

**TITLE PAGE**

**COMPUTERISATION OF VITAL  
REGISTRATION RECORDS**

**(A Case Study of National Population Commission, Minna)**

**BY**

**OLAYEMI DAVID OLALEKAN**

PGD/MCS/2000/935

A Project submitted to the Department of Mathematics / Computer Science  
School of Science and Science Education.

In Partial fulfillment of the requirement for the award of Postgraduate Diploma in  
Computer Science. Federal University of Technology, Minna.

*September, 2001*

## APPROVAL PAGE

This project was supervised and approved as meeting the partial requirement for the award of Postgraduate Diploma in Computer Science of the Department of Mathematics/Computer Science, Federal University of Technology, Minna.

---

Mr. Ezeako L.N.  
*Project Supervisor*

---

Date

---

Dr. Reju S.A.  
*Head of Department*

---

Date

---

*External Examiner*

---

Date

## **DEDICATION**

This project is dedicated to an intimate friend **OGUNNIYI AMURAWAYE ROTIMI** & His wife **TAIWO** who lost their lives in a motor accident. May their gentle souls rest in a perfect peace.

I also dedicate it to all that have in one way or the other contributed to the success of this project.

## ACKNOWLEDGEMENT

I give thanks, honour and adoration to the **Most High God** for seeing me through the programme at His own appointed time.

I'll like starting by acknowledging the professional work of my able supervisor in person of **Mr. Ezeako L.N.** who spend much of his precious time to go through this write up and make necessary corrections despite his tight academic involvement. I also express my gratitude to the entire lecturers of the Department of Mathematics/Computer Science for the knowledge they impacted on me I shall forever be grateful.

I also thank **Mallam Hammed Baba** the Head of Department of Vital Registration, National Population Commission, Minna for warm welcome during data and materials collection.

I remain grateful to my ever caring parents **Mr & Mrs Gabriel Safe Olayemi and Children- Olawumi, Olabisi, Olaniyi, Olakunle and Olabunmi** for their efforts in making me what I am today.

My ever appreciation goes to **Mr. & Mrs. Abel Alade** of IBB Computer Centre for his brotherly love and his spiritual advice. **Ojo Isaac Ayobami, Alade Sunday, Rachael, Mrs. Bello, Mrs. Adeagbo,** have all helped in making the programme a successful one. Thanks a lot.

I must place on record the role of **Mr. Solanke Bola L.** of Statistics department of the Polytechnic. I am indeed very grateful. My appreciation goes to friends-**Obad Yinka, Gegele O.A., Alarape M.A., Ojo Akeem, David Akoh** who have all rendered help in numerous ways.

I must not fail to mention the effort of my mates **Oyedirán 'Yemi, Edith, Oluwole Adeoti, Moh'd Shaaba** and others who helped me greatly.

Lastly, I commit you all in the Almighty God's hand for divine guidance in all your personal and collective endeavours.

## **ABSTRACT**

Census, to any nation (developed or developing) cannot be overlooked as it enhances proper economic and social planning, but despite this, Nigeria has never conducted any census in which the figure is accepted worldwide.

In the light of the above plight prompted the Federal Government to establishing yet another means of obtaining demographic data, which be complimentary to census hence Vital Registration.

Being the complimentary exercise, there is need to its successful conduct, this project however, proposes a fully computerised system, which if implemented will enhance accuracy, fastness, availability of information at any location and easy updating of vital registration records.

The software used is Microsoft Access, which is relational database management system suitable for handling a pool of database.

## TABLE CONTENT

<b>TITLE PAGE</b> -----	<b>I</b>
<b>APPROVAL PAGE</b> -----	<b>II</b>
<b>DEDICATION</b> -----	<b>III</b>
<b>ACKNOWLEDGEMENT</b> -----	<b>IV</b>
<b>ABSTRACT</b> -----	<b>VI</b>
<b>TABLE CONTENT</b> -----	<b>VII</b>
<b>CHAPTER ONE</b> -----	<b>1</b>
1.0 GENERAL INTRODUCTION -----	1
1.1 STATEMENT OF PROBLEM -----	2
1.2 AIM AND OBJECTIVES OF STUDY. -----	4
1.3 JUSTIFICATION OF STUDY -----	4
1.4 SCOPE AND LIMITATION OF STUDY -----	5
1.5 OPERATIONAL DEFINITIONS -----	5
<b>CHAPTER TWO</b> -----	<b>6</b>
2.0 LITERATURE REVIEW -----	6
2.1 HISTORY OF VITAL REGISTRATION IN NIGERIA -----	6
2.2 THE NEED FOR VITAL REGISTRATION -----	8
2.3 VITAL REGISTRATION PROCESS IN NIGERIA. -----	10
2.3.1 <i>Reporting and Registration of Events</i> -----	10
2.3.2 <i>Time Limit For Registration</i> -----	11
2.3.3 <i>Data collection and Documentation</i> -----	12
2.3.4 <i>Coding and Tabulation Procedures</i> -----	13
2.4 <i>The uses of Computers in Vital Registration System</i> -----	15
<b>CHAPTER THREE</b> -----	<b>17</b>
3.0 SYSTEM ANALYSIS AND DESIGN-----	17
<b>CHAPTER FOUR</b> -----	<b>22</b>
4.0 SYSTEM DEVELOPMENT AND IMPLEMENTATION-----	22
4.1 HARDWARE REQUIREMENT -----	22
4.2 COST ANALYSIS OF HARDWARE REQUIRED -----	24
4.3 SOFTWARE DEVELOPMENT AND IMPLEMENTATION -----	25
4.3.1 <i>Software development Procedure</i> -----	26
4.3.2 <i>Choice of Programming Language</i> -----	27
<b>CHAPTER FIVE</b> -----	<b>31</b>
5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS-----	31
5.1 SUMMARY AND CONCLUSION -----	31
5.2 RECOMMENDATIONS -----	32
<b>REFERENCES</b> -----	<b>34</b>

## CHAPTER ONE

### 1.0 GENERAL INTRODUCTION

Nigeria which lies within latitudes  $4^{\circ} 1'$  and  $13^{\circ} 9' N$  and longitude  $2^{\circ} 2'$  and  $14^{\circ} 30' E$  is boarded in the north by the Republic of Niger, in the east by the Republic of Benin. About 800 km of the Atlantic Ocean coastline forms the southern borders, which stretches from the Badagry inlet in the west to the Rio de Ode east of the Cross River estuary. Nigeria came into being in 1914 when the former British colony and protectorate of southern Nigeria was amalgamated with the protectorate of Northern Nigeria. With a total surface area of approximately 923,768sqkm it comes tenth largest country in Africa. It is, however, by far the most populous in Africa.

The need to know how many people are there or live in Nigeria has always been a major concern of National economic planners. Nigeria, like every other country needs accurate demographic data, needed to plan for social services, to distribute resources effectively to state and Local Government and to avoid lopsided development in health, education, transport, agriculture, industry, trade, national defence and security and power and energy sectors. It is however noted that in spite of the long history of census taking in Nigeria, demographic data have remained fragmentary, controversial and unreliable in Nigeria. This is a major handicap in the process of planning and evaluation of National programme and plan targets.

Research is therefore needed to examine critically the current state of demographic data in Nigeria so as to improve the adequacy of information



about its population size and the distribution thereof with respect to important socio-economic characteristics desired for planning purposes.

### **1.1 STATEMENT OF PROBLEM**

The sources of demographic data include population census, population register, sample survey and vital registration. Population census is the primary source of basic national population data for administrative as well as socio-economic planning. It provides indispensable data for scientific analysis and appraisal of the composition, distribution and growth of the population. It also serves as a frame for the development of other data collecting procedures (United Nations 1958). Nigeria conducted a population census in 1991. The successful conduct of the 1991 population census clearly reversed the fate of census taking in Nigeria. According to the National Population Commission (1998) the 1991 census provided a rich set of socio-economic and demographic data that will improve nation development planning.

Population register is another source of demographic data that is usually employed by the developed countries especially the Scandinavian region and some francophone countries who maintain a regularly up-dated list of people resident in a country with details of sex, date of birth, marital status, etc. In Nigeria, population register is non-existent and no serious consideration has ever been given to establishing it (Adewuyi and Adepoju, 1983).

Sample survey is the second most important source of demographic statistics in Nigeria. Hence efforts to generate reliable demographic data in Nigeria has included the conduct of numerous sample surveys such survey

varied in scope coverage and detail since they were conducted by individuals and organisations to meet specific needs. However, nation-wide surveys conducted by agencies of the Federal Government include the 1965/66 demographic sample survey, the 1981/82 Nigeria Fertility Survey (NFS) the National Integrated Survey of Households (NISH) in 1983 and the Nigeria Demographic and Health survey (NDHS) in 1990.

Vital Registration is another key source of demographic data. It consist of continuous registration of births, deaths, marriages etc Kpedekpo (1982) observe that in many developing countries, the vital Registration system are inadequate and defective to the extent that thy can hardly serve to measure accurately levels and trends of fertility and mortality at any given time. In view of the problems of population census in Nigeria before the 1991 census, it was the view of the Federal Government that a vital registration system complimentary to census be established. Consequent on this the Civil Registration system was established in 1988. By the law establishing the system (Decree 39 of 1992), the exercise is supposed to be compulsory. However, these laws are not enforced hence, there has been no proper coordination of the system neither is the data generated, located nor published.

The study will therefore focus on the vital registration system by examining the process of registration of vital events such as births, deaths, or stillbirths, with the view to improving the systems data collection and documentation via the design of a more efficient database for the records.

## 1.2 AIM AND OBJECTIVES OF STUDY.

The basic aim of this study is to design computer database for registration and documentation of vital events such as births, deaths and stillbirths.

Specific objectives of the study are therefore as follows:

- (i) To examine the current registration system in order to identify areas of data collection procedure and maintenance needing improvement.
- (ii) To make appropriate recommendations to National Population Commission so as to ensure timely processing, analysis and dissemination of data generated in the vital registration system
- (iii) To design a comprehensive database using appropriate software for keeping records and registration records. This, if implemented will not only enhance efficiency but provide smooth and accurate operations.
- (iv) To design software (package) which will provides security and prevents duplication of data as well as data redundancy.

## 1.3 JUSTIFICATION OF STUDY

The research work will not be justified if we fail to highlight the various use/function of computer in society and linked it to vital registration exercise, which will in the overall-improve the efficiency of the exercise. The following therefore explain the uses/functions.

**Recording Keeping:** This is one of the numerous uses of computer. It is suitable for keeping records for both present and future purposes.

**Fastness:** The speed of access and processing data by computer system cannot be over-emphasis and this factor among other makes its usage more

prominent in all aspect of human endeavours in which vital registration is inclusive.

**Security:** Records kept inside computer can be pass worded for security purpose. This function makes computer to stand out from other processing tools.

#### **1.4 SCOPE AND LIMITATION OF STUDY**

This study is limited to the procedure of registration of vital events at the National Population Commission (NPC), Minna. Niger State. The study could not examine the registration process in other states of the Federation due to financial and logistic constraint that will accompany the coverage of the thirty states of Nigeria. However, the National Population Commission, Minna was randomly selected from the list of NPC State offices.

#### **1.5 OPERATIONAL DEFINITIONS**

**Population Census:** is a total process of collecting, compiling and publishing demographic, economic and social data pertaining at the specified time to all persons in a country or delimited territory.

**Demography:** is concerned with the description, analysis and understanding of population phenomena.

**Vital Statistics:** is the statistics generated from the exercise of vital events.

**Civil Registration:** is the continuous, permanent and compulsory recording of the occurrence and characteristics of vital events

**Database:** is an organized collection of related data stored in a computer which ease access and retrieval of such data

**Microsoft Access:** This is a database management system package designed by Microsoft Corporation purposely for handling large pool of data.

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

This chapter review relevant literatures on vital registration system Nigeria.

### **2.1 HISTORY OF VITAL REGISTRATION IN NIGERIA**

Registration of vital events was initiated in Nigeria by the vital statistics ordinance of 1863. This ordinance provided for the registration of birth, deaths and marriages in Lagos however actual registration of vital event did not start until 1867, initially the exercise was limited to Lagos due to logistics problems, the ordinance was suspended in 1869 and did not become operational again until 1892. The success of the exercise in Lagos led to the establishment of other registration centres. These were initially restricted to towns close to Lagos. Warri was included in 1903, Calabar and PortHarcourt in 1904 (Sada 1984, Dure 1993).

In the Lagos colony, registration was compulsory on the Island of Lagos, Iddo, Epe, Ikorodu and Badagry in accordance with the order-in-council of 1908. In the southern- provinces as a whole, registration is compulsory in any native community for a native council had introduced- registration through a rule which required the approval of the governor such rules were made in 1903 and 1904 for only six district but by 1914, they had become a dead letter owing to the difficulties of enforcement. It was under such rules that 1938 a proposal entitled the "Registration of Births Dead and Marriages native authority order" was put forward for Ijebu-Remo division by

the Acting Resident of Ijebu province. Similarly, laws became operational on Enugu, Aba and in the Eastern provinces.

Vital registration in the Northern provinces suffered in the same fate. In the early part of the last century, it covered only a few government stations and Zungeru. Vital registration was also done under Native Authority rules in Zaria, Makurdi Adamawa and Jema's. In all these cases. No provision. However, in the Emirate of Katsina, a system of vital registration operates effectively (Raimi, 1993). According to (Sada, 1984) these registration system failed because of apathy, fear and suspicious by local population.

A major change occurred in 1979 with the passing of a decree making registration of births and deaths compulsory nationwide (Decree 39,1979). The system adopted has the passive system where people were expected to go and register events as they occur. Registration was done at township registry offices and medical officers of health, administrative officers were charged with the responsibility of effecting registration.

Duze (1993) stressed that apart from limited success in Lagos, the consequently in 1977 only about 8.0 percent of the total estimated births and 2.1 percent of the total estimated deaths were actually registered (Morah, 1980). After 1979, the situation of vital registration system in Nigeria did not improve vital registration in the country.

In 1988, an effort was made to establish a nation-wide system of continuous and comprehensive registration of vital events on an experimental basis, following the success of these model procedures, a uniform registration system was introduced to all over the country through the Births and Deaths etc. (Compulsory) Registration's Decree 69 of 1992.

This Decree makes the registration of births and deaths compulsory, and also specifies the manner in which the records will be maintained.

## **2.2 THE NEED FOR VITAL REGISTRATION**

Vital registration which is defined by the National Population Commission as the continuous, permanent and compulsory recording of the occurrence and characteristics of vital events, as defined in and as provided through decree or regulations in accordance with the legal requirement of a country, provides complementary demographic data collection is greatly minimized as only periodic supplementary data need to be collected.

Several researchers have attempted to classify the uses of vital registration records. Kpdedekpo and Arya (1982) outline the uses of vital registration records and statistics as follows:

- i. Vital registrations provides addition of data independent of census, on measures of fertility and mortality both for the entire nation and for small geographical areas, for the study of trends and patterns in fertility and mortality.
- ii. The sex ratio at birth provides a very important piece of information for use in population projections.
- iii. The data from civil registration gives information on the seasonality of births and deaths. This has relevance for the planning of related services.
- iv. The system in used as check on census enumeration, particularly at the infant, young and childhood range, where, under enumeration is common

- v. In populous countries, vital statistics from the civil registration system can be useful in formulating population control programmes and for evaluating the effectiveness of such programmes.
- vi. In longitudinal type survey or genetic studies about fertility and mortality records of birth, death, marriages and divorce can be very useful.

#### **Administrative Uses**

- i. Birth registration records provides the necessary legal and documentary evidence to certify a person's parentage, birth place and nationality or citizenship.
- ii. Births certificate are used in the determination of a person's eligibility for admission to school, to obtain a passport, to certain fields of employment and to vote in an election.
- iii. In the exercise of the civil function, such as entitlement to family allowances, insurances claims, care of children, tax deductions or benefit, the birth certificate is usually required.
- iv. The record of deaths and death certificates provides legal evidence relevant to claims of property, to insurance benefit on deceased persons, to the right of the surviving spouses to remarry, and to claims for family allowances where the death creates financial needs.

#### **Medical Uses**

- i. Data on death and their causes as records on death certificates are essential in the planning of health services for specific are, as well as for the whole country. For example, the cause of death statistics are helpful in forecasting the future course of age specific mortality.



- ii. Epidemiological studies based on causes of morbidity, which have a strong influence in the reduction of mortality are usually based on records of vital statistics generated by the system.

Akinkoye (1980) examined the uses of vital registration from a perspective different from that of Kpedekpo and Arya. He categorised the uses of vital registration as follows:

- i. Development planning for social and economical development, planning for Education, health delivery etc.
- ii. Evaluating the effectiveness of medical care in the presence of complete registration, changes in birth and death rates serve as good indicators of the effectiveness of programmes designed to control births and deaths in the population.
- iii. Comparing trends and variations among group-registration data can be used for comparing variations in vital events among the various sub-groups in a society.

### **2.3 VITAL REGISTRATION PROCESS IN NIGERIA.**

The process of vital registration in Nigeria involves many integrated stages. The key stages are obtaining information about an event, issuing the birth or death certificate, recording details in the appropriate register of births and deaths and producing tables and analysing the information for National planning purposes. It is thus appreciate to examine each state in detail.

#### **2.3.1 Reporting and Registration of Events**

Reporting and Registration forms the major and first activity in vital registration process in that whenever a live birth, a death or still birth takes

places, it is the responsibility of the people who have the knowledge of the whole event to report it for registration. Such people otherwise referred to as informants will be issued a standard form as follows:

Live birth Registration form	-Form B1
Death on still births	-Form SB1

It is expected that a certificate be issued for birth and death alone after the form has been properly filled and of the form is entered in an appropriate register. The samples are provided in the appendix.

As earlier stated, information on vital events will be given directly by the informant. However, an event can be missed because of lack of reporting, in such case the help of well known people called notifiers e.g. of nurses, doctors, priest or ward leaders sought in order to capture all the event. They are issued forms as follows:

Notification of Birth	-	Form B4
Notification of Death	-	Form D4
Notification of still Births	-	Form S.B3

The forms are collected in batch and are verified to ensure whether the event referred to has not been registered, if it has not, it is entered as usual in appropriate register.

The registrar collects the complete form and dispatches them on a monthly basis.

### **2.3.2 Time Limit For Registration**

For the purpose of accuracy, the most ideal thing is to register a birth immediately the child is named on the seventh or eighth day or longer period depending on the culture of the areas.

Registration should be done within the stipulated period usually sixty (60) days of which anything after attract a fees as stated in the rules and regulations

The time limit for registration of deaths is seven days (7 days) of the death. Registration of death after 7 days and within one month (thirty days) of death is subject to the payment of such fees as many as prescribed.

Registrar reserves right to summon person to register births in case of refuse to do so. If he/she fails to appear in the registrar office within 15 days of summon notice he/she is liable to punishment under section 48 of the decree 69 of 1992.

### **2.3.3 Data collection and Documentation**

The process of registration of a birth, death or still birth commence from, the collection of information in the live birth registration from, the death registration from or the Report on still Birth as the case may be.

#### **1. The live Birth Registration form**

This report on live birth. A live birth according to National Population Commission manual on Registration of Births and Death is a "Complete Expulsion or extraction from its mother, of a product of a conception irrespective of the duration of pregnancy which will after such separation breathes or show any evidence of life such as breathing of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles or not the umbilical cord has been out or the placenta is attached. Each product of such a birth is considered live-born regardless of gestation age".

The entries in this form includes registration centre and local government area, particularly of the child, mother, father and information if any and finally the signature.

## 2. Death Registration Form

This form most be used for reporting deaths. A death simply put is a permanent disappearance of all evidence of life at any time, after live birth has taken place.

The entries in this form is also similar to the live birth form. However, the cause of death must be fully described and certificate be issued.

## 3. Report on Still Birth

This is "Death prior to the completion or extraction form its mother of a product of conception, but after the whole process there were no evidence of life such as beating of the heart, population of the umbilical cord, or definite movement of voluntary muscles".

It should be noted that after the whole registration. A certificate must be issued immediately.

### **2.3.4 Coding and Tabulation Procedures**

Coding, because of enormous data required on vital registration process, there is a need to design a much more simpler method of entering these facts hence coding.

Coding is the process of assigning alphanumeric digits to represent information for purposes of facilitating the production of vital statistics. The procedure merely converts information into machine readable codes and is not, in any way, information to the legal content of the document concerned

For necessary electronic data processing and other mechanical handling of the data from the civil Registration Project, Codes are assigned to some variables.

In the light of the above, country codes as contained in the coding instructions for International Migration have been adopted in the civil Registration Project.

### **Tabulation**

As earlier said, information available through the registration system is very useful for administrative and statistical purposes. Hence the data in to three basic forms will be processed by the computer.

The form sent to processing centre will under go three stages before finally processed by the computer department. This stage are:

a. **Quality Control Section:**

This section ensures that the three registration forms received are counted so as to correspond with the number claimed to have been sent from the local government area of the state.

b. **Coding Section:-** The assignment of codes to codes to various variable on the forms take place in this section

c. **Checking section:-** This is the name implies check for wrongly codes from department for passing.

The processed data will be sent tabulation section in print out form where it will be extracted into some table format.

The sample format is attached.

## **2.4 THE USES OF COMPUTERS IN VITAL REGISTRATION SYSTEM**

Computer in the recent times has come to be the most efficient processing tool, because of its electronic in nature, it works tirelessly and accurately once it is properly instructed

However, the points below explain its memory use in vital registration.

- i. Information can be available to several people at the same time through networking.
- ii. Information from external sources can be fed in to a central Computer for update.
- iii. The quality of work that can be done in data collection analysis, storage and communication within the short time is phenomenal. Typing and re-typing is eliminated.
- iv. The quality of output is better. There are aids given by different applications in the computer that leads to a better quality of work with least errors either of spelling or analysis. Pictures could be scanned in to the report as well as graphics thus producing more presentable products
- v. Time of analysis of update is reduced. In business this may mean financial and other reports being produced promptly which lead to faster decision-making or inquiries answered promptly.
- vi. Access to information is instantaneous except protected from maintenance persons
- vii. Materials wastage is reduced as errors are corrected on the screen before any hard copy is made, if needed.

viii. Security of vital information is ensured by the use of password.

Password is a combination of letter, number or special characters, which serve as a lock to a particular document. This normally prevents unauthorised access to some vital information.

## CHAPTER THREE

### 3.0 SYSTEM ANALYSIS AND DESIGN

A system is variously defined in different textbook. Oxford directory put it as a group of things or parts working together as a whole. Ayeni (1992) defined system as a collection of components, which interact with one another to satisfy objectives according to set of functional, and performance specifications.

From the definitions above, it can therefore be said that System Analysis is simply analysis of all the steps in an operation in order to decide how to perform it most efficiently.

In general having made recorded necessary observations the data need be analysed. The system analyst should review the entire activities and operations involved in the system with a view to identifying the good and bad features of the system and those things that could probably be done differently and better. Formal documentations of the alternatives solutions should be prepared and comparisons with the existing solution made and suggestions for best feasible solution recommended to the management for consideration and approval

System Analysis however involves several stages. They explain subsequently.

#### **Problem definition**

This stage starts out with an extensive investigation of what is needed from the proposed computerisation i.e it review the current system of operations in the Vital Registration Department of National Population



Commission. The stage is a vital stage as it forms the foundation of the whole system development so it has to be properly carried out. The staff of Vital Registration was also carried along but it was noted that because of their little or no knowledge of computer they could not actually state exactly what they want from the new system but as a trained System Analyst I was able to marry my knowledge with their explanation to make better things.

A look at the manual system in the department shows the following shortcomings

1. Misplacement, mishandling and loss of vital form or records.
2. Time and effort wastage
3. Incorrect entry which in turns lead to incorrect results
4. It is grossly inefficient
5. Duplication of records

Moreover, after several weeks of consultation some specification were drawn as follows

- 1. Reports should be generated automatically
2. The system should allow interrogating the database to find out information.
3. Staff should be able to quickly obtain information about any record.
4. It should provide facilities for many people interrogating the database at the same time.
5. The system should encourage relationship in which information can be shared or access from different location

**Feasibility Study:** This is as the name implies, is an examination of the possible solutions to the problem and indeed whether the problem can be

solved at all. In other word one considers whether solution to a problem is feasible i.e if the proposed system is justifiable so as to prevent wasting many years or months of effort and many in trying to evaluate and execute a project that is too large, uncontrollable or even impossible to carry out. The feasibility study is a miniature system analysis and design effort that entails an exploration of alternatives design options and analysis of the cost and benefit of each alternatives. If the study seems to be realistic in their potential costs and benefits then the project proceeds to the next phase otherwise terminated.

The major studies considered in this are as follows.

- a. **Operational Feasibility;** This study is concerned with the workability of the proposed system when developed and implemented. The operational feasibility of the proposed system was found to be operationally feasible during the course of research.
- b. **Technical feasibility:** This test seeks to clarify if the proposed system can be achieved with the current equipment. The vital-registration department of NPC could afford more equipment
- c. **Economic/financial feasibility:** The cost of implementation of the new system was also considered

Before discovering the system is feasible the following were taken into account

1. Can the technology on ground or about purchasing meet the requirements of the proposed system.

2. Is management happy that the extra that the will be offered by the system justify the introduction of the computer in terms of cost of running and maintaining the system.
3. who will undertake the massive task of typing in the data to system
4. can the system be developed in a sensible amount of time given the available resources, and what about the changeover period.
5. is the introduction of computerized system likely to cause staff problems.

The above feasibility study is usually presented in the form of a report. Which if accepted as stated earlier entail proceeding to the next phase.

### **System Analysis**

After the relevant data has been collected, it was analysed, this where the real work of system analyst takes place because at the end a final report stating and recommending whether the project should proceeds or terminates.

The possible solution to the problem may be expressed in the form of -diagrams that can be understood by people of a non technical nature and might contain a simplified diagrammatic representation of the current and proposed systems.

### **System Designs**

This stage calls for innovation, creating and imagination on the part of the system analyst. In case of a database system proposed for the vital registration, the task involved producing a database, which achieves the best performance at the least cost by focusing on facts, which affects cost and/or performance. The considerations for the physical design may include access path storage mapping and storage allocation.

The step involved in system design are as follow

- i. Design of the input
- ii. Design of the output
- iii. Design of files and procedures

The steps above are discussed in the subsequent chapter.

## CHAPTER FOUR

### 4.0 SYSTEM DEVELOPMENT AND IMPLEMENTATION

#### 4.1 HARDWARE REQUIREMENT

Computer System is essentially divided into two major parts namely hardware and software. Both of them work hand in hand to ensure a proper job done.

Having analysed the system in the previous chapter, this chapter proposes hardware requirement for the proposed project. There is however need to expatiate more on hardware.

C.S. French (1996) defined hardware as the name given to all the physical devices found in a computer system. That is all the computing resources attached together to perform computing functions.

Hardware as viewed by C.S. French can be subdivided into the following parts namely:

- i. Input hardware
- ii. Processing Hardware
- iii. Storage hardware
- iv. Output hardware

**Input hardware:** This refers to all the medium through which data, instructions and information enters into computer for further processing. It could be simplified as the medium through which user communicates with the system. The most common input hardware is the keyboard which comprises several keys e.g alphabet, numeric, function keys and special

5) Output:- An algorithm should provide an output of implementation

In general, algorithm can be represented by any of the following form:

- i. Pseudocode (Structured English)
- ii. Flowcharts
- iii. Nassi-shneidermum structure flow (NSSF) diagrams
- iv. English language
- v. Formulae
- vi. Decision trees
- vii. Wernier on diagrams

#### 4.3.2 Choice of Programming Language

Programming language is any artificial language that can be used to define a sequence of instructions that can be ultimately be processed and executed by computer system.

Over the years, there has been tremendous increase in number of programming language available for Personal computer. Each of this language has their specific purpose i.e what they are good at. For example

BASIC designed basically for beginners

FORTTRAN designed for scientific jobs

COBOL & PASCAL for voluminous business operations

FOXPRO, PARADOX, ORACLE, Microsoft Access, Dbase III, IV and V for database operations

In view of the enormous data involved in vital registration processes, the writer has decided choosing Microsoft Access as the data management system to be used.

Microsoft Access is a database Management System, which is an integrated software that provide all capabilities of building, maintaining and extracting required information from a pool of database for quick decision making.

Microsoft Access is relational database developed by Microsoft Corporation. It was chosen because of numerous advantages it offers like;

- i. Flexibility i.e can be manipulated in many several ways even by no-programmers.
- ii. Production of neat output for quick management decision
- iii. Ability to set query in order to obtain a specific information
- iv. Ability to cope with enormous data, which will involve in vital registration processes.
- v. It will prevent unnecessary duplication of records
- vi. It provides security for vital files and also guide against unauthorised access to the computer.
- vii. Information can be accessed from a remote locations connected to a computer network.

### **Database Design**

Once we have defined the system objective the next is to put some thought into the design and content of the database. Since we are developing software to overcome the shortcomings of the existing system, the database design must be effective and efficient.

The most basic steps in designing database were strictly followed e.g

Determine the purpose of the database.

Determine the tables needed in the database.

Determine the fields needed in the database.

Identify fields with unique values in each record.

Determine the relationship between tables.

Refine the design.

Enter data and create other database objects.

The database objects like Table, Form, Report, Module and Query were employed in this project.

Table for Design for live registration birth.

Field	Data Type	Description
S/N	AutoNo	
Registration Centre	T	
Town/Village	T	
Local Government	T	
Year	N	
Volume Number	N	
Page Number	N	
State	T	
Date of Birth	Date/Time	
Sex	T	
Place of Birth	T	
Name of Child	T	
Mother's name	T	
Mother's age	N	
Name of Father	T	
Father's age	N	
Father's address	T	
Mother's address	T	

**Table for Design for Death.**

Field	Data Type	Description
S/N	AutoNo	
Registration Centre	T	
Town/Village	T	
Local Government	T	
Death Register volume	T	
Page Number	N	
State	T	
Date of Death	Date/Time	
Sex	T	
Place of Death	T	





## **CHAPTER FIVE**

### **5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 SUMMARY AND CONCLUSION**

Summarily, the research was carried out in order to pinpoint the shortcoming of the current operations, which among others include:

- i. Loss of vital records
- ii. Slow operations and prone to errors
- iii. Effort wastage leading to fatigue
- iv. Inability to make quick decisions
- v. Inability to be precise about the records entered or collected at any point in time.

With these shortcomings and considering the crucial role vital registration plays in the economic growth and planning of any nation (developed or developing), one needs to seek an alternative method which will be an improvement on the current system hence the computerization methods.

It was however, analysed step by step, the hardware requirements were stated, cost implications, software development including the input and output layout. These conditions if well implemented will definitely provide the following improvements

- i. Data & Information transmission at a faster rate.
- ii. Availability of information to the respective destination for quick decision making.

## 5.2 RECOMMENDATIONS

As earlier stated that the success of vital registration department as complimentary to census operations can not be over emphasized, there is need to recommend some important points which will enhance further development or an aid for further research in software development.

The following recommendations were however made after the research work.

- i. Full networking of computer should be embarked upon as this would enhance availability of records at various locations across the country and also improve data consistency.
- ii. The usual Africans Culture i.e Poor maintenance culture should not in any way exist if we want to make headway. So there must be periodic maintenance of the hardware parts on ground. It is however recommended that a consultant or a qualified system engineer be employed.
- iii. Software development should be limited to some extent to the organization programmers as they will be able to incorporate the requirement of the commission in the program. It should however be noted that for them to be proficient, effective, efficient and up-to-date they must be well remunerated and be sending regularly on software training both within and outside the country
- iv. Acquisition of hardware should be done by the organisation system engineer rather than contracting it outside.

- v. There should be strict adherence to the law establishing the commission. In other word, there should be punishment for anybody that violates any law.
- vi. Proper awareness on the process of vital registration through all the available media should be done. It should also be carried out both in rural and urban areas.

## REFERENCES

- Adeuyi, A.A. and Adepoju, A. (1983) *“Non-conventional sources of population data in Nigeria: Problems and Prospects”* In: Technical and Political aspects of population Enumeration in Nigeria, Adepoju, A. (ed), Dept of Demography and Social Statistics, OAU, Ile-Ife.
- Ayeni, J.O.A (1992) *Fundamentals of Computing*. University of Lagos press.
- Kpedekpo, G.M.K (1982) Essentials of Demographic Analysis for Africa, Heinemann, London.
- National Population Commission (1998) 1991 population census of the Federal Republic of Nigeria. Analytical Report at the National level, Abuja, Nigeria.
- National Population Commission Manual on Registration of Births and Deaths
- Programming using Microsoft Access 2000
- Shehu Musa (1989) *“National Headcount in Nigeria prospects and challenges”* paper presented at the Nigeria Institute of International Affairs on Tuesday 11<sup>th</sup> July 1989.
- U.N. 1958. Principles and recommendation for National Population censuses, Statistical papers series M No 27

Option Compare Database

Private Sub Command47\_Click()

On Error GoTo Err\_Command47\_Click

DoCmd.Close

Exit\_Command47\_Click:

Exit Sub

Err\_Command47\_Click:

MsgBox Err.Description

Resume Exit\_Command47\_Click

End Sub

Private Sub Command48\_Click()

On Error GoTo Err\_Command48\_Click

DoCmd.GoToRecord , , acNewRec

Exit\_Command48\_Click:

Exit Sub

Err\_Command48\_Click:

MsgBox Err.Description

Resume Exit\_Command48\_Click

End Sub

Private Sub Command49\_Click()

On Error GoTo Err\_Command49\_Click

DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70

DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70

Exit\_Command49\_Click:

Exit Sub

Err\_Command49\_Click:

MsgBox Err.Description

Resume Exit\_Command49\_Click

End Sub

Private Sub Command50\_Click()

On Error GoTo Err\_Command50\_Click

DoCmd.PrintOut

Exit\_Command50\_Click:

Exit Sub

Err\_Command50\_Click:

MsgBox Err.Description

Resume Exit\_Command50\_Click

End Sub

```
Option Compare Database

Private Sub Command40_Click()
    On Error GoTo Err_Command40_Click
        DoCmd.Close
    Exit_Command40_Click:
    Exit Sub
Err_Command40_Click:
    MsgBox Err.Description
    Resume Exit_Command40_Click
End Sub

Private Sub Command41_Click()
    On Error GoTo Err_Command41_Click
DoCmd.PrintOut
    Exit_Command41_Click:
    Exit Sub
Err_Command41_Click:
    MsgBox Err.Description
    Resume Exit_Command41_Click
End Sub

Private Sub Command42_Click()
    On Error GoTo Err_Command42_Click
DoCmd.GoToRecord , , acNewRec
    Exit_Command42_Click:
```



Exit Sub

Err\_Command42\_Click:

MsgBox Err.Description

Resume Exit\_Command42\_Click

End Sub

Private Sub Command43\_Click()

On Error GoTo Err\_Command43\_Click

DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70

DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70

Exit\_Command43\_Click:

Exit Sub

Err\_Command43\_Click:

MsgBox Err.Description

Resume Exit\_Command43\_Click

End Sub

Private Sub Command44\_Click()

On Error GoTo Err\_Command44\_Click

DoCmd.DoMenuItem acFormBar, acEditMenu, acUndo, , acMenuVer70

Exit\_Command44\_Click:

Exit Sub

Err\_Command44\_Click:

MsgBox Err.Description

Resume Exit\_Command44\_Click

End Sub

Exit Sub

Err\_Command42\_Click:

MsgBox Err.Description

Resume Exit\_Command42\_Click

End Sub

Private Sub Command43\_Click()

On Error GoTo Err\_Command43\_Click

DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70

DoCmd.DoMenuItem acFormBar, acEditMenu, 6, , acMenuVer70

Exit\_Command43\_Click:

Exit Sub

Err\_Command43\_Click:

MsgBox Err.Description

Resume Exit\_Command43\_Click

End Sub

Private Sub Command44\_Click()

On Error GoTo Err\_Command44\_Click

DoCmd.DoMenuItem acFormBar, acEditMenu, acUndo, . acMenuVer70

# NATIONAL POPULATION COMMISSION

## DEATH REGISTRATION FORM

<b>SN</b>	1	<b>Place of Death</b>	Hospital
<b>Registration Centre</b>	Bosso	<b>Age at Death</b>	20
<b>Town/Village</b>	Minna	<b>Name of Village</b>	Bosso
<b>LGA</b>	Maikukele	<b>Address</b>	23, Bosso Rd
<b>Year</b>	1999	<b>Nationality</b>	Nigerian
<b>Volume Number</b>	1	<b>Marital Status</b>	Single
<b>Page Number</b>	1	<b>State of Origin(if NI)</b>	Niger
<b>State</b>	Niger	<b>Confirmed by Doct</b>	<input checked="" type="checkbox"/>
<b>Name of Child</b>	Siraj Abdul	<b>Informant Name</b>	Ndanusa Shehu
<b>Sex</b>	Male	<b>Relationship to Dec</b>	Uncle
<b>Date of Death</b>	3/6/00	<b>Address of Informa</b>	Kuta Road






--	--

--

# NATIONAL POPULATION COMMISSION



## REPORT ON STILL BIRTH FORM

S/N	1	Type of Delivery	Single
Registration Centre	Bagudu	Mother Name	Aishatu
Town/Village	Bida	Address of Mother	Gbangbara
LGA	Bida	Age	25
Volume Number	1	Nationality	Nigerian
Page Number	1	State of Origin (if Nigerian)	Niger
State	Niger	Informant Name	Mohammed Yabagi
Place of Birth	Gbangbara	Relationship to Mother	Uncle
Name of Village/Village	Bida	Address of Informant	Dokodza
Date of Delivery	2/2/99		
Sex	Male		

		Add Record
Delete Record		

# NATIONAL POPULATION COMMISSION

## BIRTH REGISTRATION FORM

<b>S/N</b>	1	<b>Name of Child</b>	Sonfada Yabagi
<b>Registration Centre</b>	Kuta	<b>Name of Mother</b>	Hadiza Yabagi
<b>Town/Village</b>	Minna	<b>Mother Age</b>	42
<b>LGA</b>	Shiroro	<b>State of Origin</b>	Niger
<b>Year</b>	1998	<b>Address of Father</b>	Kuta Road
<b>Volume Number</b>	1	<b>Address of Mother</b>	Kuta Road
<b>Page Number</b>	1	<b>Father State of Origin</b>	Niger
<b>State</b>	Niger		
<b>Date of Birth</b>	9/9/79		
<b>Sex</b>	Male		
<b>Place of Birth</b>	Home	<b>Add Record</b>	