DEVELOPMENT OF COMPUTER BASED SOFTWARE FOR OPERATIONS OF FEDERAL MINISTRY OF FINANCE ABUJA, NIGERIA

by

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TABLE OF CONTENTS

DECLARATION

I, Andemun, Joel Isaiah; do hereby declare that this project work titled "Development of Computer Based Software for Operations of Federal Ministry of Finance Abuja, Nigeria" was carried out be me under the supervision of Dr. Y.A Yahaya, of the department of Mathematics and Computer Science, Federal University of Technology, Minna, Nigeria.

....

Andemun Joel Isaiah Date

DEDICATION

This project is dedicated to Almighty God, my entire family, my late father and my mother.

DECLARATION

I, Andemun J. Isaiah hereby declare that this project titled "Development of Computer Based Software for Operations of Federal Ministry of Finance, Abuja" was carried out by me under the supervision of Dr.Y. A. Yahaya, of the Department of Mathematics and Computer Science, Federal University of Technology, Minna, Niger State, Nigeria.

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Signature

18/05/2010
Date

ABSTRACT

All government ministries are expected according to finance guidelines to render returns within stipulated days at the end of each quarter to the Federal Ministry of Finance that has been empowered with the task of supervising the affairs of all the Ministries. This work therefore focuses more on what finance entails and extensively on the use of computer technology in the area of computerizing of monthly returns of government accounts using the vast facilities/features of DbaseIV language system for fast preparation of returns of all required documents in the government ministries.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Today, we are in the era of Information Technology, continuous existence of any organisation depends on the volume of information generated and processed. Most organisation whether government, business or social tend to be overwhelmed by paper work, for example in a Commercial outfit, where there are various transactions such as income, operating overheads, cost of materials, Asset and Liabilities and other related costs are posted in various accounts in the general ledger. The totality of this reflects the total worth and profitability of the company.

This information needs to be analyzed for the executives to take both long and short term decisions, which will affect the running of the company. This implies that for any organisation to continue to exist, it must process the current generated information which aids its operation and decision to achieve the set objectives; there is an unprecedented large volume of data being generate today in any business transaction. These data which are transformed to information need to be stored for easy referencing purpose hence the need for electronic computer system.

In the past five years, there has been a boost in the utilization of information technology for the running of business enterprises in Nigeria. Much of this has come about as a result of the advent of micro or personal computers. The application of computer therefore, enables business to meet up with the demand of increased economic activities nation

wide. It also aids business in making decision that will help the business to thrive despite the competition from other firms.

However, many businesses are beginning to realize that computer systems can help them keep ahead of the competition, perhaps by providing new delivery systems for services, or by supplying accurate and up to date information derives from the use of computer is more reliable and efficient than manual system. Many Accountants found in playing their roles as financial advisers, auditors of financial custodians, they have to be re-educated in the new technology methodologies.

Having realized the need for the introduction of computer within the accounting profession, one must also note that the advent of office automation will lead to less utilization and movement of paper within the office. Vouchers, Journals and many of the Accountants traditional source or primary documents would probably not exist as everything would have been entered directly into the computer.

The Nigerian Accountants in the future therefore, would have to learn to do without this traditional documents and reports and instead, relate and work with the computer.

1.1 Background of Study

In its very simplistic version, accounting is defined as the language of business. This derives from the fact that every business undertaking will seek to ensure periodically its ability to stay on in operation through sustained profit – making and management of its various assets both liquid and otherwise. Accounting techniques constitutes a means of

easy measurements of these and other relevant parameters which relate to the business world.

When viewed in a broader perspective, the meaning of the term "business undertaking" will include any kind of organisation be it commercial, religious or any other non – profit making institution, and of course even government. This is so because all have various transactions as the bottom – line of which is financial and share a number of common problems with the ordinary business concerns. Therefore accounting is a very pervasive subject transcending several boarders and affecting the economic of all organisations.
In an ever changing world, accounting has been adapted to a number of special roles, apart from the traditional role of historical record keeping leading to the preparation of various books of accounts, accounting and its tools are employed in financial and management plans, production of various specialised reports which aid their uses (investors, shareholders, tax authorities etc) to a more informed position and action.

Accounting has also aided development in technological any many other diverse fields by its direct impact on the overall financial progress of organisation pursuing these goals.

1.2 Statement of the Problem

Generally, the problems of accounting and financial reporting are as follows:-

i. Lack of financial information useful for determining and predicting the flows, balances and requirements of short-term financial resources of the organisation.

ii. Lack of financial information useful for determining and predicting the economic condition of the organisation and changes there – in.

iii. Lack of financial information useful for monitoring performance under terms of legal, contractual and fiduciary requirements.

iv. Lack of financial information useful for budgeting and for predicting the impact of the acquisition and allocation of resources on the achievement of operational objectives.

1.3 Objectives of the Study

The purpose of this study is to explore means of computerizing the monthly returns of Government Accounts. Revenues accrue to the government from several sources. The objective is to use computer to:-

i. Enhance the operations of

ii. To improve on the rate of performance hence rendering returns before the end of each financial year.

iii. To improve on processing procedure.

iv. To have accurate and quicker

To provide financial information useful for evaluating managerial and organisational performance through:-

a. The determination of costs of programme, functions and activities in a manner which facilitates analysis and valid comparisons with established criteria among time periods.

b. The valuation of the efficiency and economy of operations of organisational units, programmes, activities and functions.

c. The evaluation of the results of programme, activities and functions and their effectiveness in achieving their goals and objectives.

d. The evaluation of the equity with which the burden of providing resources for government operations is imposed.

Given the above objectives, accounting is considered so important to an organisation such that without it, the immediate pecuniary will be experienced by the organisation. Accounting functions procedures and activities are carried out almost immediately any transaction takes place. All forms of fraud committed can be more readily exposed by accounting system and procedures and practice is installed in the business organisation.

Furthermore, the accounting functions provide the working materials with which the audit function commences. In other words, without accounting function being carried out (whether by an Accountant or an Auditor) the audit function cannot commence because it is the accounts (i.e. financial statements) prepare that is being re-examined and reported on by the auditor.

Accounting in business, basically consists of management accounting, financial accounting and management costing inclusive. Accounting takes care of the day – to – day management information needs and is so basic to the profitability and viability of the business. It makes use of business events in the past as well as helps to provide

information on which to take immediate decisions and helps in planning and projecting operations for future budgeting and profit planning.

Financial accounting is rather more traditional and historical record of business events and activities, the preparation of various books of account and financial statement such as ledger, trial balance, profit and loss accounts and balances sheets are used by various parties (both within and outside the business) in the past. It is essential that the financial accounting system that is subject to auditing should be employed in running the modern day business.

Accounting is a basic functional and indispensable element to business progress and prosperity. It takes care of business assets and liabilities, their safety, proper recording, efficient use and adherence to management policies. It combines the three phases of the context of business events past, present and future. A good accounting system ensures that errors and fraud are thrown open as soon as possible. This is more so because the accounting function is part of the management responsibilities. When properly designed and implemented, accounting contributes immensely to business progress and profitability.

At this juncture, it is necessary to explain the concept of book keeping. Book keeping can be defined as the science and art of correctly recording in the books all those business transactions of any organization.

1.4 Definition of Terms

i. **Current Assets**: - These are those assets that are usually consumed in the course of one accounting year.

ii. **Liabilities:** - Debts of an organisation. The claims of creditors against the assets of a business or an organisation.

iii. **Loans**: - This is a sum of money borrowed (usually from a bank) and expected to be paid back with some amount of interest.

iv. **Income Statement**: - A financial statement showing the results of operations for a business by matching revenue and related expenses for a particular accounting period.

v. **Cash Flow**: - This is the total amount of capital both acquired and spent needed to keep a business or organisation functioning.

vi. **Expenses**: - The cost of goods and services used up in the process of obtaining revenue.

vii. **Collating**: - This is the gathering of all the bank statements and cash vouchers to facilitate the preparation of bank reconciliation statement at the end of every month.

viii. **Cash Book**: - This is a book of original entry where cash receipts and cash payment are recorded during any financial transactions.

ix. **Computerisation**: - This is the use of computer to process cash receipts, cash payments and analysis as they arise in order to generate the desired results that shall be used for management decision-making.

x. **Cash Receipt**: - These are the various items of cash receipts by a bank as recorded on the debit side of the main cashbook.

CHAPTER TWO

LITERATURE REVIEW

The continuous substitution of computer based system for manual procedures has in modern days become a worldwide affair.

This is because it is relevant in all aspects of human endeavor. In addition to speedy retrieval of information and security of data, computer operation allows for retrieval of reliable data due to the accuracy of computers.

However, a computerized procedure cannot just be put in place without going through some stages of its development. The analyses of these procedures were examined and the result was considered in the design of the computerized system. Indeed, it is a known fact that the world is in the computer age and any organization that wants to be relevant in the future needs to be computerized.

2.1 Sources of Government Revenue

Some of the main sources of government revenue are as follows;

Borrowing

Fees and other specific charges

Earning from public enterprises and rents

Grants

Returns from Direct Investment

Taxation.

i. Borrowing

Borrowing is a major source of government revenue. Imo State of Nigeria, for example, is said to have borrowed a sum of N167 million (made of both external and internal loans) between 1983 and 1985. This loan was used in establishing some industries and utilities such as electricity, water and road.

ii. Fees and Other Specific Charges

Payments made for special services provided by the government to individuals are called "fees" for example; you pay a fee to obtain the deed or certificate of occupancy of your house or obtain a passport or license. Licenses are legal permits to do certain things. You must pay for a license to operate your motor vehicle or to distribute and sell your beer.

iii. Earnings from Public Enterprise Royalties and Rents

Government agencies or corporations are instituted to sell certain products or services at established prices. The earnings or profits of these public enterprises are a source of funds for the government. In Nigeria, however, the revenue from this source is insignificant almost running at a loss.

The government also collects rents for the use of public land, and royalties from companies that are granted rights to exploration.

iv. Grants

A country can receive grants from other countries. Also, the Federal Government of Nigeria often makes grants to the state governments for projects it wants them to accomplish.

v. Returns from Direct Investment

Governments have recently participated in the establishment of projects or the purchase of shares in public companies such as the U.A.C., Nkalagu Cement industry, banks and insurance house.

vi. Taxation

This is the major source of government revenue. Taxes include income tax, property tax, export and import duties, production (that is excise duty) and expenditure taxes.

Definition of Tax

A tax is a compulsory payment made by each eligible citizen towards the expenditure of the state. A tax is levied by the government without regard to the specific benefits that individual taxpayers may receive. For example, the income tax levied on adult individuals has no direct relationship with the amount of benefits which the payers receive from the government, whereas licence fees, which are not taxes, have direct bearing with the changes made on the users. Vehicle owner pay for licences which reflect the sizes and weights of their vehicles. The size and weight determine the benefits users derive from government facilities such as roads and bridges.

Why taxes are paid

The primary purpose of taxation is to raise revenue for the government. In modern times, taxation does more than this. The government now uses taxation to promote economic and social policies.

Objective of Taxation in Nigeria

In order to achieve reconciliation between tax payers and level of development for national planning, there are certain objectives that must be taken into consideration. These include the following:-

i. Generating revenue for the government: - This is however the main purpose of Taxation and in fact the basic one. The revenue generated is used to finance the government expenditure from one financial period to the other for the well-being of her citizens.

ii. To protect income and infant industries:- This could be a way of discouraging importation by placing high taxes on some imported items while encouraging local manufacturers with low or tax exception on their products with the intention of developing local Industries. In fact, Japan used this measure and succeeded.

iii. To fight inflation: - This comes in form of discouraging consumption of specific items by imposing higher taxes of those goods which will have brought about inflation. This could be used when it is determined that citizens' test is given through a direction and result in living ostentatiously, taxes could be increased so as to redirect such a local and normal lines.

iv. To achieve equitable distribution of resources by using progressive tax rate: This could be done by imposing higher taxes on those with higher standard of living such as

Vehicle tax, Hosing tax, etc. The higher the value of what one use, the higher the tax one pay on such property.

2.2 Functions of Federal Ministry of Finance.

The core functions of the Ministry are derived from the above mentioned laws. Presently, the major functions of the Ministry are as follows:

i. Preparing annual estimates of revenue and expenditure of the Federal Government;

ii. Formulating policies on fiscal matters;

iii. Formulating policies in collaboration with Central Bank of Nigeria to curb financial, inflationary and deflationary trends on the economy;

iv. Preparing and Publishing Quarterly and Annual Reports on the economy;

v. Mobilizing domestic and external financial resources for development purposes;

vi. Maintaining adequate foreign exchange reserves aimed at ensuring a healthy balance of payment position;

vii. Maintaining the internal and external value and stability of the Nigerian currency;

viii. Monitoring government revenue from oil and non-oil sources;

ix. Managing revenue allocation through the Federal Accounts Allocation Committee;

Relating with relevant international organizations and financial institutions such as the Bretton Wood Institutions IMF, World Bank, UNDP, IFC, as well as the West African Financial and Economic Commission, African Development Bank (ADB) Group, Economic Commission for Africa and many other Multilateral Agencies;

x. Coordinating bilateral economic relations with other countries;

xi. Overseeing the activities of the Capital Market;

xii. Supervising the Insurance Industry;

xiii. Supervising the Nigeria Deposit Insurance Corporation (NDIC); and

xiv. Supervising the Nigeria Export-Import Bank (NEXIM).

2.4 Current Structure of the Ministry

It may be pertinent at this juncture to say a few words about the current structure of the Ministry. The Federal Ministry of Finance is made up of the main Ministry of Finance and the Budget Office of the Federation. The main Ministry of Finance comprises five (5) Departments viz:-

- Administration;
- Economic Research and Policy Management;
- Finance and Accounts;
- Home Finance; and
- International Economic Relations.

In the Budget Office of the Federation (BOF), there are four (4) Departments:

- Revenue;
- Expenditure;
- Fiscal Measures; and
- Budget Monitoring and Evaluation.

In addition to the aforementioned Departments, there are seven (7) units, namely:-

- Legal;
- Information & Communications technology;
- Internal Audit;

- Federal Audit;
- Information, Public Relations and Media;
- Servicom; and
- Anti Corruption Unit.

In the exercise of its mandate, the following Extra- Ministerial Departments, Parastatals and Agencies also report to Government through the Federal Ministry of Finance:

i. Office of the Accountant – General of the Federation (OAGF);
ii. Federal Inland Revenue Service (FIRS);
iii. Debt Management Office (DMO)
iv. Nigeria Customs Service (NCS)
v. Securities and Exchange Commission (SEC)
vi. Nigeria Deposit Insurance Corporation (NDIC)
vii. National Insurance Commission NAIC)
viii. Investments and Securities Tribunal (IST) and
ix. Nigerian Export-Import Bank

In performing its functions, the ministry has clearly specified its vision and mission. The Ministry's vision is "to be the first in service delivery".

2.5 Objectives of Government Expenditure

The following are the primary objective of government expenditure.

i. The government provides goods and services which the private sector would otherwise not provide or would provide at a much higher costs to the consumer. For example, the government may spend heavily to defend the nation from external aggression and internal

conflicts. The defence of the country and the maintenance of law and order are two major responsibilities of the government, and the private sector cannot, and should not conduct or provide them.

ii. The government attempts to work towards an equitable distribution of income mainly through its transfer payments, which are designed to boost the incomes of specific recipients such as the aged, the sick, the unemployed and other dependent people like the physically handicapped. These activities are known as social welfare services, and they include education, social insurance, and the provision of pensions and unemployment and old age benefits from institutions such as the Nigeria National Provident Fund.

iii. The government spends heavily to provide economic services for its citizen.

iv. It often manipulates its expenditure in pursuit of economic stability, which it tries to stimulate economic activity when a recession threatens and to restrain it when inflation threatens.

v. The government spends to provide employment to its citizens.

2.6 Revenue Allocation in Nigeria

Revenue allocation in Nigeria means the sharing of the nation's wealth between the component parts of the nation that is between the Central state and local governments. The Federation's accounts, receipts or revenues come from excise duties, custom duties and income taxes. The revenues accruing from these sources go into the common pool, which is then shared between the Federal, state and local governments of the country.

Revenue allocation in Nigeria has become a very sensitive and controversial matter. This is understandable. Every state of the Federation wants to make sure that it has a

large share of the common pool to enable it to meet its responsibilities to its citizenry. Again, this is bound to be so in a situation where the states are economically unviable and, hence, have no funds to meet their basic needs.

It is not surprising, therefore, that successive governments have made efforts to produce a revenue allocation formula. At the moment, the Central, or Federal, Government has a larger share of the nation's wealth. States are not happy with this situation, and want a situation where a larger percentage of the revenue goes to the state and local government. They contend that the basic responsibilities of the country are mostly borne by the state and the local governments. They readily cite case such as primary school education and health care, which responsibilities of the state governments.

The states have a good case but the federalists claim that the Central Government has grater responsibilities to bear. As a matter of fact, it has always been given the largest share of the common pool.

The current revenue allocation formula was decreed in 1984. It shares out the Federation Account Revenue as follows:-

Federal Governments share	55%
State Governments share	32.5%
Local Governments share	10%
Ecological Problems	1%
Mineral Producing Areas	1.5%

The decree or law also stipulates that the states share of 32.5% should be further shared as follows:

Minimum Responsibility or

Equality of States	40%
Population	40%
Special Development (Primary School Enrolment)	15%
Internal Revenue Efforts	5%

2.7 National Income and Income of the Government

The national income must be distinguished from the income of the government. The flow of goods and services, which result from the application of human effort to nature resources, forms the real national income or national product of a community. In other words, the national income is the value of all economic activities of the community within a specified period. The income of the government on the other hand, refers to the revenue it raises through taxation and borrowing. The government itself contributes to the nation's national income only takes into account of these good and service, which are exchanged for money.

In real terms, the national income of Nigeria comprises the full value of the following items:

1. All the products of the extractive or primary industries of the country for example, agriculture, forestry, fishing, mining and quarrying;
2. All the goods produced by the manufacturing and construction industries, for example, textiles, beer, shoes, hotels and school buildings;
3. The value of all service, like the services of teachers, doctors, engineers, clerks and sales persons of retail and department stores;

4. The total rent paid for dwelling houses and the amount which would have been paid for owner-occupied houses; and

5. The net income from abroad, that is, the difference between the income from abroad and the payments made to other countries.

Uses of National Income Statistics

i. National income statistics are used to indicate the overall standard of living of the people. The national income of a country is its flow of wealth, and wealth is the best indicator of well-being even though the two terms are not identical. The larger the size of the national income, the higher the standard of living of the people, provided that the income is equitably distributed.

ii. National income statistics are used to compare the living standards of different countries. This is done on the basis of average income per head, that is to say, per capita income.

iii. National income statistics are used to calculate the rate at which a nation's income is growing. This enables us to know whether the national income is growing as fast as it should and whether there is sufficient investment to maintain living standards in the future. It also enables us to know the rate which the incomes of other countries are growing.

iv. National income statistics assist the government in planning economic development. They give information on which future planning may be based. Successful planning requires fairly accurate figures upon which decisions can be based it is.

2.8 Operation of Bank Accounts

Regular collection of Bank Statements and advices is of utmost importance and one or two members of staff should be assigned to the responsibility of visiting the bank for this all documents received from the bank should be submitted to the head of given for

i. A register is to maintain and record all bank advices and disposal particulars for record purpose.
ii. Receipts are to be issued for all Bank Credit Advices and these receipts must be posted into the appropriate Cash Book and the cheque Summary Register.
iii. All bank Debit Advices must be checked to ensure that such debts have bee authorized and a payment voucher raised for the transaction for positing to the cash Book and cheque summary register.
iv. Advices for Internal Bank Adjustment (IBA) transfers must be covered by receipts or payment vouchers as appropriate. Care must be taken to ensure the correctness of the figures and checking into the Bank Statement is necessary.
v. Listed cheques indicating all the cheque paid from the Account should be properly and promptly scrutinized and checked with the cash book and other records in the pay office to ensure that only account with the bank.

2.9 The Treasury Department

The Treasury Department Internal Audit Division carries out intensive and effective monitoring of the function and activities of the Internal Audit Units of all Ministries / Departments. This is achieved through:-

i. Through examination and approval of their Audit programmes for each year.

ii. Thorough examination and commenting on their monthly, quarterly and half-yearly reports. Queries are raised on these when necessary and recommendations are made for appropriate actions to be taken.

iii. Undertaking follow-up actions by paying visits to the Ministries / Departments to sort outstanding issues and to carry out on-the-spot appraisal of their activities.

iv. Carrying out special audit investigations as may be directed by the Accountant – General of the Federation.

2.10 Final Accounts and Preparation of the Monthly Transcript

The preparation of the Monthly Transcript is a very important aspect of the functions of a self-accounting Ministry because the transcript is the means by which information on the cash transactions are transmitted to the Treasury. The Ministry/Department is also required to maintain certain records and furnish a number of returns as part of the compilation of the final accounts indicating the position of the accounts for the month.

Preparation of Monthly Transcript

The Transcript is simply the summary of the total payments and receipts as posted in the Cash Book. The first step therefore is to obtain the Cash Book folios and all the receipts and the payment vouchers that have been posted in the month. These must be checked into the Cash book to ensure that all the documents have been received and agree with the figures posted in the Cash book. This initial checking is very important and must be assigned to an experienced staff to eliminate errors or irregularities, which may create problems in balancing later.

The daily totals are to be posted into an analysis book with columns for each classification extended into another column for recording the grand total of all the transactions for each day. This is done for each working day of the month and after processing for all the working days.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 Review of Existing System.

The existing system of accounts can be viewed from two perspectives: the manual and the electronic method. In the Nigerian context, the latter is practically non-existent while the former is ridden with corrupt practices which have necessitated the development of a system such as the one being implemented.

3.2 System Analysis

Analysis stage is an important stage between feasibility study and design of a system. Relevant information is gathered and must be examined in order to ascertain paper assessment of present system. According to Daniel and Yeastes (1983) "System Analysis is generally the identification and definition of problem which is worth solving with limited resources". The role of the system analyst can not be over emphasized as he collect data on the existing system or intended system and performs critical analysis of the data to factor out relevant information, such requirements have to compliment users need. Result of systems analysis is the production of a requirement definition where systems services constraints and goals are established by consultation with system users or viewing existing system and its inadequacies.

3.3 Program Design

After an analysis of some selected equations, the program design therefore follows.

The appropriate Interface Design model for the software is the Incremental model. The sketch of the model is presented below;

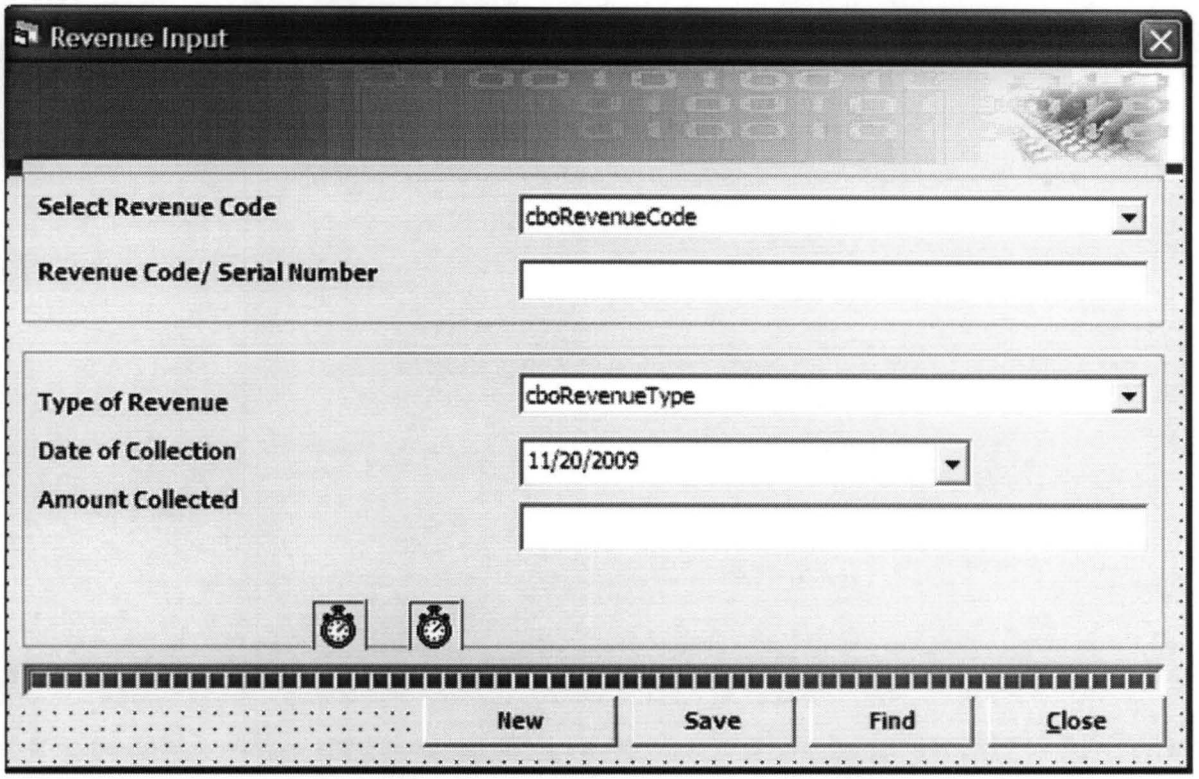

Fig.: 3.1 Revenue Input

The various shapes shown above are controls to be placed on a form, with labels for easy program implementation. A control is an object used in Visual Basic programming to add pre-defined input boxes, labels, colors and so on to the program form. They consist of properties, methods and Events. An example of a common control is a Command Button. The user simply picks and drops a control when required in his/her program interface.

The form design below will display all the records contain in the database.

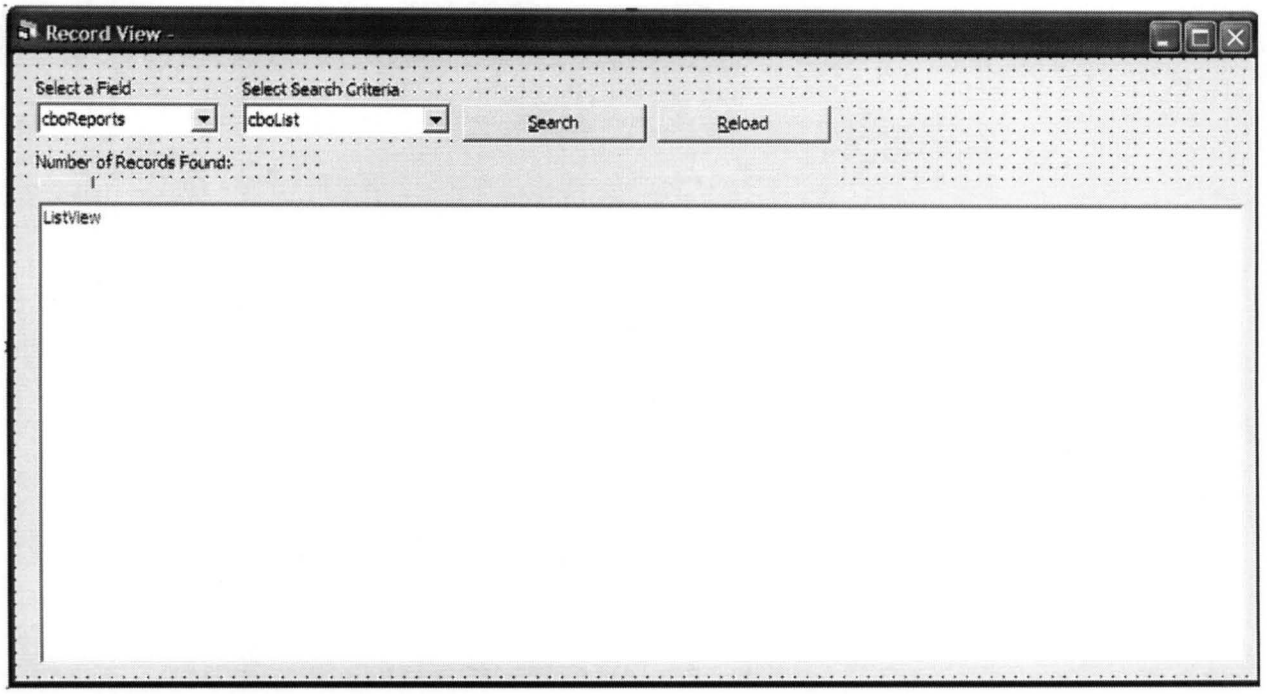

Fig.: 3.2 Record View

3.2. 2. Database Specification

The specification of the database is given below; the design will be carried out in Microsoft Access.

tbl_Record : Table

Field Name	Data Type
RevenueCode	Text
SerialNo	Text
RevenueType	Text
CollectionDate	Date/Time
Amount	Number
Month	Text
Year	Text

Fig.: 3.3 Database Specification View

3.4 Program Modules (Algorithms)

Code in Visual Basic is stored in modules. There are three kinds of modules: form, standard, and class.

Form Modules

Form modules (.FRM file name extension) are the foundation of most Visual Basic applications. They can contain procedures that handle events, general procedures, and form-level declarations of variables, constants, types, and external procedures.

mdiMain.frm

(Declarations)

Sub MDIForm_Load

Sub MDIForm_Unload

Sub mExit_Click

Sub mNewAccount_Click

Sub mnuDelete_Click

Sub mnuEdit_Click

Sub mnuFind_Click

Sub mnuReport_Click

frmData.frm

(Declarations)

Sub cboRevenueCode_Click

Sub cmdFind_click

Sub cmdNew_Click

Sub RefreshMe

Sub cmdSave_Click

Sub Form_Load

Sub cmdClose_Click

Function SerialNumberGen

Sub LoadComboFields

Function SaveRecord

Sub tmrMsg_Timer

Sub tmrSave_Timer

Sub txtAmount_LostFocus

frmView.frm

(Declarations)

Sub cmdReload_Click

Sub cmdSearch_Click

Sub Form_Load

Sub Form_Resize

Standard Modules

Standard modules (.BAS file name extension) are containers for procedures and declarations commonly accessed by other modules within the application. They can

contain global (available to the whole application) or module-level declarations of variables, constants, types, external procedures, and global procedures.

mdlDatabase.bas

(Declarations)

Sub Connection

This is the module that connects the application with the database

mdlVariables.bas

(Declarations)

This is the module that holds all variables required in the program.

mdlMAIN.bas

(Declarations)

Sub Main

This is the main entry point for the program.

CHAPTER FOUR

PROGRAM DESIGN, TESTING & IMPLEMENTATION

Introduction

System implementation is the very last stage of the system development. It is the embodiment of all the other stages. The implementation process covers areas such as the phases of programming, system specification, system testing, system installation, and post implementation evaluation and the physical display of how the system works.

This chapter describes each of the program modules that make up the system, their functions show the system can be deployed, the tools used, and reasons for the choice.

4.1 Program Language

The programming language chosen for the development of the program is the Microsoft Visual Basic 6 (herein referred to as VB6). Due to the simple nature of the programming in Visual Basic, VB6 will be adequate. Other choices to develop this program would have been Java or C++. In order to write the program in Java there would be need for an environment capable of graphics, so the Java windows methods would have to be used. To have written the program in C++ would again require graphics capable functions. One such package with said function is Microsoft Visual C++ 6.0, but there are others. Any C++ package that is intended to develop windows software would work.

The C++ and Java environments would probably have made development longer and more difficult due to the more complex nature of each language, but each has its own

advantages. C++ would run with less overhead and therefore execute the program faster, while Java would allow the program to execute on more computers easily. Most programming languages are inherently command line based and C++ and Java are no exception. To do graphics with these languages requires extensions of the language that can be tricky and time consuming to implement. VB6 is a Rapid Application Development (RAD) tool that allows programmers to create Windows applications in very little time. It is the most popular programming language in the world, and has more programmers and lines of code than any of its nearest competitors. A VB6 program starts with a blank window, so the complexity is bypassed completely and one can immediately begin writing code and drawing the necessary shapes.

Because the program output is comprised mainly of textboxes, it has no need for complicated graphics functions. The basic windows environment of VB6 serves up enough useful graphics functions to get the job done.

4.1.1 Software Specification

The software specifications required for the implementation of the proposed system are outlined below.

A Compiler

Microsoft Visual Basic 6.0 Compiler: - A world Class computer software that converts Visual Basic program (*from a high-level language*) into an intermediate language or machine language.

Code Editor

Notepad ++ 5.0 :- This is a full featured source code editor for more than 20 programming languages available. It supports Visual Basic Code syntax and provides quick source code editing.

Database Management System (DBMS)

Microsoft Access 2007: - provides a well easy to use relational database management system, that supports SQL, and can also interact with other DBMS like MySQL, Oracle, DBase etc.

Windows Operating System

Windows XP:- This is an operating system with full fledged capabilities such as; Multi-user, multi-tasking, good Graphical User Interface etc.

4.2 Program Flowchart

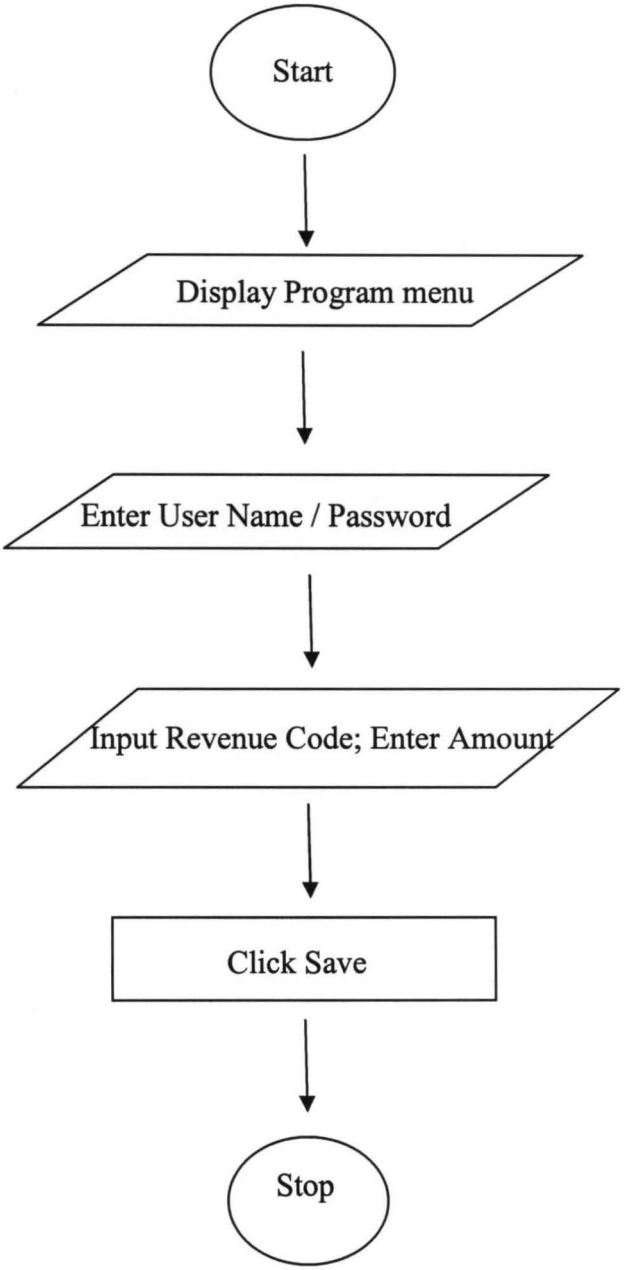

Fig. 4.1: Program Flowchart

4.3 Hardware Specification

The hardware specification used for this design and its proposed implementation is a Pentium IV processor with 1 GB of DDRAM, Monitor, Sound Card, VGA Card, Standard Keyboard and PS/2 Mouse. Other higher systems will work better.

4.4 Program Testing

4.4.1 Program Inputs

A sample of data is entered as shown below

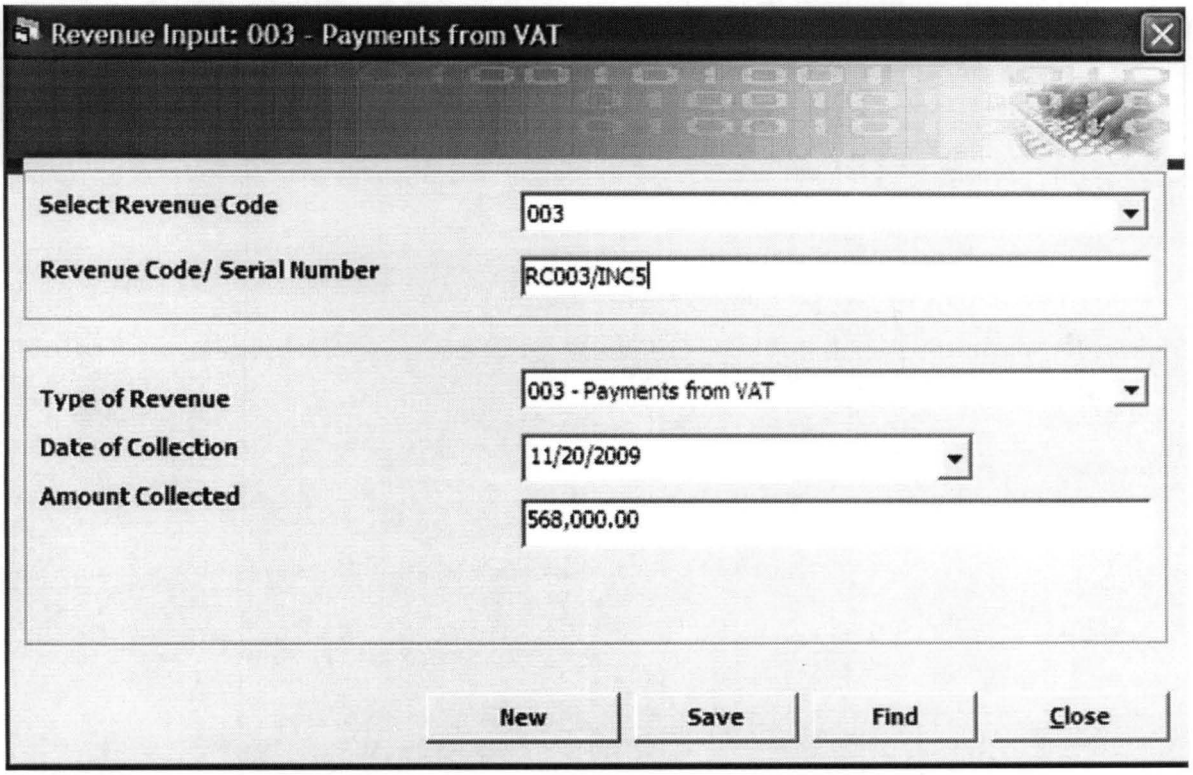

Fig.4.2 Revenue Input

4.4.2 Program Outputs

The program outputs are displayed as shown below

No:	Revenue Code	Serial No	Revenue Type	Date of Collection	Amount
1	001	RC001/S01	001 - Taxes	11/20/2009	60,000.00
2	002	RC002/S01	002 - Rates	11/20/2009	65,000.00
3	003	RC003/S01	003 - Local Licíense	11/20/2009	55,000.00
4	003	RC003/S02	003 - Local Licíense	11/20/2009	75,000.00
5	001	RC001/S02	001 - Taxes	12/20/2009	50,000.00
6	002	RC002/S02	002 - Rates	11/20/2009	65,000.00
7	002	RC002/S02	002 - Rates	11/20/2009	65,000.00
8	001	RC001/S03	001 - Taxes	11/20/2009	500,000.00
9	001	RC001/S04	001 - Taxes	11/20/2009	45,000.00
10	001	RC001/S05	001 - Taxes	12/10/2009	450,000.00
11	002	RC002/S04	002 - Rates	10/19/2009	450,000.00
12	002	RC002/S04	002 - Rates	6/19/2009	450,000.00
13	002	RC002/S04	002 - Rates	5/19/2009	450,000.00
14	001	RC001/S06	001 - Taxes	11/20/2009	4,544,500,000.00
15	002	RC002/S07	002 - Rates	11/20/2009	77,778,900.00
16	001	RC001/S07	001 - Taxes	4/10/2010	454,545.00
17	001	RC001/S07	001 - Taxes	4/10/2010	454,545.00
18	003	RC003/S03	005 - Rent	4/13/2010	454,545.00
19	003	RC003/S03	005 - Rent	4/13/2010	454,545.00
20	005	RC005/S01	005 - Rent	11/20/2009	887,878.00
21	001	RC001/INC9	001 - Payments from Oil	11/20/2009	55,555.00
22	001	RC001/INC10	001 - Payments from Oil	11/20/2009	4,454.00

Fig.: 4.3 Program Output

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Today, we are in the era of Information Technology, continuous existence of any organization depends on the volume of information generated and processed. Most organisation whether government, business or social tend to be overwhelmed by paper work.

This information needs to be analysed for the executives to take both long and short term decision. This implies that for any organization to continue to exist, it must process the current generated information which aids its operation and decision to unprecedented large volume of data being generated today in any business transaction. These data which are transformed to information need to be stored for easy referencing purpose hence the need for electronic computer system.

The application of computer enables business to meet up with the demand of increased economic activities nation wide.

Having realized the need for computer operation in the Ministry, one must also note that the advent of office automation will lead to less utilization and movement of papers within the offices.

It is necessary to state that an organization does not only require to be computerized, it is addition, demand an efficient operation the computerized procedures and it is expected to be pursued with the necessary vigour.

5.3 Conclusion

Further research work can still be carried out on computerization of operations of the Ministry with emphasis on :-

i. The different Departments and their duties.
ii. Different transaction of the Ministry.
iii. The collection of Government Revenue, and Formulation of Tax Policies.
iv. Preparation of Annual Accounts of Ministries, Extra-Ministerial Department etc.

5.4 Recommendation

The specific recommendations to be highlighted in computer application are:-

i. It will enhance the efficient operation of the organization in order to achieve the desired objectives.
ii. It will create speedy procedures for retrieving all relevant information.
iii. It would avoid data manipulation due to access to data as data stored in computer are more secured than manual.
iv. It will reduce complications that might arise as a result of increase in the organization records and vital information.

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frmView.frm

(Declarations)

Sub cmdReload_Click

Sub cmdSearch_Click

Sub Form_Load

Sub Form_Resize

frmSplash.frm

(Declarations)

Sub Form_KeyPress

Sub Form_Load

Sub Frame1_Click

Sub Timer1_Timer

References:

OLE Automation

Path: C:\WINDOWS\system32\stdole2.tlb

Microsoft ActiveX Data Objects 2.5 Library

Path: C:\Program Files\Common Files\System\ADO\msado25.tlb

Objects:

Microsoft Windows Common Controls 6.0 (SP6)

Path: C:\WINDOWS\system32\Mscomctl.ocx

Microsoft ADO Data Control 6.0 (SP6) (OLEDB)

Path: C:\WINDOWS\system32\MSAdoDc.ocx

Microsoft Common Dialog Control 6.0 (SP6)

Path: C:\WINDOWS\system32\Comdlg32.ocx

Microsoft Windows Common Controls-2 6.0 (SP6)

Path: C:\WINDOWS\system32\MSCOMCT2.OCX

Microsoft DataGrid Control 6.0 (SP6) (OLEDB)

Path: C:\WINDOWS\system32\MSDatGrd.ocx

Summary:

Blank Lines	38
Lines of Code	374
Lines of Comments	23
Total Lines (Comments & Code)	397

```
'Global ADO Object Variables
Option Explicit
```

```
    .ActiveConnection = conn
    .Source = "SELECT * FROM tbl_Record"
    .CursorLocation = adUseClient
    .Open
  End With

End Sub
Dim C       As Integer
Public Counter As Integer
Private Sub cboRevenueCode_Click()
  Select Case Me.cboRevenueCode.ListIndex
    Case 0
      cboRevenueType.ListIndex = 0
    Case 1
      cboRevenueType.ListIndex = 1
    Case 2
      cboRevenueType.ListIndex = 2
    Case 3
      cboRevenueType.ListIndex = 3
    Case 4
      cboRevenueType.ListIndex = 4
    Case 5
      cboRevenueType.ListIndex = 5
```

```
        Case 6
            cboRevenueType.ListIndex = 6
        Case 7
            cboRevenueType.ListIndex = 7
        Case 8
            cboRevenueType.ListIndex = 8
    End Select
    'Award auto ID For each tax
    txtRevenueSerialNo.Text = "RC" & cboRevenueCode.Text & "/" & SerialNumberGen
    Me.Caption = "Revenue Input: " & cboRevenueType.Text
End Sub

Public Sub cmdFind_click()
    On Error Resume Next
    Find = InputBox("Enter Revenue Code/ Serial Number", "Search Record...")
    frmData.lblMsg.Caption = "Searching Records..."
    frmData.tmrMsg.Enabled = True
    With recData
        .MoveFirst
        Do While Not .EOF
            If Trim(!SerialNo) = Trim(Find) Then
                'load rec
                frmData.cboRevenueCode.Text = !RevenueCode
```

```
            frmData.txtRevenueSerialNo.Text = !SerialNo
            frmData.cboRevenueType.Text = !RevenueType
            frmData.DTPicker.Value = !CollectionDate
            frmData.txtAmount.Text = !Amount
            frmData.lblMsg.Caption = "Record Found"
            mdiMain.mnuEdit.Enabled = True
            mdiMain.mnuDelete.Enabled = True
            Exit Sub
        End If
        .MoveNext
    Loop
  End With
  frmData.lblMsg.Caption = "Record Not Found"
  Call frmData.RefreshMe
End Sub



Private Sub cmdNew_Click()
  On Error Resume Next
  Call RefreshMe
End Sub
Sub RefreshMe()
```

```
    On Error Resume Next
    frmData.cboRevenueCode.Text = ""
    frmData.txtRevenueSerialNo.Text = ""
    frmData.cboRevenueType.Text = ""
    frmData.cboRevenueType.Clear
    frmData.cboRevenueCode.Clear
    frmData.DTPicker.Value = Date
    frmData.txtAmount.Text = ""
    Call LoadComboFields
End Sub
Private Sub cmdSave_Click()
    If Me.cboRevenueCode.Text = "" Or _
      Me.txtRevenueSerialNo.Text = "" Or _
      Me.cboRevenueType.Text = "" Or _
      Me.txtAmount.Text = "" Then
       lblMsg.Caption = "A Paramter is Missing"
       tmrMsg.Enabled = True
       Exit Sub
    End If
    Call SaveRecord
    tmrSave.Enabled = True
End Sub
```

```
Private Sub Form_Load()
   Me.Left = 0
   Me.Top = 0
   Call LoadComboFields
End Sub
Private Sub cmdClose_Click()
   Unload Me
End Sub

Function SerialNumberGen()
   On Error Resume Next
   Counter = 1
   Select Case Me.cboRevenueCode.ListIndex
      Case 0
         cboRevenueType.ListIndex = 0
         With recData
            .MoveFirst
            Do While Not .EOF
               If !RevenueCode = "001" Then
                  Counter = Counter + 1
               End If
               .MoveNext
            Loop
```

```
'Global ADO Object Variables
Public conn    As ADODB.Connection
'Recordset of Datas account
Public recData As New ADODB.Recordset

Public Sub Connection()


'The Purpose of this Function is to Open a connection to link the database

   Set conn = New ADODB.Connection

   conn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=" & _
                           App.Path & "\" & "\" & "\DATA.mdb;Mode=Read|Write"
   conn.Open

   'The Purpose of this Function is to Open the recordset "Data"

   Set recData = New ADODB.Recordset

   With recData
      .CursorType = adOpenDynamic
      .LockType = adLockOptimistic
```

```
    End With
Case 1
    cboRevenueType.ListIndex = 1
    With recData
        .MoveFirst
        Do While Not .EOF
            If !RevenueCode = "002" Then
                Counter = Counter + 1
            End If
            .MoveNext
        Loop
    End With
Case 2
    cboRevenueType.ListIndex = 2
    With recData
        .MoveFirst
        Do While Not .EOF
            If !RevenueCode = "003" Then
                Counter = Counter + 1
            End If
            .MoveNext
        Loop
    End With
```

```
Case 3
   cboRevenueType.ListIndex = 3
   With recData
      .MoveFirst
      Do While Not .EOF
         If !RevenueCode = "004" Then
            Counter = Counter + 1
         End If
         .MoveNext
      Loop
   End With
Case 4
   cboRevenueType.ListIndex = 4
   With recData
      .MoveFirst
      Do While Not .EOF
         If !RevenueCode = "005" Then
            Counter = Counter + 1
         End If
         .MoveNext
      Loop
   End With
Case 5
```

```
    cboRevenueType.ListIndex = 5
    With recData
      .MoveFirst
      Do While Not .EOF
        If !RevenueCode = "006" Then
          Counter = Counter + 1
        End If
        .MoveNext
      Loop
    End With
  Case 6
    cboRevenueType.ListIndex = 6
    With recData
      .MoveFirst
      Do While Not .EOF
        If !RevenueCode = "007" Then
          Counter = Counter + 1
        End If
        .MoveNext
      Loop
    End With
  Case 7
    cboRevenueType.ListIndex = 7
```

```
        With recData
          .MoveFirst
          Do While Not .EOF
            If !RevenueCode = "008" Then
              Counter = Counter + 1
            End If
            .MoveNext
          Loop
        End With
      Case 8
        cboRevenueType.ListIndex = 8
        With recData
          .MoveFirst
          Do While Not .EOF
            If !RevenueCode = "009" Then
              Counter = Counter + 1
            End If
            .MoveNext
          Loop
        End With
    End Select
    SerialNumberGen = "S0" & Counter
End Function
```

```
Sub LoadComboFields()
   For i = 1 To 9
      frmData.cboRevenueCode.AddItem "00" & i, i - 1
   Next i
   frmData.cboRevenueType.AddItem "001 - Taxes", 0
   frmData.cboRevenueType.AddItem "002 - Rates", 1
   frmData.cboRevenueType.AddItem "003 - Local Liciense", 2
   frmData.cboRevenueType.AddItem "004 - Marktet Charges", 3
   frmData.cboRevenueType.AddItem "005 - Rent", 4
   frmData.cboRevenueType.AddItem "006 - Interest", 5
   frmData.cboRevenueType.AddItem "007 - Reinbursement", 6
   frmData.cboRevenueType.AddItem "008 - Miscellaneous", 7
   frmData.cboRevenueType.AddItem "009 - Statutory Allocation", 8
End Sub
Function SaveRecord() As Boolean
   On Error Resume Next
   With recData
      .AddNew
      !RevenueCode = Me.cboRevenueCode.Text
      !SerialNo = Me.txtRevenueSerialNo.Text
      !RevenueType = Me.cboRevenueType.Text
      !CollectionDate = Me.DTPicker.Value
      !Amount = Me.txtAmount.Text
```

```
        .Save
        SaveRecord = True
        lblMsg.Caption = "Saving Record..."
    End With
End Function
Private Sub tmrMsg_Timer()
    On Error Resume Next
    prgSave.Visible = False
    C = C + 1
    If C > prgSave.Max Then
        prgSave.Value = 0
        tmrMsg.Enabled = False
        C = 0
        prgSave.Visible = False
        lblMsg.Caption = ""
        Exit Sub
    End If
    prgSave.Value = C
End Sub

Private Sub tmrSave_Timer()
    On Error Resume Next
    prgSave.Visible = True
```

```
    C = C + 1
    If C > prgSave.Max Then
        prgSave.Value = 0
        tmrSave.Enabled = False
        C = 0
        prgSave.Visible = False
        lblMsg.Caption = ""
        Exit Sub
    End If
    prgSave.Value = C
End Sub


Private Sub txtAmount_LostFocus()
    On Error Resume Next
    Me.txtAmount.Text = Format(Me.txtAmount.Text, "#,##.00")
End Sub

Private Sub MDIForm_Load()
    On Error Resume Next
    Call Main
    Me.Caption = App.Title
```

```
    frmLogin.Show
End Sub
Private Sub MDIForm_Unload(Cancel As Integer)
    End
End Sub
Private Sub mExit_Click()
    End
End Sub
Private Sub mNewAccount_Click()
    frmData.Show
End Sub

Private Sub mnuDelete_Click()
    On Error Resume Next
    Select Case MsgBox("Are you sure you want to Delete Record No: " & "(" &
frmData.txtRevenueSerialNo.Text & ")?", vbYesNo Or vbExclamation Or
vbDefaultButton2, "Attention...")

        Case vbYes
            recData.Delete adAffectCurrent
            Call frmData.RefreshMe
            frmData.lblMsg.Caption = "Deleting Record..."
            frmData.tmrMsg.Enabled = True
```

```
    Case vbNo
        Exit Sub

  End Select
End Sub

Private Sub mnuEdit_Click()
  Find = frmData.txtRevenueSerialNo.Text
  Select Case MsgBox("Are you sure you want to Edit Record No: " & "(" &
frmData.txtRevenueSerialNo.Text & ")?", vbYesNo Or vbExclamation Or
vbDefaultButton2, "Attention...")

    Case vbYes
      With recData
        .MoveFirst
        Do While Not .EOF
          If Trim(!SerialNo) = Trim(Find) Then
        'load rec
        .Update
        !RevenueCode = frmData.cboRevenueCode.Text
        !SerialNo = frmData.txtRevenueSerialNo.Text
        !RevenueType = frmData.cboRevenueType.Text
        !CollectionDate = frmData.DTPicker.Value
```

```
            !Amount = frmData.txtAmount.Text
            .Save
            mdiMain.mnuEdit.Enabled = False
            mdiMain.mnuDelete.Enabled = False
            frmData.lblMsg.Caption = "Pls wait, Editing Record..."
            frmData.tmrMsg.Enabled = True
                Exit Sub
            End If
            .MoveNext
          Loop
        End With

      Case vbNo
        Exit Sub

  End Select
End Sub

Public Sub mnuFind_Click()
  On Error Resume Next
  Find = InputBox("Enter Revenue Code/ Serial Number", "Search Record...")
  frmData.lblMsg.Caption = "Searching Records..."
  frmData.tmrMsg.Enabled = True
```

```
  With recData
    .MoveFirst
    Do While Not .EOF
      If Trim(!SerialNo) = Trim(Find) Then
        'load rec
        frmData.cboRevenueCode.Text = !RevenueCode
        frmData.txtRevenueSerialNo.Text = !SerialNo
        frmData.cboRevenueType.Text = !RevenueType
        frmData.DTPicker.Value = !CollectionDate
        frmData.txtAmount.Text = !Amount
        frmData.lblMsg.Caption = "Record Found"
        Exit Sub
      End If
      .MoveNext
    Loop
  End With
  frmData.lblMsg.Caption = "Record Not Found"
  Call frmData.RefreshMe
End Sub

Private Sub mnuReport_Click()
  frmView.Show
End Sub
```