processing system will usually capture processes and store much of data as other systems in an organization/church.
- This results in duplication of effort and resource utilization using a database approach some of this data can be used for different applications and so data only needs to be captured and stored. This would help the church in that intruders will not have a clear access to information of the church.
- Increased availability of information due to access of data that is to say church member information is easily retrieved whenever needed.
- There is increased data flexibility: In processing data, most software in an information system that is to say graph drawing programs, spreadsheets and analysis tools have standard data interfaces, which are supported by the main database product, as a result; it is simple to extract data from database and move the data into those programs for subsequent manipulation.

## 2.6 Database models.

There are three main classifications of the database and these include:

### 2.6.1 Relational /Object database model.

In relational model, all data elements within the database are viewed as being stored in form of simple tables, database management system packages base on the relational model has become the most microcomputers DBMS packages, as well as mid range and main from systems James O'Brein (1996).

### 2.6.2 Hierarchical Database.

(O'Brien 6th Edition) alleges that relationship between records in hierarchical database and a hierarchical model is that all records are dependent and arranged in multilevel structures, consisting of one of the relationships among records are ''one-to-many'', since each data element is related to only one element above it.

According to Ralph (1986), hierarchical database has one main record type or node, this node on the hierarchy or tree is the parent node there may be numerous children nodes under each parent node but there can be one parent-node for any one child-node.

### 2.6.3 Object-Oriented model.

Object Data Base Management Systems add database functionality to object programming languages. They bring much more than persistent storage of programming Language object. Object DBMSs extend the semantics of the C+, small talk and Java object programming languages to provide full- future database programming capability, while retaining native language compatibility. A major benefit model of this approach is the unification of the application and database development into seamless data model and language environment. As a result, applications require less code, use more natural data modeling, and code bases are easier to maintain. Object developers can write complete database applications with a modest amount of traditional effort.

**c. Physical database design:**

The physical database design phase allows the designer to make decision on how the data base is to be implemented therefore physical design tailored to a specific DBMS system, their feedback between the physical and logical design because decision taken during physical design for improving performance may affect the structure of the logical database model.

### 2.7.2 Importance of a Database to a Church center.

- According to Lincoln (1986), ADBMS can provide an appropriate tool for systematizing the church's access and use of data. As church center is increasingly growing, it will become also increasingly important to be able to organize and access information when it is needed.
- Minimal database redundancy, in non-database system each application or department has its own private file resulting in considerable amount of redundancy of the stored data, this storage space is wasted by having a centralized database system however, this redundancy can be controlled. (Alexis Leon, Mathew Leon).
- The database administrators can enforce standards and control.
- Security restriction can be applied, having complete authority over the operational database is through proper channels and can define authorization, checks providing identity of who you are can be established for each type of access(retrieve, modify, delete)to each piece of information in the database.
- Integrity can also be maintained when using a database management system. Data originality is implemented, like through backup options provided by the DBMS application.
- Integrity refers to the data in the database with highest degree of accuracy, (Alexis Leon, Mathew Leon).

### 2.7.3 Disadvantages of DBMS.

- It takes a long time to develop a Database management system in terms of planning relationship constraints and user requirements.

- It is expensive to develop and maintain in terms of software, programmers who are expensive in terms of database administration and when updating with the current needs (technologies).
- It is prone to insecurity especially the hackers who might break in to the organization's/church's confidential information.

### 2.8 Element of DBMS.

A database management system consists of several main section, these include the data definition language, data manipulation language and the data dictionary, Data definition Language, Transaction control Language as elaborated bellow:

#### 2.8.1 Data Definition language (DDL)

This is a set of commands that help to define the structure of a database. This involves creating, replacing, alternating, or removing database objects such as tables.

#### 2.8.2 Data dictionary. (DD)

This is a program used to store and organize the data in the database. It is an index of data the database that is used to assist in maintenance and any other access of the data. A special data dictionary software will normally held the dictionary on the computer.

#### 2.8.3 Database Manipulation language. (DML).

This statement allows the manipulation of data within the database. They make use of series of statements like retrieval of information select statement and insert rule.

#### 2.8.4 Transaction Control Language (TCL).

This comprise of commands that are used to manage the changes made by the "Data manipulation language" commands. After a record in Database has been deleted or modified, the changes are not made permanent.

To confirm these changes, the user needs to "commit" these changes, which causes Relational Database Management System to make these changes permanent.

On the other hand, "Rolling back" the changes ensures that data is brought back to the state it was in before changes were made. (State Restoration).

### 2.8.9 Data Control Language (DCL).

This category of commands like the password attributes, give strict access to data in a database.

Password attributes define access to database accounts and privileges as described below:

- **Authentication**: defines the identification of who the person is to access the database.
- **Authorization**: defines the scope of privileges one can access depending on the authentication above. For example what a Database Administrator can access, a staff member cannot access.
- **Audition**: defines what one can manage to modify and delete depending on who is logged in the Database.

However, the structured query language uses "GRANT" statement to give permission and "REVOKE" statement to take back permission from users.

### 2.9.0 Transaction processing activities:

**Transaction processing system** usually involved in the activities of data collection, data manipulation, data storage and data or information generation and output (Geoffrey and Susan 1999)

### 2.9.1 Data Collection:

This is the process of colleting and collating all the data necessary for transaction processing systems.

This data can be collected in a number of ways, such as, electronic or paper based invoices, bar code readers, and scanners.



### 2.9.2 Data manipulation

This is the processing of data transformation by performing calculations on the data. This process may involve sorting, aggregating, classifying, and summarizing the data.

### 2.9.3 Data storage:

This is the process of placing data in the correct and appropriate storage area once it has been through the process of data manipulation.

### 2.9.4 Data or information generation:

This involves outputting information in a form that can be used for immediate decision-making or can be used as an input in other related information systems. Output may take the form of computer screen or hard copy report or it may take the form of a data file.

## 2.10 Data security:

This is the protection of the database against intentional or unintentional threats using computer based or non-based controls. Consequently, Database security encompasses hardware, software, people and data. It is concerned with avoiding the following situations; theft and fraud, loss of confidentiality, loss of privacy, loss integrity, and loss of availability (Connolly 1999)

### 2.10.1 Data protection:

Connolly (1999) describes it as the protection of personal data from unlawful acquisition, storage, and disclosure and the provision of necessary safeguards to avoid the destruction or the corruption of the legitimate data held.

Below are some ways of implementing both data protection and security;

### 2.10.2 Encryption:

The process that ensures that everyone connects the data into a format that cannot be read. Encrypting a database ensures that the database is secure since the encrypted data is only understood by the intended people. (Arnold 2001)

### 2.10.3 Password setting:

The correct password has to be provided in order to open and access tables and other objects in the database. This is the simplest mode of securing the database. (Baily 2002)

### 2.10.4 Information system:

Muneesh Kumar (1998) describes an information system as asset of inter related procedures using information technology infrastructures to generate and disseminate desired information.

Such systems are designed to support decision making by the associated with the enterprise in the process of attainment of its objectives.

### 2.10.5 Conclusion:

With the introduction and implementation of database information systems, it helps to manage the required information with speed and implementation of database information systems; it helps to manage the required information with speed and accuracy such that efficiency in office operation is brought through control over access and manipulation of data.

# CHAPTER THREE.

## METHODOLOGY.

### 3.0 Introduction.

This chapter spells out the system study and investigation. The researcher has designed methods and tools of how to gather and collect the specific requirements of the users and end users of the database software application.

It also looks at the techniques of analyzing and processing data with the application program developed.

Data was collected through the methods of observation, interviews, questionnaires, and document review.

### 3.1 System study and investigation.

The project developer carried out a survey at the Christian Science church to enable the study of clients, staff, and systems to come up with a clarified analysis of information that was generated from various sources hence enabling room for wide description and critical analysis of ideas that were collected.

### 3.2 Research data collection techniques.

The project developer used questionnaires, interviewers, observation, and studying the existing system.

#### 3.2.1 Interview method.

The researcher had to encounter the church clerk face-to-face to answer the project questions.

This was carried out at the church office, in-charge of records about resources at the Christian Science church.

The members of staff were interrogated properly to provide detailed information and process within the church on a Sunday.

### 3.2.2 Studying of the existing system.

The existing Christian Science church database was examined and looked at the information and carried out analysis in relation to the information required during the interview.

### 3.2.3. Observation technique.

The researcher used the naked eyes and personal judgment to analyze a particular requirement of the user.

This technique was effective in identifying those requirements, which could be expressed by the respondents, libraries, academic journals, manuals, as well as textbooks that are very vital to the researchers.

### 3.2.4 System development tools and Applications.

The following computer categories of software were used while developing the system.

a. Visual basic studio version (6.0).
b. MYSQL programming language.
c. Microsoft Access.

# CHAPTER FOUR

# SYSTEM DESIGN AND MODELING

## 4.0 Introduction.

The Current System / System Study puts it that through the earlier data collection processes, interviewing and observing the various users/stakeholders in operation and also how they go about their tasks, problems of storage, retrieving, processing data and keeping track of workflow were examined with the intent of identifying requirements of developing a solution

Systems analysis and design describes in detail the design issues of the new system. With thorough insight into the operations and analysis of all the output requirements of the system, ensures a good design, which is a major step to a successful system development.

## 4.1 Data Model.

A data model is an integrated collection of concepts for describing and manipulating data, relationships between data and constraints on the data in an organization. In the design of this project, the relational data model was used. This model is based on the concept of mathematical notations. Data and relationships are represented as tables, each of which has a number of columns with unique names also known as attributes.

## 4. 2 Database Design

This involved three major activities; conceptual, logical, and physical designs.

### 4. 2.1 Entity Relationship (E-R) Model

This modeling of information flow as used at Christian Science church, independent of the technological and physical considerations. During the exercise, the following were generated; Context diagram shows the external entities that interact with the system, as indicated below. Under the current system, any visitor can enter the office and meet anyone they intend to see, without any records being made about the visit. However, visitors are noted and their details recorded for report generation purposes. The church staff can visit without records being taken of whom, when, and where they are going /coming from and what time they are expected back may

not be known. The data gathered at reception level is recorded in a notebook from which it is retrieved for further analysis and report generation. This compromises security and availability for the litigate users.

**Entity Relational / Object diagram**

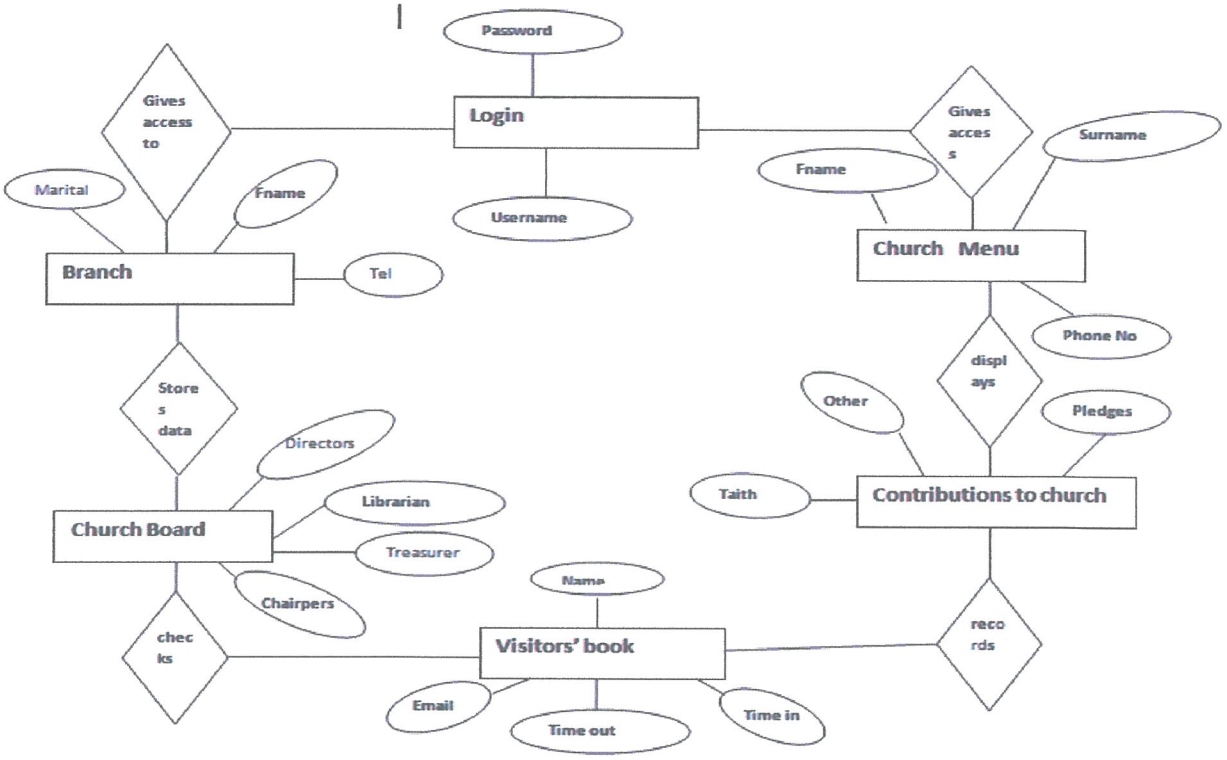



**Fig.4.1 Entity Relationship Diagram.**

The receptionists on duty receive visitors who come to the church. These facilitate the in directing them to the relevant locations and destinations of their choice but in the process, the receptionist captures the primary information from him or her designating the reason, the person to be visited.

### 4.2.2 Logical Design

The database design considered a normalized approach to all the tables and relations, and it was conducted as follows; The objective of normalizing relations was to ensure that relation is structurally consistent, logical and has minimal redundancy. The primary design objectives were

as follows; to eliminate data redundancies; ensure easy system maintenance; ensure easy implementation of database enhancements; enable faster database search and retrieval of data

**Table 1.1 BRANCH REGISTRATION TABLE**

| **Field type** | **Data type** | **Size** | **Description** |
|---|---|---|---|
| User_ID | AutoNumber | Long integer | Primary key-User Identity |
| Names | String | 255 | name |
| Others Names | String | 100 | Rest of the name |
| Tel | Number | 55 | Telephone number |
| Former religion | String | 3000 | Religion |
| Gender | String | 5 | sex |
| Marital status | String | 12 | Marital status |
| Surname | String | 89 | Names |
| Relationship | String | 100 | Relationships |
| Phone number | Number | 12 | Contacts of next of keen |

**Table 1.2 CHURCH CONTRIBUTIONS TABLE**

| Field type | Data type | Size | Description |
|---|---|---|---|
| Taith | Number | 250 | Primary Key |
| Pledges | Number | 250 | External contributions |
| Donations | Number | 250 | From well wishers |
| Others | Number | 250 | Different forms of income |

**Table 1.3 BOARD MEMBERS POSTS TABLE**

| Field type | Data type | Size | Description |
|---|---|---|---|
| ID | AutoNumber | 45 | Primary Key |
| Chairperson | string | 45 | Foreign Key |
| Clerk | string | 45 | Reporting date |
| Treasurer | string | 45 | Finance |
| Directors | string | 45 | External members |
| Incharge of business | string | 45 | Economic development |

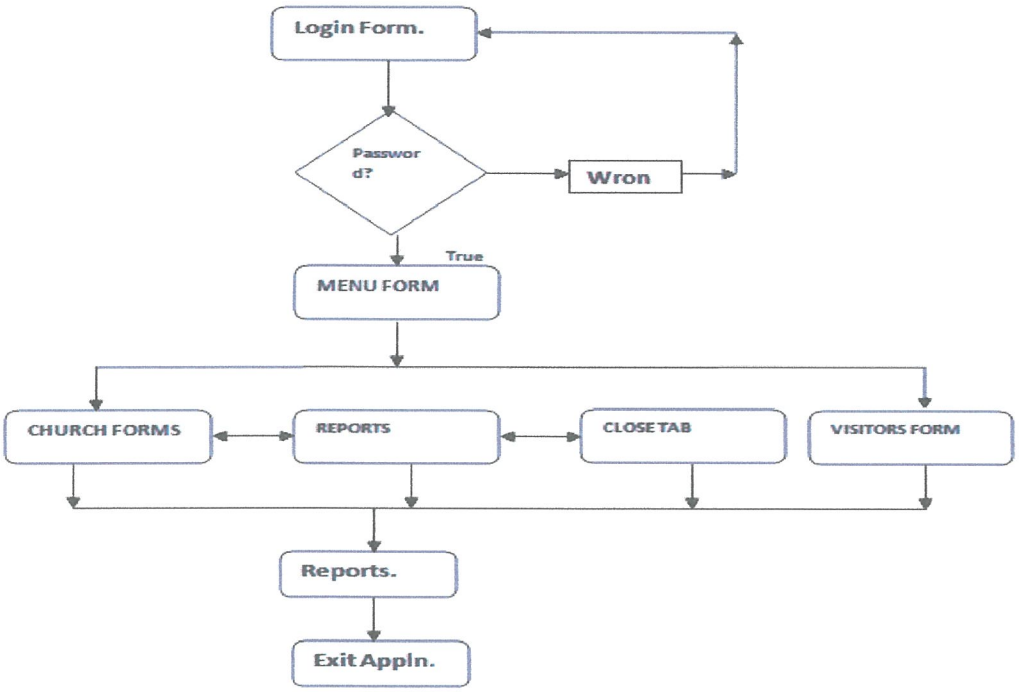
**Table 1.4 VISITORS' TABLE**

| Field type | Data type | Size | Description |
|---|---|---|---|
| Visitor_ID | AutoNumber | Long integer | Foreign Key |
| Time in | Text | 35 | Name of visitor |
| Visitor_Names | Text | 20 | Occupation of visitor |
| Email address | Text | 35 | Contacts |
| Reason | Text | 70 | Reason of visit |
| Tel | Number | Long integer | Foreign Key |
| Visit_Date | Date/Time | | Entry time |
| Time out | Date/Time | | Exit time |

### 4.2.3 The Application Model

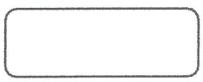
The model used in developing the system entails the application technologies that interfaced and combined in rendering a comprehensive solution, in a secure, effective, and efficient manner. The system designed is largely divided into three areas; the front-end, middleware and backend categories.

**Data flow diagram**



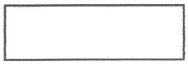

### *4.2.4 Physical Design*

**Diagram Representation:**



Process

Data Flow



External

To and from data flow

Decision Box

This chapter consists of the development of the functionalities of the project on a personal computer. It illustrates how the objects appear to relate to one another in the relational model.

### 4.2.5 Relationships

With the help of Microsoft Access, the relationships between entities were implemented. For each table involving a foreign key as an attribute, Referential integrity was enforced. Figure 5.2 shows the Relationships in Microsoft Access.

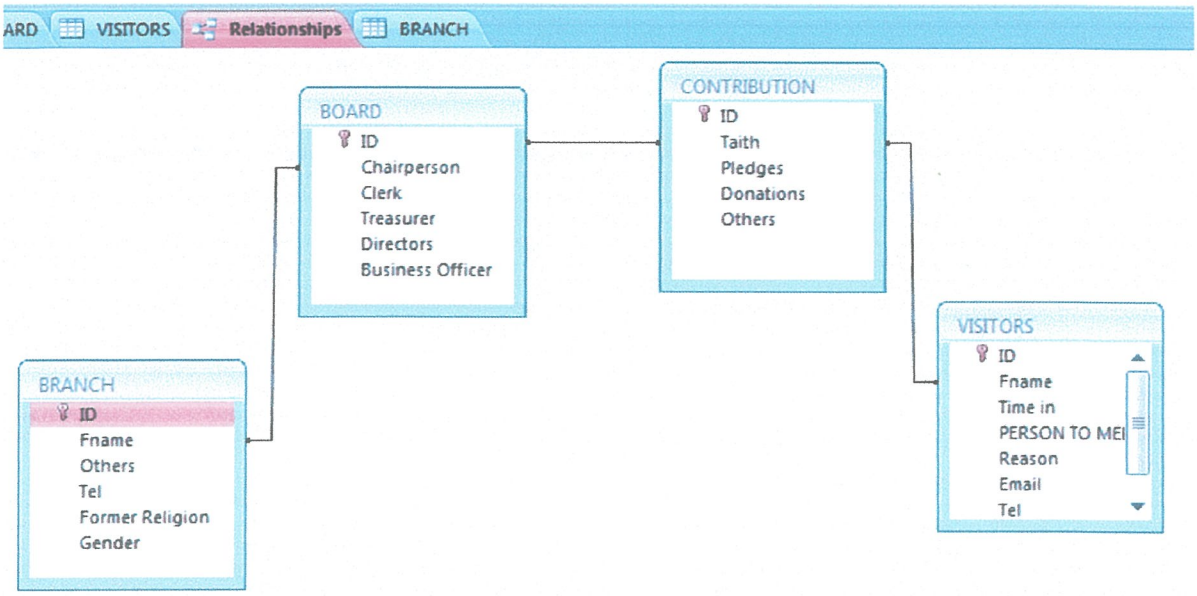



**Fig 4.3** ***Relational Model***

### 4.2.6 User Interfaces

Interface implementation was done using Visual BASIC 6.0. The interface consists of Multiple Dimensional Interfaces (MDI) form, menus, input forms, and reports.

#### 4.2.6.1 System Login

A login form was designed and implemented. This is the first form that appears and it prompts the user to input a user name and password to allow access to the system. When the user inputs a user name and a password, the two are first authenticated by checking them against the data stored in the back codes of the form. The form codes contain the user names and passwords of all the legitimate users of the system. If the user name and password are correct, the system is opened to the user. The user name or/and password are incorrect, the user is not granted access to the system and is given three chances to try logging in after which the form disappears. This was

implemented to prevent unauthorized persons from using the system or accessing the confidential data stored in the system. The figure below shows the login form.

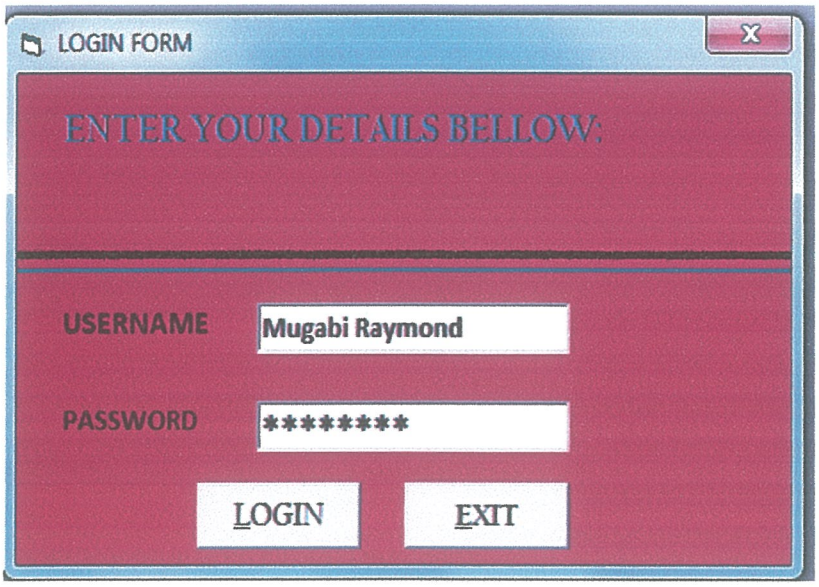



**Fig 4.4** ***Login form***

The user logs in and the if privileges are authenticated, the system allows the user to access the Multiple Data Interface (MDI) which hosts all the menus and access captions through the progression bar.

#### 4.2.6.2 MDI form and the Menu

The main form was implemented as an MDI form, which makes a special purpose form that can contain multiple child forms. In any given project, only one MDI form is allowed. The menu is created and placed on an MDI form. ***Figure 4.6,*** shows the MDI form and part of the menu. The menu opens forms and reports that are linked to it. The click event is used to evoke this action as seen bellow:

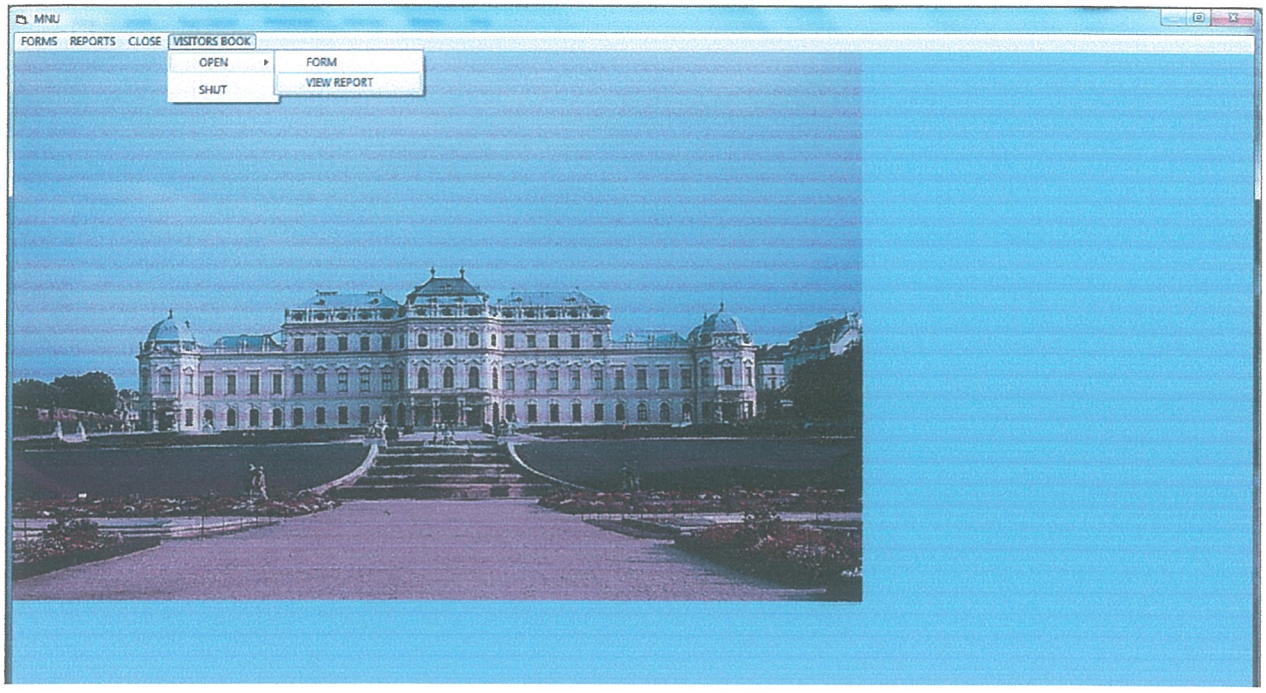



**Fig 4.6** ***MDI form and part of the menu***

#### 4.2.6.3 Data Input Forms

The system has a number of data input forms that accept input from the user and store the information in the tables. Most of the form data bound properties were set using the property window. With exception of MDI form, the forms are typical Single Dimensional Interface (SDI) forms and they are MDI child forms. Figure 4.7 shows the new member registration form. This is used to capture the new members' details.

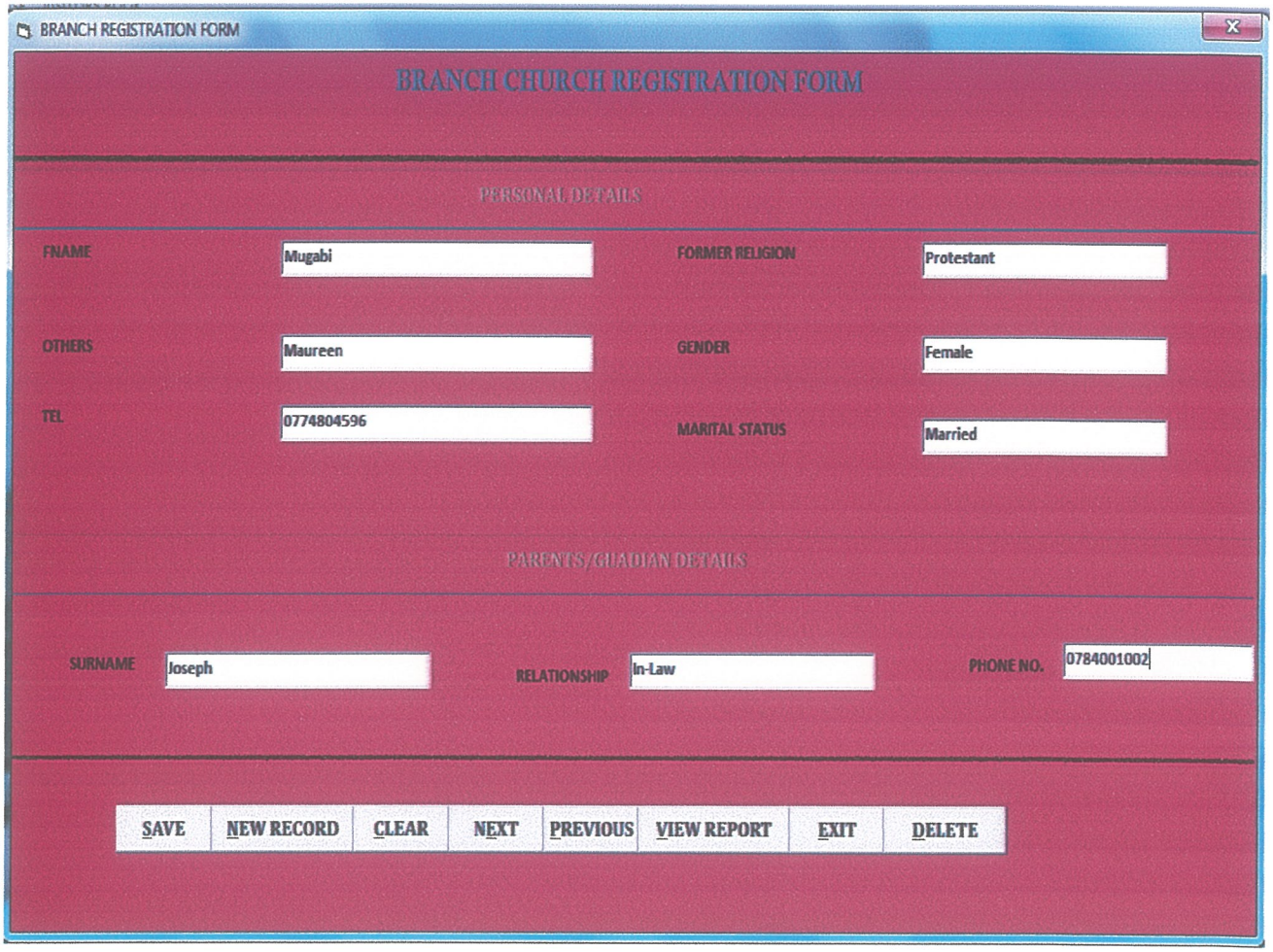



**Figure 4.7** ***Branch Registration entry form***

Each form is capable of opening the table it is linked to. This is done on form load. Opening and linking to the database is done when a user logs into the system using a module called ModConnect.

### 4.2.6.4 Reports

These produce printable output of the data stored in the database tables. They are developed in VB that connects to the database where records are stored.

A sample report of the Branch Registration' report is shown in figure below.

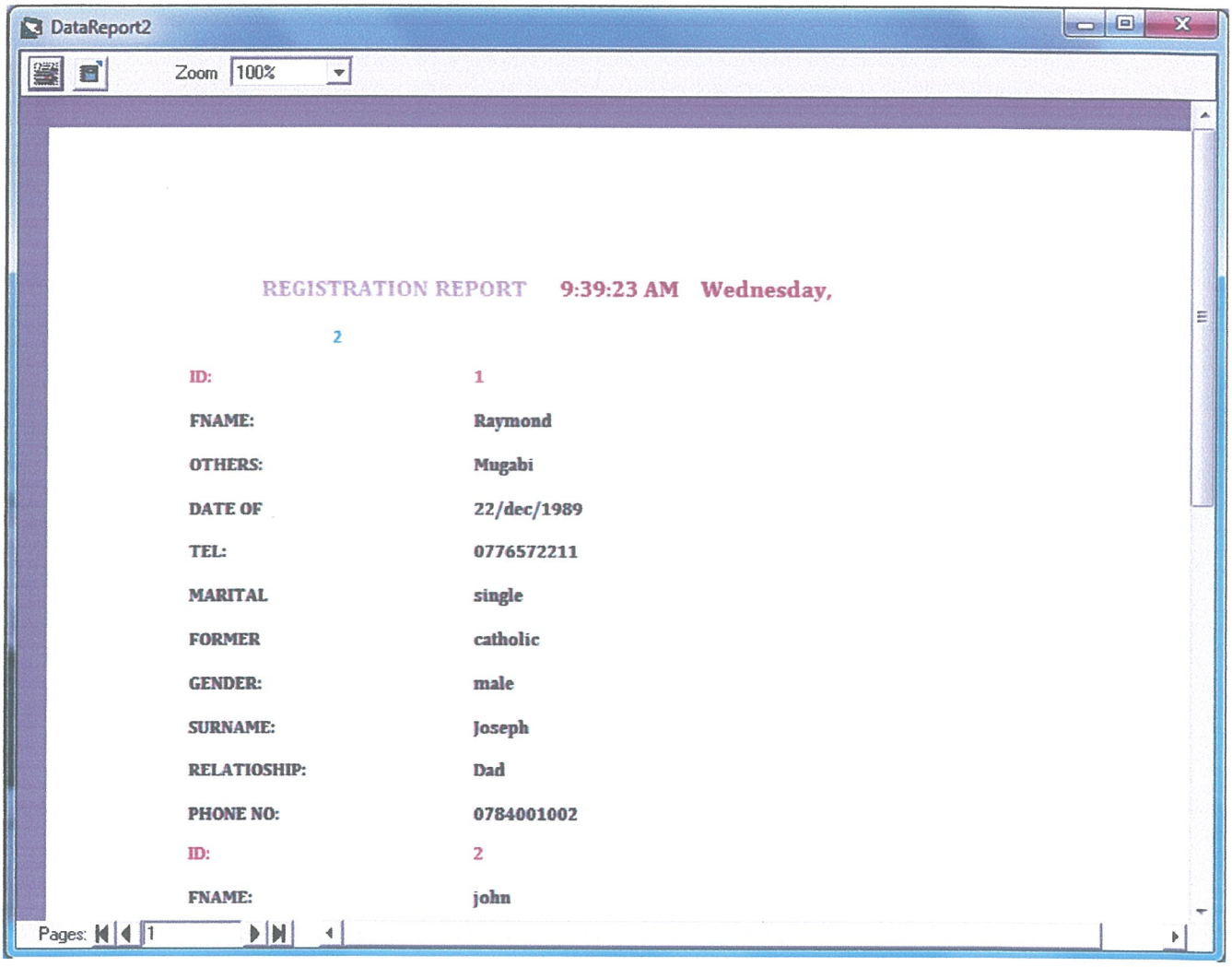



**Fig 4.8** ***Branch Registration Report***.

### 4.3 System Implementation

This is the technical mechanism, which involves coding and putting in place the real system so that it can satisfy the reason for which it was intended using the embedded functionalities. It involved the actual construction of the modules and individual subsystems. It was built using Visual Basic 6.0 as the front end denoting the input and output forms for data. The back end was developed using Microsoft Access for data stores. Below are some of the sample codes the denote some procedures and controls that manage the functioning of the system.

DBConnect() method as shown below.

```
// connecting the database using ADODB control

Private Sub cmdCLEAR_Click()

txtFname.Text = ""

txtOthers.Text = ""

txtTel.Text = ""

txtFormer.Text = ""

txtGender.Text = ""

txtSurname.Text = ""

txtRelationship.Text = ""

txtPhone.Text = ""

txtMarital.Text = ""

End Sub

Private Sub cmdDelete_Click()

Dim confirm As Variant

MsgBox "ARE YOU SURE YOU WANT TO DELETE THIS RECORD!", vbYesNoCancel +
vbInformation, "WARNING!"

If confirm = vbYes Then
```

```
Adodc1.Recordset.Delete
MsgBox "Record Deleted!", , "Message"
Else
MsgBox "RECORD DELETED!", vbOKOnly + vbInformation, "MESSAGE"
End If
End Sub
Private Sub cmdExit_Click()
Unload Me
End Sub
Private Sub cmdNew_Click()
Adodc1.Recordset.AddNew
End Sub
Private Sub cmdNext_Click()
If Not Adodc1.Recordset.EOF Then
Adodc1.Recordset.MoveNext
If Adodc1.Recordset.EOF Then
Adodc1.Recordset.MovePrevious
End If
End If
End Sub

Private Sub cmdPrevious_Click()
If Not Adodc1.Recordset.BOF Then
Adodc1.Recordset.MovePrevious
```

```
If Adodc1.Recordset.BOF Then

Adodc1.Recordset.MoveNext

End If

End If

End Sub

Private Sub cmdSave_Click()

MsgBox "RECORD SAVED!", vbOKCancel + vbInformation, "WELECOME"

Adodc1.Recordset.Fields("FNAME") = txtFname.Text

Adodc1.Recordset.Fields("TEL") = txtTel.Text

Adodc1.Recordset.Fields("MARITAL STATUS") = txtMarital.Text

Adodc1.Recordset.Fields("FORMER RELIGION") = txtFormer.Text

Adodc1.Recordset.Fields("OTHERS") = txtOthers.Text

Adodc1.Recordset.Fields("GENDER") = txtGender.Text

Adodc1.Recordset.Fields("SURNAME") = txtSurname.Text

Adodc1.Recordset.Fields("PHONE NO") = txtPhone.Text

Adodc1.Recordset.Update

End Sub

Private Sub cmdView_Click()

DataReport1.Show

End Sub

Private Sub cmdDelete_Click()

Dim confirm As Variant

confirm = MsgBox("Are you sure you want to delete this Record Permanently?", vbYesNo, "
Warning!")

If confirm = vbYes Then
```

```
Adodc1.Recordset.Delete
MsgBox "Record Deleted!", , "Message"
Else
MsgBox "Record Not Deleted!", , "Message"
End If
End Sub
Private Sub cmdExit_Click()
Unload Me
End Sub
Private Sub cmdNew_Click()
Adodc1.Recordset.AddNew
End Sub
Private Sub cmdNext_Click()
If Not Adodc1.Recordset.EOF Then
Adodc1.Recordset.MoveNext
If Adodc1.Recordset.EOF Then
Adodc1.Recordset.MovePrevious
End If
End If
End Sub
Private Sub cmdPrevious_Click()
If Not Adodc1.Recordset.BOF Then
Adodc1.Recordset.MovePrevious
If Adodc1.Recordset.BOF Then
```

```
Adodc1.Recordset.MoveNext

End If

End If

End Sub

Private Sub cmdReport_Click()

DataReport1.Show

End Sub

Private Sub cmdSave_Click()

MsgBox "RECORD SAVED!", vbOKCancel + vbInformation, "WELECOME"


Adodc1.Recordset.Update

Private Sub cmdDelete_Click()

Dim confirm As Variant

confirm = MsgBox("Are you sure you want to delete this Record Permanently?", vbYesNo, "
Warning!")

If confirm = vbYes Then

Adodc1.Recordset.Delete

MsgBox "Record Deleted!", , "Message"

Else

MsgBox "Record Not Deleted!", , "Message"

End If

End Sub

Private Sub cmdExit_Click()

Unload Me

End Sub
```

```
Private Sub cmdNew_Click()
Adodc1.Recordset.AddNew
End Sub
Private Sub cmdReport_Click()
DataReport1.Show
End Sub
Private Sub cmdSave_Click()
MsgBox "RECORD SAVED!", vbOKCancel + vbInformation, "WELECOME"
Adodc1.Recordset.Update
End Sub
Private Sub cmdCLEAR_Click()
txtDate.Text = ""
txtTimein.Text = ""
txtName.Text = ""
txtPerson.Text = ""
txtEmail.Text = ""
txtTel.Text = ""
txtTimeout.Text = ""
txtReason.Text = ""
End Sub
Private Sub cmdDelete_Click()
Dim confirm As Variant
confirm = MsgBox("Are you sure you want to delete this Record Permanently?", vbYesNo, "
Warning!")
If confirm = vbYes Then
```

```
Adodc1.Recordset.Delete
MsgBox "Record Deleted!", , "Message"
Else
MsgBox "Record Not Deleted!", , "Message"
End If
End Sub
Private Sub cmdExit_Click()
Unload Me
End Sub

Private Sub cmdNew_Click()
Adodc1.Recordset.AddNew
End Sub
Private Sub cmdNext_Click()
If Not Adodc1.Recordset.EOF Then
Adodc1.Recordset.MoveNext
If Adodc1.Recordset.EOF Then
Adodc1.Recordset.MovePrevious
End If
End If
End Sub
Private Sub Command4_Click()
If Not Adodc1.Recordset.BOF Then
Adodc1.Recordset.MovePrevious
```

```
If Adodc1.Recordset.BOF Then
Adodc1.Recordset.MoveNext
End If
End If
End Sub
Private Sub lblTime_Click()
Dim Today As Variant
Today = Now
lblDay.Caption = Format(Today, "dddd")
lblMonth.Caption = Format(Today, "mmmm")
lblYear.Caption = Format(Today, "YYYY")
lblNumber.Caption = Format(Today, "d")
lblTime.Caption = Format(Today, "h:mm:ss ampm")
End Sub

Private Sub timDisplay_Timer()
Dim Today As Variant
Today = Now
lblDay.Caption = Format(Today, "dddd")
lblMonth.Caption = Format(Today, "mmmm")
lblYear.Caption = Format(Today, "YYYY")
lblNumber.Caption = Format(Today, "d")
lblTime.Caption = Format(Today, "hh:mm:ss ampm")
Private Sub cmdCLEAR_Click()
```

```
txtDate.Text = ""

txtTimein.Text = ""

txtName.Text = ""

txtPerson.Text = ""

txtEmail.Text = ""

txtTel.Text = ""

txtTimeout.Text = ""

txtReason.Text = ""

End Sub

Private Sub cmdDelete_Click()

Dim confirm As Variant

confirm = MsgBox("Are you sure you want to delete this Record Permanently?", vbYesNo, "
Warning!")

If confirm = vbYes Then

Adodc1.Recordset.Delete

MsgBox "Record Deleted!", , "Message"

Else

MsgBox "Record Not Deleted!", , "Message"

End If

End Sub

Private Sub cmdExit_Click()

Unload Me

End Sub

Private Sub cmdNew_Click()

Adodc1.Recordset.AddNew
```

```
End Sub
Private Sub cmdNext_Click()
If Not Adodc1.Recordset.EOF Then
Adodc1.Recordset.MoveNext
If Adodc1.Recordset.EOF Then
Adodc1.Recordset.MovePrevious
End If
End If
End Sub

Private Sub cmdReport_Click()
DataReport4.Show
End Sub
Private Sub Command4_Click()
If Not Adodc1.Recordset.BOF Then
Adodc1.Recordset.MovePrevious
If Adodc1.Recordset.BOF Then
Adodc1.Recordset.MoveNext
End If
End If
End Sub
```

### 4.4 Installation

This signifies how the system will be put in action / action using the computer system. The installation is prompted when the setup (the executable file) is run. The wizard to load the drivers in memory and hard drive continuously controls the whole process of running and / or loading the software. Double click the setup, the auto run will initialize the system and will start installation in which different and several options are prompted where the one installing will be prompted to "next, continue or I accept" until to completion.

### 4.5 Testing

Here the system is invoked to finding out whether it meets the standards and the requirements specifications for the user needs. It was tested for both the modules (Units) and the whole system using both actual data and test data and later found out that it works properly as may postulated below, for deleting, adding, saving, clearing, generating reports and other functionalities.

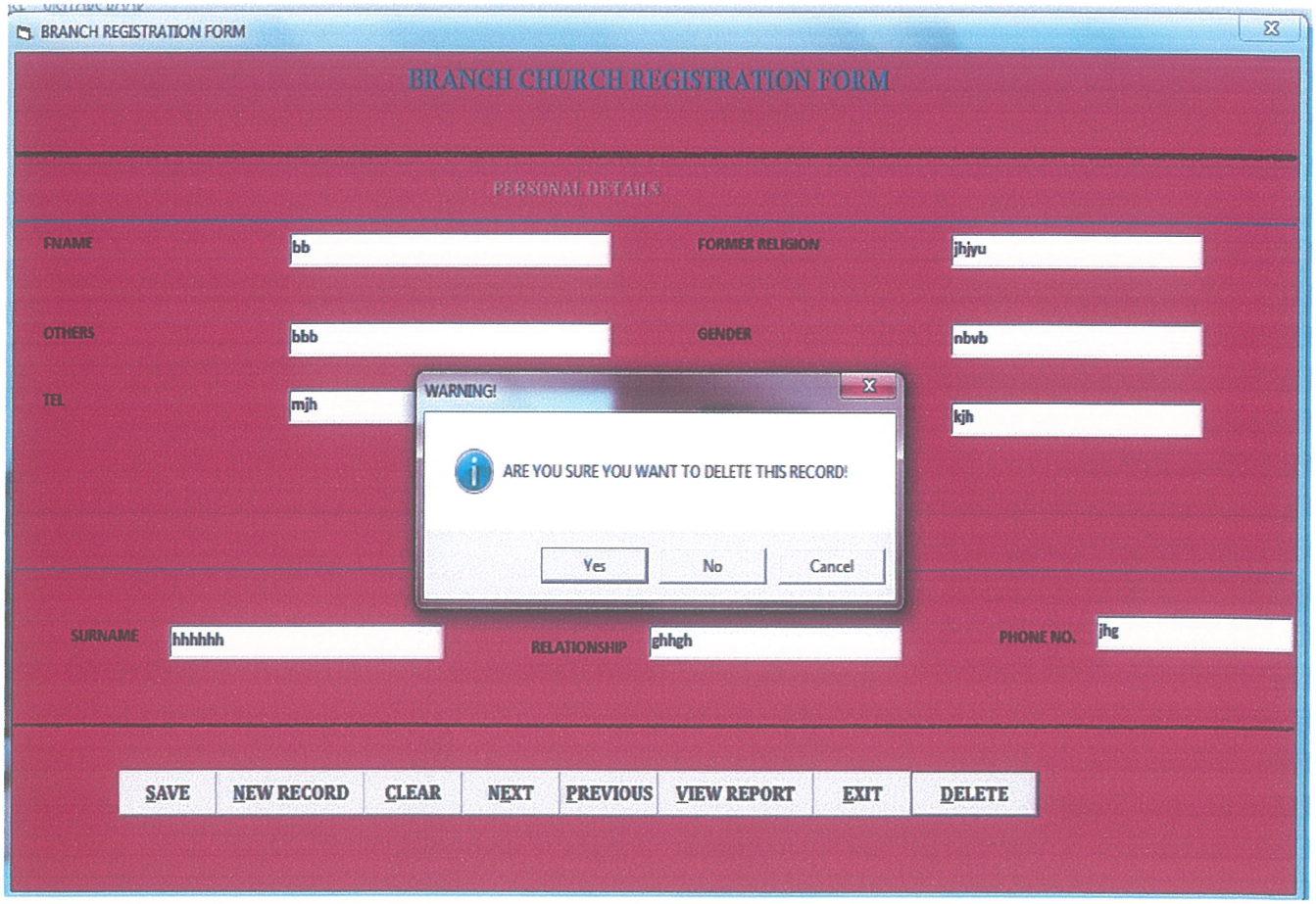



**Fig. 4.9 Branch Registration Form**

Tested with unavailable data, response as above where as with available data response as in the Figure below

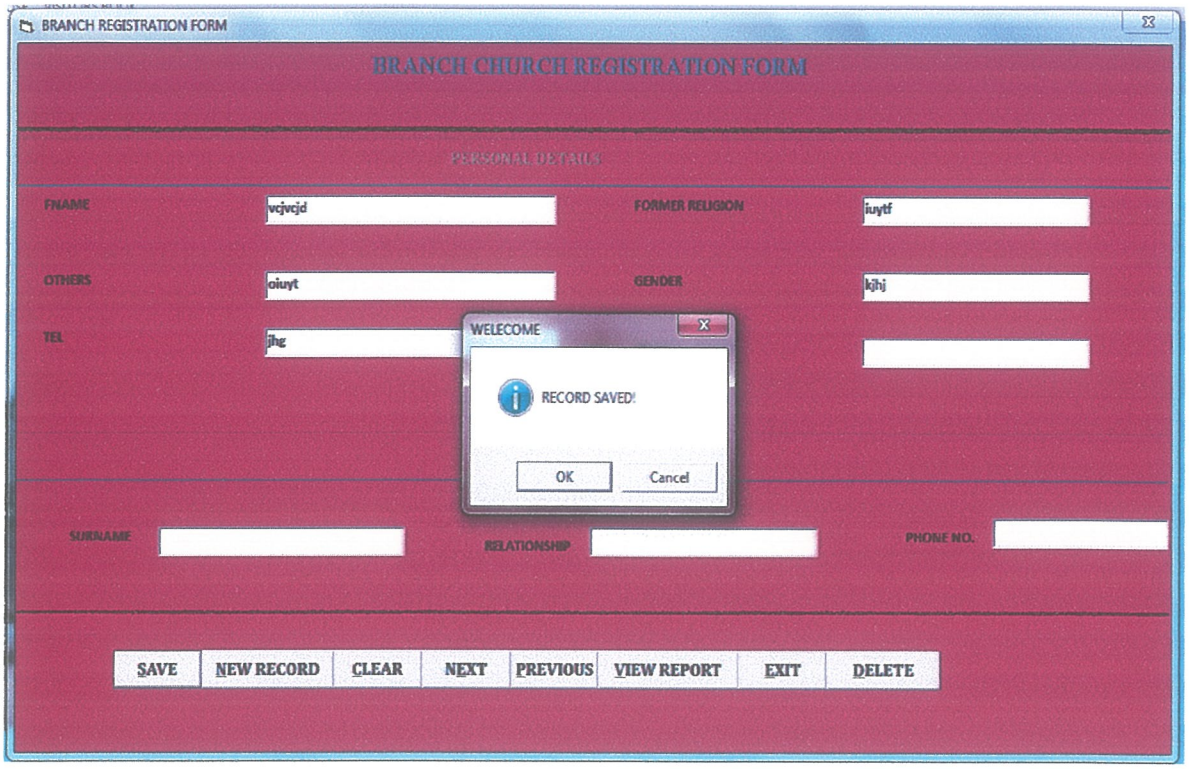



**Fig. 4.10 Branch Registration Form**

### 4.6 Maintenance

Because of the un maintain discovered errors and newly generated bugs in course of its use, the system will continuously for proper functioning through its life until it attains a stable state. This is because the system is dynamic and expands every other time due to the data that tends to grow daily. Whenever the data grows, change or updating of hardware and software is done in order to meet the new requirements and platform demands.

### 4.7 System Change over

It is highly recommended that the pre-current system keeps running along with this one parallel to comprehend effective acquisition of the purpose and objective for which it was developed. The parallel conversion will minimize the likely errors when using it and thus allows room for debugging and fixing those sub sequential errors.

# CHAPTER FIVE

# RESULTS, RECOMMENDATIONS AND CONCLUSIONS

## 5.0 Introduction

This chapter assesses and evaluates the system, summarizes the research in order to make the system meet the already set goals in a better way. This chapter also explains the problems that were encountered when carrying out the research and gives the recommendation and conclusion of the research.

## 5.1 Results

The system can capture data for both the visitors who come to the church and new members who join the church, and generate reports for every subsequent data requirement for analysis and decision-making processes needs. It can as well give reports on the visitors, contributions collected, and the available Board members. It also provides interface for the user to update, edit, delete, and move from one record to another and so on.

## 5.2 Limitations

During the data collection phase, on a number of occasions, the researcher found the respondents in question too busy to provide meaningful audience, especially during prayer hours of which it is the only time they could avail themselves.

Most of the intended respondents were not reached because it was not easy to meet them because they appeared very busy always.

The exercise was always conducted on a Sunday during the services because of that conditions, respondents found it disrupting.

It was so expensive to conduct the survey because the respondents were most of the time out of scope of the appointments and would always say sorry thus not getting always the required information or data.

## 5.3 Recommendations

This fully fledged Database and Inventory system should be adopted by the church because it comprises of more modules and controls to guarantee, security, easy to use, reduces search and response time for data users.

The system offers easy access to information about the church members therefore, for purposes of forensics and audit, hence should be in position to restrict the movements of the visitor within the church premises, which had not been maximally achieved.

The Database and Inventory System can be further developed to include all those modules and functionalities that have not been included for the good of efficiency and effectiveness intended in the service delivery.

The system should be installed and implemented in parallel with the old system, to minimize workflow interruptions and ensure a smooth transition to reduce erroneous works in the church.

Users should be trained to use the system in order to yield optimal benefits out of it.

## 5.4 Conclusions

This research project presented an effort to develop a Staff and Visitors' Records Management Information System – Database and Inventory System for Christian Science church of Kampala branch. It records the walk-ins and walkouts of new members in the church at any one point and takes records of whichever contributions to the church. This is done in a secure, yet efficient and effective manner. It would, however be false to say the system is maximally efficient at this stage. As discussed above, it can be improved to include all the missing modules. The researcher therefore encourages any interested persons to make the necessary adjustments in order to have a fully-fledged records system.

## REFERENCES: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11. http://www.answers.com
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## APPENDIX A


*Fig 5.1 Login form.*

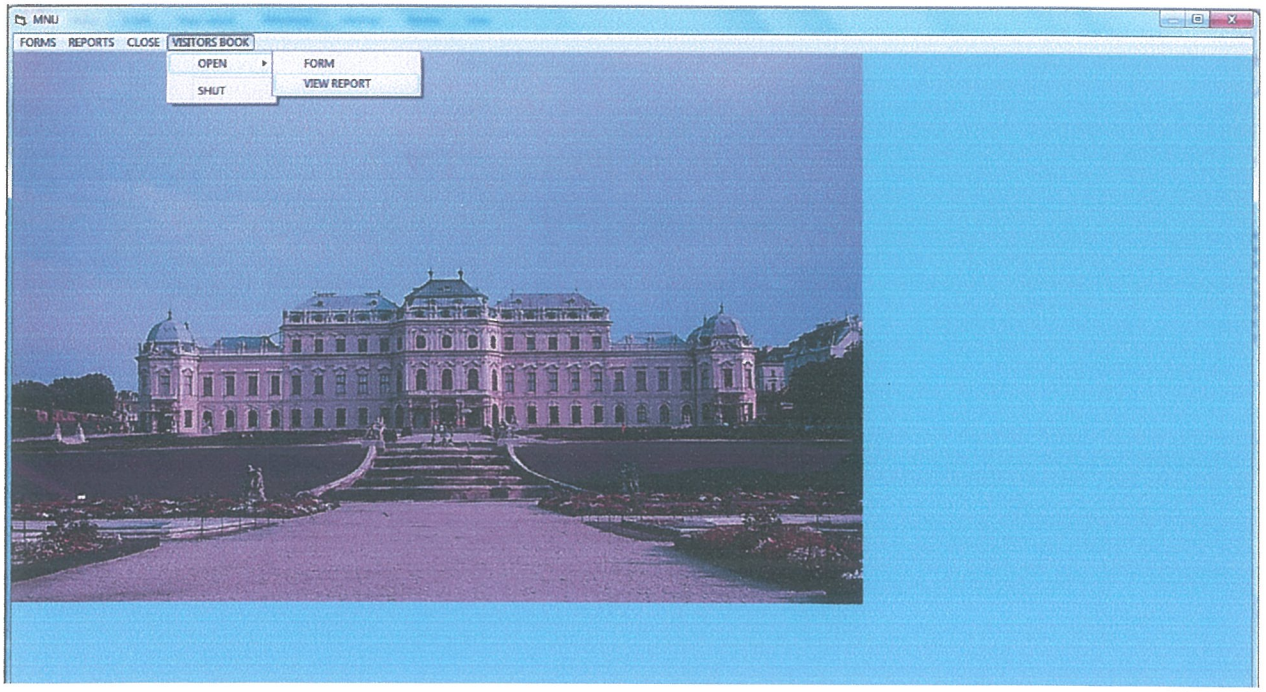


*Fig 5.2 Menu form:*

*5.5 Sample visitors' form.*

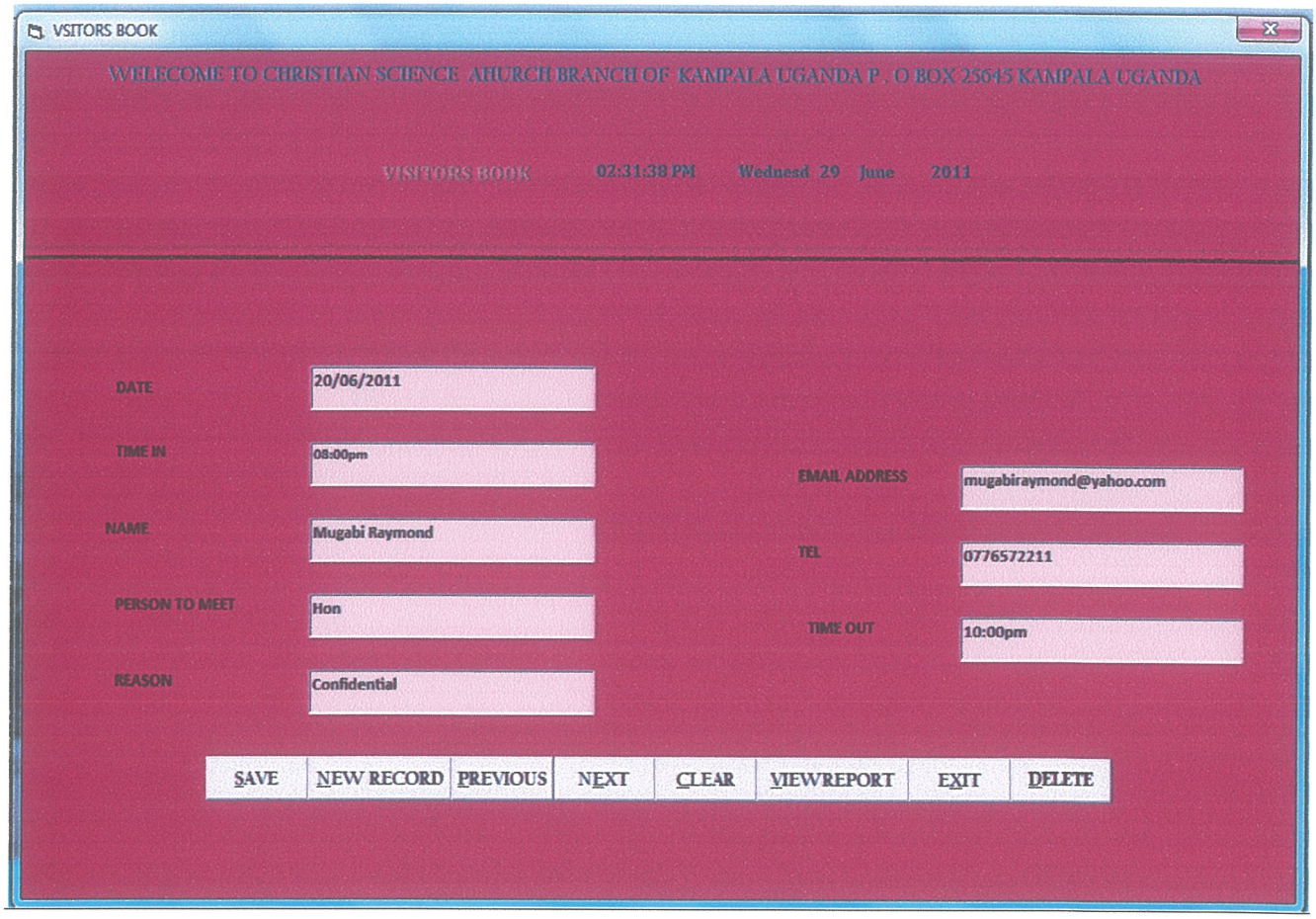


*Fig 5.3 Visitors form:*

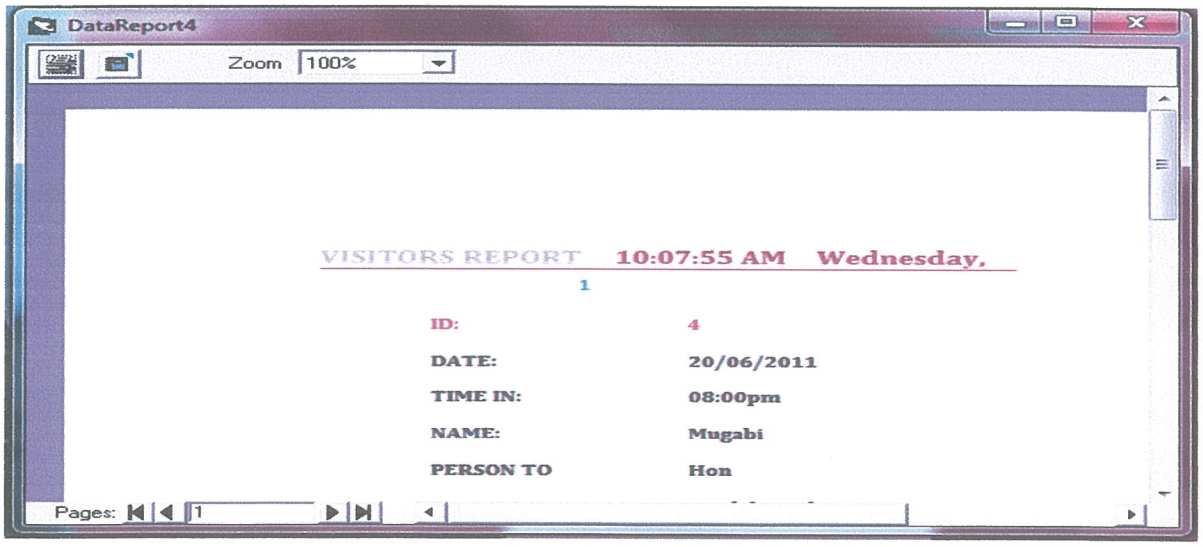

**Fig 5.4** ***visitors report***

DETAILS

| ID | DATE | TIME IN | NAME | PERSON TO MEET | REASON | EMAIL ADDRESS | TEL | TIME OUT |
|---|---|---|---|---|---|---|---|---|
| 8 | fklfgkgfkgfk | | | | | | | |
| 4 | 20/06/2011 | 08:00pm | Mugabi Raymond | Hon | Confidential | mugabiraymond@y: | 0776572211 | 10:00pm |
| 6 | 30/05/2011 | 07:00pm | Mukisa Deogratious | Madam | Handing my work | deo@yahoo.com | 0784332412 | 09:00pm |
| * | (New) | | | | | | | |

**Fig 5.5** ***visitors Visitors Database***

***5.6 Sample branch registration form.***

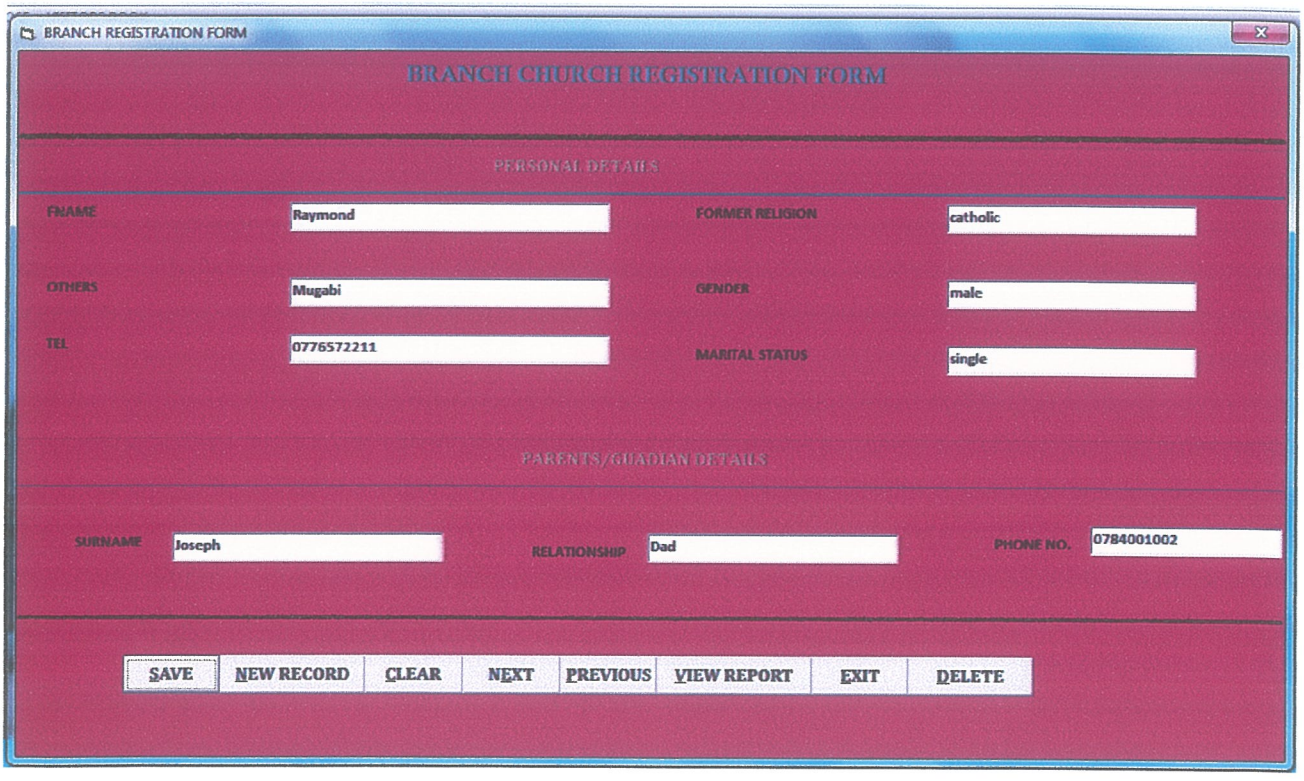


***Fig 5.6 Branch registration form:***

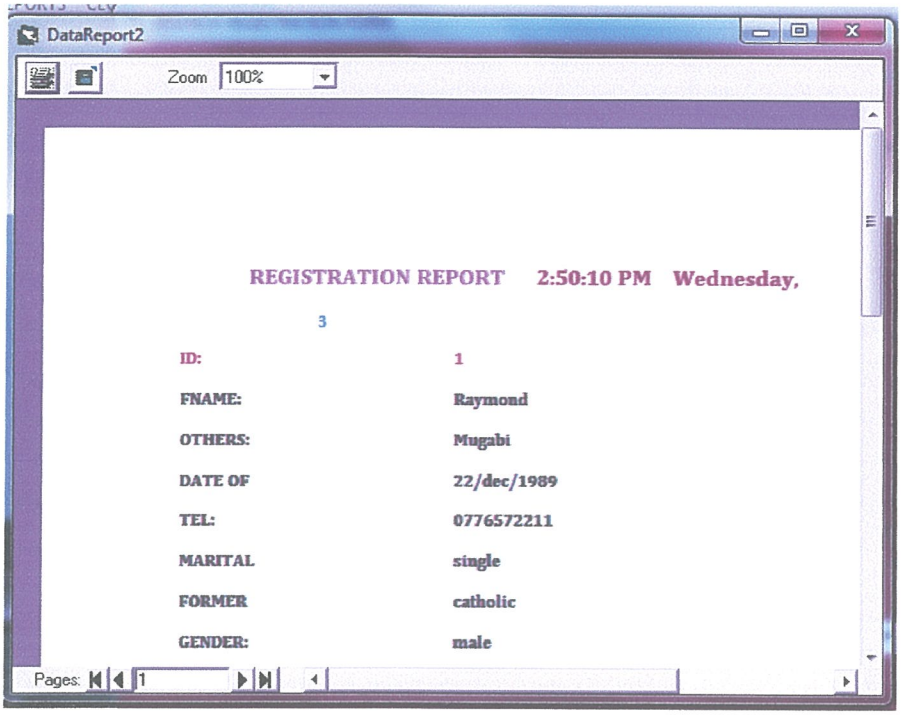


*Fig 5.8 Branch registration form:*

DETAILS

| ID | FNAME | OTHERS | DATE OF BIR | TEL | MARITAL ST/ | FORMER REL | GENDER | SURNAME | RELATIOSHII | PHONE NO |
|---|---|---|---|---|---|---|---|---|---|---|
| | Raymond | Mugabi | 22/dec/1989 | 0776572211 | single | catholic | male | Joseph | Dad | 0784001002 |
| 2 | john | opio | | 078344567 | single | muslem | not sure | okoth | dad | 0432123456 |
| 11 | DFFDF | DDED | | DCDCV | DCDCC | EFEFRF | CDVV | RER | WERR | DFDFV |
| 12 | | | | KJKUY | | | | | | |
| 13 | mugisha | David | | 0712345678 | | catholic | | | | |
| 14 | bb | bbb | | mjh | kjh | jhjyu | nbvb | hhhhhh | ghhgh | jhg |
| 15 | vcjvcjd | oiuyt | | jhg | | iuytf | kjhj | | | |
| * | (New) | | | | | | | | | |

*Fig 5.9 Branch registration database:*

*Note:*

The above are representations of the rest of the forms

## APPENDIX B

### INTERVIEW GUIDE.

1. What are your roles in the church?

2. What means do you use to capture church records?

3. Give a detailed description of the typical tasks involved in the church

4. What type of data is commonly used in the church?

5. How many committee members are in the church?

6. Do you feel you need a computerized Database and inventory system? If yes, why? And if no, why?

7. What solutions do you expect an effective computerized Database management and Inventory system to provide?