COMPUTERIZATION OF RECONCILIATION OF FOREIGN BANK STATEMENT AND BANKOS

(A Case Study of Foreign Operations Department, Central Bank of Nigeria).

By

BIBILARI, ODUNAYO PETER
PGD/MCS/2000/994

A PROJECT SUBMITTED TO THE
DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE,
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE

IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF
POST GRADUATE DIPLOMA IN COMPUTER SCIENCE

NOVEMBER, 2003

CERTIFICATION

This is to certify that this project " Computerization of Reconciliation of Foreign Account Statements and BANKOS (A case study of Foreign Operations Department, Central Bank of Nigeria)" has been read and met the requirements governing the award of Post Graduate Diploma in Computer Science of the Federal University of Technology, Minna.

MR. L.N. EZEAKO **Date**
(Head of Department and supervisor)

EXTERNAL EXAMINER **Date**

ACKNOWLEDGEMENT

The work done on this project is a product of un-relentless efforts of all the lecturers of the Department of Mathematics/Computer Science, Federal University of Technology, Minna. However, I would like to express my profound appreciation to Mr. L.N. Ezeako for supervising and making valuable comments on the project. I also wish to thank Mr. Hakimi Danladi and the remaining lecturers whose names are too numerous to mention, for their various contributions to this project.

This study would not have been possible without substantial input from staff of Foreign Operations Department, Central Bank of Nigeria especially Messrs, Patric Ogbechie and T.T.Aruleba who helped in providing the needed data for the running of the program. Thanks also go to my wife for showing understanding through out the prolonged duration of the course.

TABLE OF CONTENTS

Content		Page
Title Page		i
Certification page		ii
Acknowledgement		iii
Table of Contents		iv-vi
Abstract		vii

CHAPTER ONE

Brief Overview of a Computer System

1.1	What is a computer system	1
1.2	Functional components of a computer system	1
1.3	Classification of computer	3
1.3.1	Classification by Logic	3
1.3.2	Classification by purpose	3
1.3.3	Classification by size	4
1.4	Types of Information system	5
1.5	Application Areas	5
1.6	Limitations of computers	6
1.7	Objectives of the study	6
1.8	Scope of the study	7
1.9	Justification of the study	7

CHAPTER TWO

Banking in Nigeria

2.0	Commercial banks	8
2.1	Merchant banks	8
2.2	Development banks	9
2.2.1	Nigeria Industrial Development Bank (NIDB)	9
2.2.2	Federal Mortgage Bank of Nigeria (FMBN)	9
2.3	Central Bank of Nigeria (CBN)	10
2.4.1	Evolution of Central Bank of Nigeria	10
2.4.2	Organisational structure of CBN	11
2.4.3	Top Management Committee of CBN	16

2.5 Objectives of CBN ---------- 19
2.6 Foreign Operations Department ---------- 20

CHAPTER THREE

System Analysis and Design

3.1.1 System Investigation ---------- 21
3.1.2 System Analysis ---------- 21
3.2 Approach to Account Reconciliation in Foreign Operations Department (CBN) ---------- 22
3.3 Analysis of the existing system ---------- 22
3.3.1 Sources of Information for reconciliation ---------- 22
3.3.2 Procedure for reconciliation ---------- 23
3.3.3 Format of reconciliation statement ---------- 24
3.3.4 Fields in BANKOS and bank statement ---------- 24
3.5 Data Gathering ---------- 25
3.6 Problems associated with the existing system ------- 25
3.7 Analysis of the proposed system ---------- 25
3.8 Cost of the proposed system ---------- 26
3.9 Benefits of the proposed system ---------- 26
3.10 Flowchart ---------- 26a

CHAPTER FOUR

Computation Results and System Implementation

4.1 Hardware requirement ---------- 27
4.2 Software requirement ---------- 27
4.3 Atmospheric requirement ---------- 27
4.4 Human and Material Requirements ---------- 27
4.5 Program output ---------- 27
4.6 Output Analysis ---------- 28
4.7 System Implementation ---------- 27

CHAPTER FIVE

System Security and Documentation

5.1 System Security ---------- 30
5.2 Documentation ---------- 31
5.3 Importance of documentation ---------- 31
5.4 Conclusion ---------- 31
5.5 Recommendations ---------- 32
References ---------- 33

APPENDICES

Appendix 1 – Program Codes

ABSTRACT

This project is an attempt to develop an alternative means of reconciling accounts different from the use of traditional excel package. The program written in Visual Basic 6.0 is user friendly and has a high degree of accuracy.

In order to make it adaptable for future changes and maintenance the program is properly documented.

CHAPTER ONE

BRIEF OVERVIEW OF A COMPUTER SYSTEM

This chapter discusses the functional units of a computer system, classification of a computer system, types of information system, limitation of a computer system, objective and scope of the study as well as justification of the study.

1.1 WHAT IS A COMPUTER SYSTEM

A computer according to advance learner's dictionary is defined as an electronic device for storing and analyzing information fed into it for calculating or for controlling machinery automatically.

1.2 FUNCTIONAL COMPONENTS OF A COMPUTER SYSTEM

A Computer system consists of:

(a) Input Medium

(b) Central Processing Unit

(c) Output Medium

(d) Auxiliary Storage or Backing Storage

(a) **Input medium**: Is a means by which data and instructions are fed Into the computer. Examples of this are keyboard, mouse, etc.

(b) **Central Process Unit (CPU)**: This is a medium were the inputs are processed and stored. The CPU is the heart of the computer system, it consists of:

i) Control Unit, which interprets the stored instructions in sequence. It also issues commands to all elements of the computer.

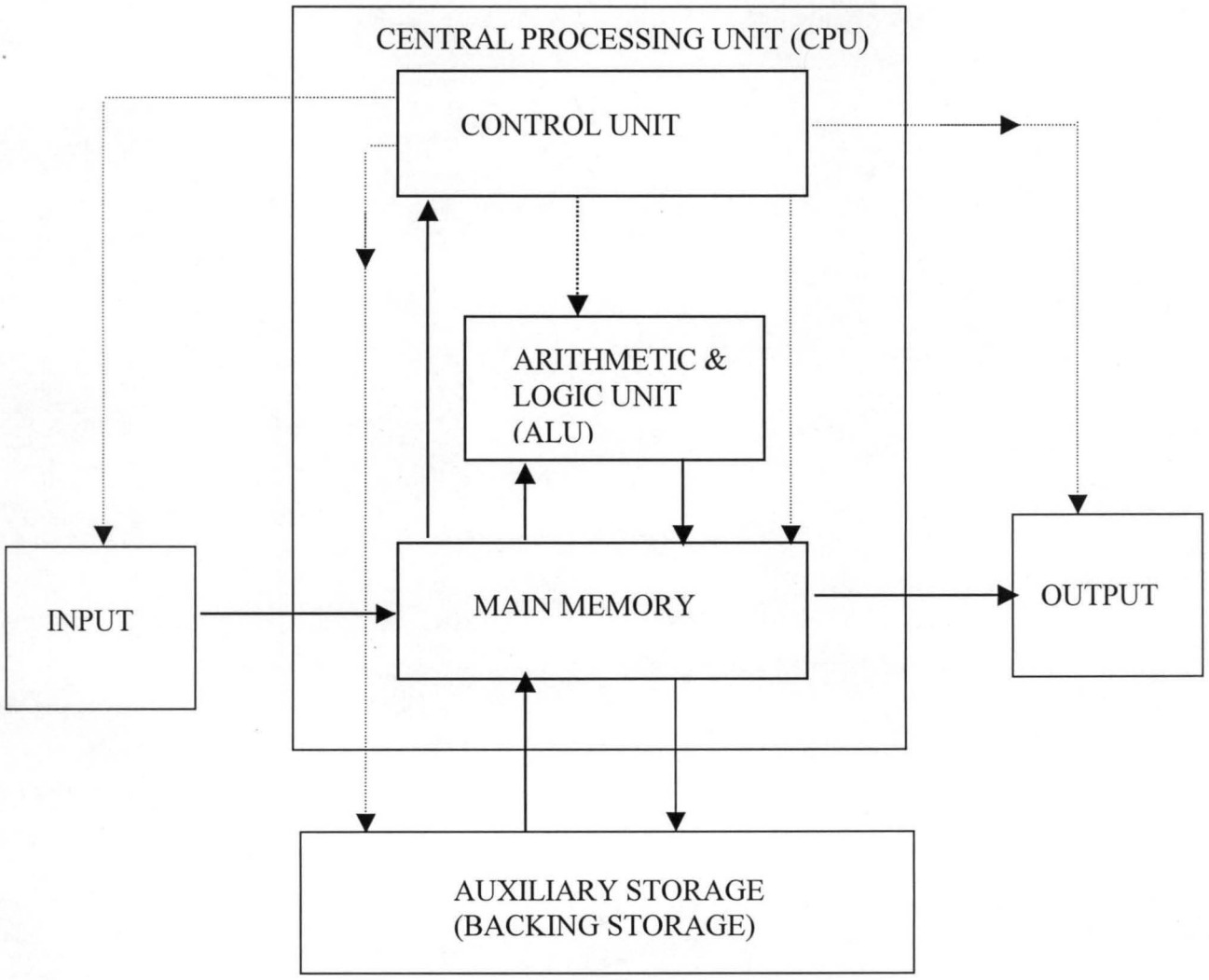
ii) Arithmetic and Logic Unit (ALU): This performs arithmetic and logic operations. The control unit and the Arithmetic and Logic Unit form the Processor.

iii) The Main Memory: It stores data, instructions and results of processing.

iv) **The output medium**: It outputs the result of processing e.g. Visual Display Unit (VDU), Printer

v) **Auxiliary Storage (Backing Storage)**: This supplements the main storage. The main difference between the main and auxiliary storage is that while the main storage is within the system, the auxiliary is outside the computer system. The input and the output devices as well as the auxiliary storage devices constitute the peripheral units.

FIG 1: THE ELEMENTS OF A COMPUTER SYSTEM



KEY:

Data/Instruction flow ⟶

Command/Signals ⋯⋯▶

1.3 CLASSIFICATION OF COMPUTERS

Computer can be classified by logic, purpose and size

1.3.1 CLASSIFICATION BY LOGIC

Computers can be classified according to the manners in which data is represented within it as follows:

(a) **Digital Computers**: These are computers in which numerical information is represented in digital form by a coded set of unified pulses.

(b) **Analog computer**: These are computers in which a number is represented in a more direct manner by a physical quantity that is proportional to it or to a defined function of it. A physical quantity used in this way is known as analog. It may be a current, voltage, pressure, temperature or a length. Digital Computers have the advantage of accuracy, ease of programming and versatility while analog computer may be cheaper.

(c) **Hybrid Computer**: In an attempt to combine the high speed of the analog machine with the flexibility of a digital system, hybrid computers have been developed. A hybrid computer consists of an analog and a digital computer connected together in a single system. They are mostly found in scientific and technical applications.

1.3.2 CLASSIFICATION BY PURPOSE

Computer can be classified on the basis of purpose. In this case we have:

(a) **Special purpose:** These are computers designed for a specific type of application and have its program pre wired, i.e. not programmable e.g. computer designed for air traffic control or weapon guidance system.

(b) **General Purpose:** are those, which are completely programmable and can be used to perform a variety of numerical calculations and business problems.

1.3.3 CLASSFICATION BY SIZE

Another way of classifying digital computer is to use the amount of computing power which they provide. This way, we will be able to relate to important parameters such as cost, size and versatility. Using these measures, we can distinguish below the following types of computers.

a. Super computer
b. Mainframe computer
c. Mini computer
d. Micro computer

a. Super Compute: is used to produce very large amount of data at high speed. They are used for occasions where high volumes of calculations need to be performed.
b. Mainframe: Is one that has a very powerful central computer linked by cable or telecommunications to hundreds or thousands of terminals and capable of accepting simultaneous inputs from all of them.
c. Minicomputers are computers whose size, speed and capabilities lie somewhere between those of a mainframe and a personal computers.
d. Personal computers: These are the norms for small to medium sized business computing and for home computing. Often they are linked together in a network to facilitate information sharing between users.

1.4 TYPES OF INFORMATION SYSTEMS

The computers are used to process data into information. The following are the types of information system that can be obtained from computer outputs.

a. Transaction Processing system: This represents the lowest level in an organization's use of information system. They are used for routine operations e.g. sales orders.

b. Decision support systems: are a form of management information system used by management to assist in making decision on issues which are semi structured or unstructured.

c. Executive information system: provides the executive with the underlying performance facts and figures, which have traditionally been under the control of middle manager.

d. Expert systems: are computer programs, which allows users to benefit from expert knowledge ,information and advice. An expert system is therefore a program for which the master/reference file holds a large amount of specialized data.

1.5 APPLICATION AREAS

Computer is widely used in many areas. This include:

(A) Commerce: In business, computer is used in many areas such as,

(ii) Payroll: To prepare monthly salaries of workers.

(iii) Stock control: It is used to provide information on stock level, slow moving items or trend in demand.

(iv) Production control: computer is used to make production responds quickly to change in demand and other circumstances

B) Scientific, Engineering and Research

This concerns the use of computer for complex calculations, the design, analysis and of experimental results.

C) **Office Automation:**

Computer is also use for basic secretarial and clerical task of the office. Basic office automata ion consist of word processors.

D) **Accounting:**

Computer is widely used in recording details of financial transactions made by an organization, e.g. profit and loss account, preparation of financial statements and reconciliation of accounts.

E) **Financial Application**:

Computer is used in financial institution in the area of automatic cheque clearing, direct debit, carrying out of standing order, etc.

1.6 LIMITATIONS OF COMPUTERS

Despite the versatility of computers, computers have amongst others the following limitations:

(i) Computer cannot move itself from one place to another.

(ii) It remains useless or inactive unless it is programmed and instructed on what to do.

(iii) What is produced from a computer is a function of what is input. Hence, the saying GIGO, i.e. garbage in garbage out.

1.7 OBJECTIVE OF THE STUDY.

Information technology is a major factor of offering business the best way of creating high performance. It is for this reason especially where the needed resources are present that managers and the managed alike should be asking these questions:-

a. What is the purpose of my work?

b. How do I add value to my work?

In view of the foregoing, the researcher as a staff charged with the responsibility of reconciling foreign accounts in Foreign Operations Department of Central Bank of Nigeria tailored this study to "developing a suitable package to store and reconcile bank statement with the BANKOS.

1.8 SCOPE OF THE STUDY.

The scope of the study is limited to Foreign Operation Department of the Central Bank of Nigeria, Abuja.

1.9 JUSTIFICATION FOR THE STUDY

The study is carried out in order to find out an alternative means of reconciling accounts different from the use of excel packages. This will make it possible for people that are not knowledgeable in the use of excel to reconcile accounts.

CHAPTER TWO

BANKING IN NIGERIA

The business of banking in Nigeria is carried out by the following institutions Commercial banks, Merchant banks, and Development banks, Specialized Institutions, Other Financial Institutions and the Central Bank of Nigeria.

2.1 **COMMERCIAL BANKS**: Famoyin (1973) defined Commercial banks as those banks that lends out their capital for short periods on the strength of liquid securities. Their functions include

(a) Provision of deposit facilities (on savings and current accounts) for customers.

(b) Granting of overdrafts and loans on short term but can be involved in long term financing

(c) Safekeeping of valuable of various kinds, e.g. jewelry, certificates, etc.

(d) Customers' investment management.

(e) Acting as intermediary between lenders and borrowers.

(f) Loan, syndication, etc.

2.2 MERCHANT BANKS

Buhari (1987) defined Merchant banks as a bank whose functions is the provision of medium and long term lending. They engage in wholesale rather than retail banking. Their functions include:

(a) Complement activities of commercial banks

(b) Corporate financing (equipment leasing), etc.

(c) Capital reconstruction/consultancy services

(d) Fund management.

(e) Loan Syndication

2.3 DEVELOPMENT BANKS

They were established to provide medium and long-term capital to the private sector of the economy. They include:

2.3.1 NIGERIA INDUSTRIAL DEVELOPMENT BANK (NIDB)

It was established in 1964 to provide medium and long-term finance for industrial enterprise. The major shareholders are Federal Government (60%) and CBN (40%).

The functions of NIDB includes:

(a) General assessment of economics viability of industrial projects from technical, financial and economic standpoint.

(b) Provision of professional assistance to client projects.

(c) Provision of financial assistant to various manufacturing sub sectors, e.g. textile, food and beverages.

2.3.2 FEDERAL MORTGAGE BANK OF NIGERIA (FMBN)

The FMBN was established by Decree 7 of 1977. It took over the assets and liabilities of the Nigerian Building Society. The main functions of FMBN are:

(a) Provision of banking and advisory services.

(b) Carrying out research to facilitate improvement in housing patterns and standards throughout the country.

However, in 1993, a new institution, Federal Mortgage Finance (FMF) was carved out of FMBN. The financing function of FMBN has since been transferred to the Federal Mortgage Finance while the FMBN now serve as the apex regulating body of the primary mortgage institutions.

2.4 CENTRAL BANK OF NIGERIA (CBN)

This section discusses the evolution, top management committees, objectives and some of the structural reorganizations that have taken place in CBN.

2.4.1 EVOLUTION

CBN is a specialized institution, owned by the state and charged with the responsibility of managing money supply in the economy.

The antecedent of CBN was the West African Currency Board, which was established by the colonial Government in 1912. A number of shortcomings of the Board led to the agitation by nationalist for a Central Bank of Nigeria (CBN). Such shortcomings include:

(a) Absence of monetary policy formulation.

(b) Investment of excess liquidity of banks in London money market.

(c) Absence of control in the banking system as evidenced by mass failure of banks between 1930 and 1952.

(d) Lack of management succession through provisions of training facilities in banking and management.

The clamor by the Nationalists for a Central Bank of Nigeria, led the colonial government to set up the Fishers commission, Mr. J.L. Fisher an adviser to the Bank of England was mandated in 1952 to examine the practicability of setting up a Central Bank in Nigeria. Fisher did not see the need for a Central Bank in Nigeria.

The Government of Nigeria later invited the World Bank in 1953 to assess the need for a Central Bank. The Bank approved the need for a State Bank in Nigeria. The World Bank's report (1953) gladdens the hearts of nationalists and led the colonial Government to set up another commission – J.B. Loynes Commission in 1956.

J.B. Loynes Commission was mandated to look into how to establish a Central Bank that would be responsive to the development needs of the country. Loynes report was submitted in 1957, the Central Bank Act. was enacted in 1958 and Central Bank started operations in 1959.

2.4.2 ORGANIZATIONAL STRUCTURE OF CBN

When CBN commenced operations on 1st July 1959, the organizational structure was a simple one comprising of two departments namely:

(a) The General Manager's Department which was charged with the responsibilities for currency and banking functions and

(b) The Secretary's Department which was given general administrative responsibilities along with personnel and research functions.

In 1960, the Research Office was excised from the Secretary's Department and organized into a third Department, i.e. Research Department. The three departments later grew by 1967 to five with the addition of Audit and Bank Examination Departments. The General Manager's Department changed its name to Banking Operations Department in 1969. Few departments were later created e.g.: Exchange Control in 1969, Secretary's Department split into Personnel and Administration Departments in 1971, Accounts and Security Departments by 1975. Consequently, the bank had in 1975, nine departments which were grouped into 'A' and 'B' departments as follows:

GROUP 'A'

a) Banking Operations

b) Research

c) Exchange Control and

d) Banking Examination

GROUP 'B'

a) Personnel

b) Administration

c) Accounts

d) Security

e) Audit

This arrangement resulted from the recommendations of an I.M.F. consultant, Mr. M.H. Rozell who submitted his report to the Bank in 1970. With the acceptance of the Mckinsey recommendation in 1977, the existing departments were reorganized as follows:

1) Domestic Operations
2) Research Department
3) Exchange Control Department
4) Banking Supervision Department
5) Foreign Operations Department
6) Finance System and Control Department
7) Agric Finance Department
8) Personnel Department
9) Administration Department
10) Governor's Department.

These ten departments were divided into 4 groups three of which were assigned to three Executive Directors, while the 4th group functioned directly under the Governor. The groups were as follows:

a) Operations Group:
   i) Domestic Operations
   ii) Exchange Control

iii) Agricultural Finance

iv) Foreign Operations.

b) Monetary and Banking Group:

i) Research Department

ii) Banking Supervision

c) Management and Staff Services Group:

i) Administration

ii) Personnel

iii) Financial Systems and Control.

d) The Governor's Office, viz Audit, Legal, Secretary's and Re-Organization Office had to report as follows:

Audit	)		
Secretary's	)	-	direct to the Governor
Legal	)		
Re-Organization	)	-	to the Executive Director M.& S.S.

In 1984 the bank was further restructured to reflect its increased and diverse activities. The structure was made up of 14 (fourteen) Departments and 3 (three) Autonomous Units as shown below:

a) Operations Group

1. Foreign Operation
2. Exchange Control
3. Currency Operations and
4. Banking Operations.

b) Monetary and Banking Policy Group

5. Banking Supervision
6. Research and
7. Agricultural Finance

c) Management and Staff Services Group

8) Administration
9) Finance and Accounts
10) Computer Services
11) Personnel
12) Branches Operations
13) Building and Engineering Services
14) Secretary's Office

The 3 (three) autonomous units are the Office of the Secretary to the Board, Internal Audit and Organization and Methods all under the Governor.

In January 1988 the Bank was further restructured. The posts of Executive Directors was scrapped while five Deputy Governors were appointed to assist the Governor in the day to day administration of the Bank.

After series of reorganization, the Deputy Governors were reduced to four and assigned portfolios as indicated below:

a) **Deputy Governor: Domestic Monetary and Banking Policy**

1. Research Department
2. Banking Supervision
3. Agric Finance Department
4. Bank Examination

b) **Deputy Governor: Domestic Operations**

1. Banking Operations Department
2. Currency Operations Department
3. Branches Operations Department

c) **Deputy Governor: General Administration**

1. Personnel Department
2. Administration Department
3. Building & Engineering Services Department

d) **Deputy Governor: International Operations**

1. Foreign Operations Department
2. Trade & Exchange
3. International Economic Relations Department
4. Debt Management Department.

c) **Deputy Governor: Management Services**

1. Finance & Accounts Department
2. Computer Services
3. Security Department

Meanwhile, the present Board of Directors consists of

1. The Governor,
2. Four deputy Governors in charge of the following portfolios:
   a. Policy
   b. Operations
   c. Financial Surveillance
   d. Corporate Services
3. Six part-time directors and the Secretary to the Board

2.4.3 TOP MANAGEMENT COMMITTEES OF CBN

As a result of the above arrangement, there were four top Management Committees in addition to the Board of Directors.

1. **The Board of Director Comprises:**
   - i) The Governor (who is also the Chairman)
   - ii) The four Deputy Governors and
   - iii) Six part-time Directors as members.

The Board of Directors meets every month or when there is an urgent need. The board of Directors is responsible for the policy and general administration of the affairs and business of the Bank.

2. **The Committee of Governors Consist of:**
   - i) The Governor and
   - ii) The four Deputy Governors.

The Committee meets monthly during which it discusses major policies and operational issues concerning the Bank national and international assets and liabilities. A relevant departmental Director may be invited to attend a meeting of this committee.

3. **The Governor's Con sultative Committee**
   - i) The Governor (also the Chairman)
   - ii) The four Deputy Governors and
   - iii) All the Departmental Directors.

This Committee meets forth-nightly to discuss matters relating to major policy and operational issues in addition to being a forum for feeding top management with views of members of staff.

The Secretary to the Board attends as well as record the proceeding of this committee meetings.

4. The Investment Committee

Has the following as members:

i) The Governor (Chairman)

ii) The four Deputy Governors

iii) Director of Research

iv) Director of International Economic Relations and

v) Director of Foreign Operations.

The purpose of this committee is to take decisions, on investments and borrowings within the limits set by the committee of Governors.

5. The Committee of Directors:

Meets monthly while all Departmental Directors have regular meetings with their Deputies, Assistant Directors and Managers.

In order to ensure effective day to day administration, the various departments are broken up into divisions (i.e. group of offices) each headed by a Deputy Director and assisted by Assistant Directors, Senior Managers, Assistant Managers etc.

The Bank later underwent major reorganizations at various times. At present the Bank has a Debt Conversion secretariat and 22 departments namely:

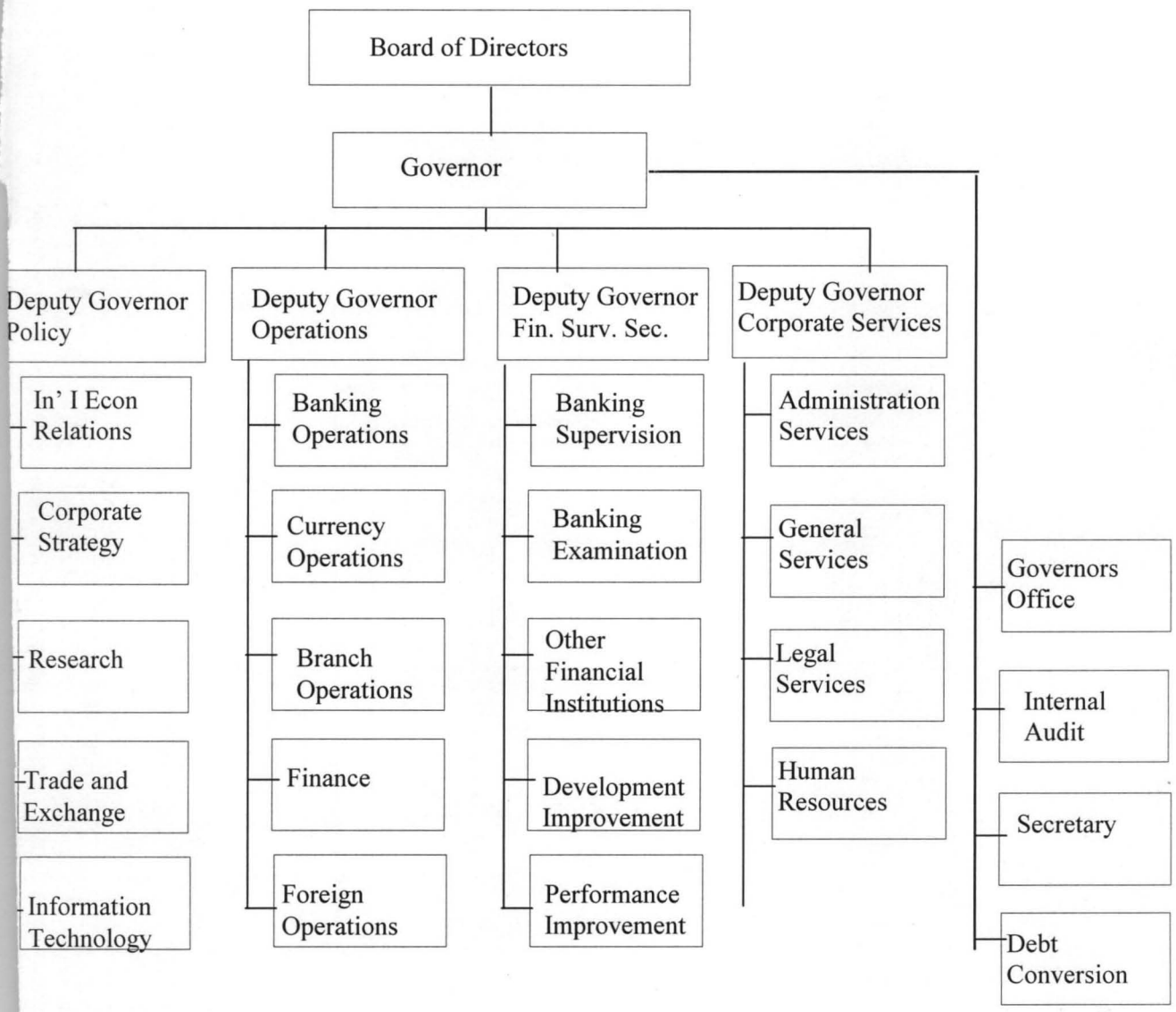
1) Administration Services

2) Bank Examination

3) Banking Operations

4) Banking Supervision
5) Branch Operations
6) Corporate Strategy
7) Currency Operations
8) Development Finance
9) Finance
10) Foreign Operations
11) General Services
12) Governor's Office
13) Human Resources
14) Information Technology
15) Internal Audit
16) International Economic Relations
17) Legal Services
18) Other Financial Institution
19) Performance Improvement
20) Research
21) Secretary
22) Trade & Exchange.

FIG 2: CENTRAL BANK OF NIGERIA ORGANIZATION STRUCTURE



2.5 OBJECTIVES OF CENTRAL BANK OF NIGERIA

1. Issuance of legal tender currency in Nigeria.
2. Maintenance of the external value of the legal tender currency.
3. Promote monetary stability and a sound financial system.
4. Act as a banker and financial adviser to the Federal Government and banker to banks.

The power and activities of CBN is derived from Central Bank of Nigeria decree 24 of 1991 and the subsequent amendments.

2.6 FOREIGN OPERATIONS DEPARTMENT

This is the department charged with the responsibility of keeping all foreign accounts of the Bank. It consists of 8 offices. These are:-

1 Investment office: Which is responsible for investing funds of the Bank.

2 Documentary credit office: it is responsible for opening and processing of letter of credit for the customers of the Bank.

3 International Remittance Office 1: responsible for the remittance of funds of private bodies e.g. Commercial Bank.

4 International remittance office 11: This is responsible for the remittance of funds for government agencies.

5 International Remittance office 111: Responsible for debt payments.

6 Funds office: Charged with the responsibility of moving funds from one overseas account to the other.

7 Data control office: is the custodian of data bank of the department.

8 Domiciliary Accounts office: This office is responsible for the maintenance of domiciliary accounts for customers.

9 Bills for collection office: Responsible for the payment of personnel travelling allowance (PTA) and estacode for government officials.

10 Correspondent Relations office:- This is the office charged with the responsibility of reconciling the accounts of Foreign Operations Department.

CHAPTER THREE.

SYSTEM ANALYSIS AND DESIGN.

System analysis and design cycle involves the following steps.

a. System investigation.

b. System Analysis.

c. System design.

3.1.1 **SYSTEM INVESTIGATION**: This is the process of determining the nature and scope of the problem. Interview and Questionnaires are means of getting information about the problems.

A major step in system investigation is the feasibility study. Feasibility study is carried out to determine whether a solution to the problem is feasible or not. It explores all alternative design options and an analysis of the costs and benefits of each alternative.

3.1.2 SYSTEM ANALYSIS. This involves a thorough and objective appraisal of an existing system in order to uncover its inherent problems, limitations and strengths. The major steps to consider when analyzing a system are.

a. General evaluation of the existing system.

b. Collection of appropriate data including the opinions of the users of the proposed system

c. Analysis of data and the existing system.

d. Benefits of the proposed system.

3.2 APPROACH TO ACCOUNT RECONCILIATION IN FOREIGN OPERATIONS DEPARTMENT.

Reconciliation is defined as the process of making two or more ideas, situations etc agree with each other when actually they seem to be in opposition. From this definition,

reconciliation of Bank statements and Bank's ledger means that the two must be brought together to agree in spite of their differences.

The bank statement is the record of transactions kept by a bank to record its dealings with a particular customer for a particular period e.g. a month, while the Central Bank of Nigeria's ledger called BANKOS is the corresponding records kept by Central Bank to record its transactions with that bank for the same period. The two i.e. bank statement and BANKOS may not necessarily agree as a result of differences in recordings and time of recording. For example, the bank at the end of the month may credit its customer's account with the interest accrued for the month or debit the account with charges. These items (interest and charges) would not be present in the BANKOS. Also, some items may be in the BANKOS and not in the statement e.g. Cheque issued but not yet presented to the bank. Items enumerated above are called outstanding items. In order to check for the accuracy and authencity of these transactions, the bank statement needs to be reconciled with the BANKOS. If the two agreed then the account is said to balance. However, if not, investigation may have to be carried out to find the cause of the disagreement.

3.3 ANALYSIS OF THE EXISTING SYSTEM.

The existing system consists of Correspondent Relations office saddled with the responsibility of reconciling accounts. The data for the reconciliation are sourced from bank statements and BANKOS.

3.3.1 SOURCES OF INFORMATION FOR RECONCILIATION

The sources are:

(1) Monthly statement of accounts/advises from correspondent banks.

(2) BANKOS 325 report generated on monthly basis by Information Technology Department (ITD). The BANKOS i.e. the acronym for

Bank Operating system are the various ledgers used in recording transactions in the Bank.

(3) BANKOS 139 report generated daily or periodically. It indicates daily transactions on various accounts.

3.3.2 **PROCEDURE FOR RECONCILIATION.**

i. Confirm the previous month's reconciliation statement to ensure that all information therein is correct.

ii. Ensure that the bank statements are up to data and relevant to the period in question.

iii. Recast the Foreign Accounts columns of the BANKOS to ensure that the correct balances were brought forward from the previous month and that the correct balances are carried forward.

iv. Tick credit items in the BANKOS against the corresponding debits in the bank statements and vice versa.

v. Where you cannot find matching description of transactions from the BANKOS 325 to the statements such a transaction, should be reflected as an outstanding item under the appropriate heading of the reconciliation statement. The headings are:

a. Debit (DR) in statement but Credit not in BANKOS
b. Debit (DR) in BANKOS (Ledger) but Credit not in statement
c. Credit (CR) in statement but Debit not in BANKOS
d. Credit (CR) in BANKOS (Ledger) but Debit not in statement

vi. State the full details/descriptions of the transaction from BANKOS/statements.

3.3.3 FORMAT OF RECONCILIATION STATEMENT.

The format is as shown below.

Balance as per bank statement as at -----			x x x
ADD.			
i.	Debit in statement but Credit not in BANKOS.	x x	
ii.	Debit in BANKOS but Credit not in statement	x x	x x x
			XXX
LESS			
i.	Credits in statement but debit not in BANKOS	x x	
ii.	Credits in BANKOS but Debit not in statement	x x	(x x x)
	Balance as per reconciliation statement		x x x
	Balance as per BANKOS		(x x x)
	Reconciliation Difference if any		X

3.3.4. FIELDS IN BANKOS AND BANK STATEMENT

It is necessary to state the information contained in the BANKOS and the bank statement.

BANK STATEMENT.

The information is:

	Information	Field Type
a.	Ledger date	Alphanumeric
b.	Value data	Alphanumeric
c.	F.T. Code	Character
d.	Reference	Alphanumeric
e.	Debit	Numeric
f.	Credit/balance	Numeric
g.	Description	Character

In the same vein, the information contained in the BANKOS and their types are:

	Information	Field Type
a.	Value data	Alphanumeric
b.	Operation data	Alphanumeric
c.	Description	Characters
d.	Voucher No	Numeric
e.	Exchange rate	Numeric
f	Foreign currency amount	Numeric
g.	Local currency amount	Numeric

3.5 DATA GATHERING

The data gathering employed in this study is record inspection and direct interview with the relevant desk officers. Critical examination of the existing bank statements and BANKOS were undertaken while the limitations of the existing system as well as expectations from the proposed system were taken into consideration.

3.6 PROBLEMS ASSOCIATEDWITH THE EXISTING SYSTEM.

1. After critical examination of the existing system, it is very obvious that the present system of reconciliation is inadequate and subject to the limitation of inabilities of people who are not experienced in excel package to reconcile accounts.

3.7 ANALYSIS OF THE PROPOSED SYSTEM

Designing an application package for a computer requires a serious care in establishing the specifications for both data to be processed and the program to be used

by the computer. If an alternative has been selected during the feasibility study, then one has to work from requirement specifications to produce a system specification.

The importance of the preliminary investigation embarked upon is to determine the potentials or the desirability of the proposed system in offering adequate solutions to the identifiable problems of the old system

The new system has adequate facilities for accurate recording of account statements like debit in statement, debit in general ledger, credit in statement, credit in general ledger and all other terms associated with reconciliation statement.The new system equally has high level of data storage capacity and data bank and possesses high capability to cope with limited time. This allows for prompt and accurate availability of information for management analysis.

3.8 COST OF THE PROPOSED SYSTEM

The proposed system would not gulp additional funds as the required facilities are on ground.

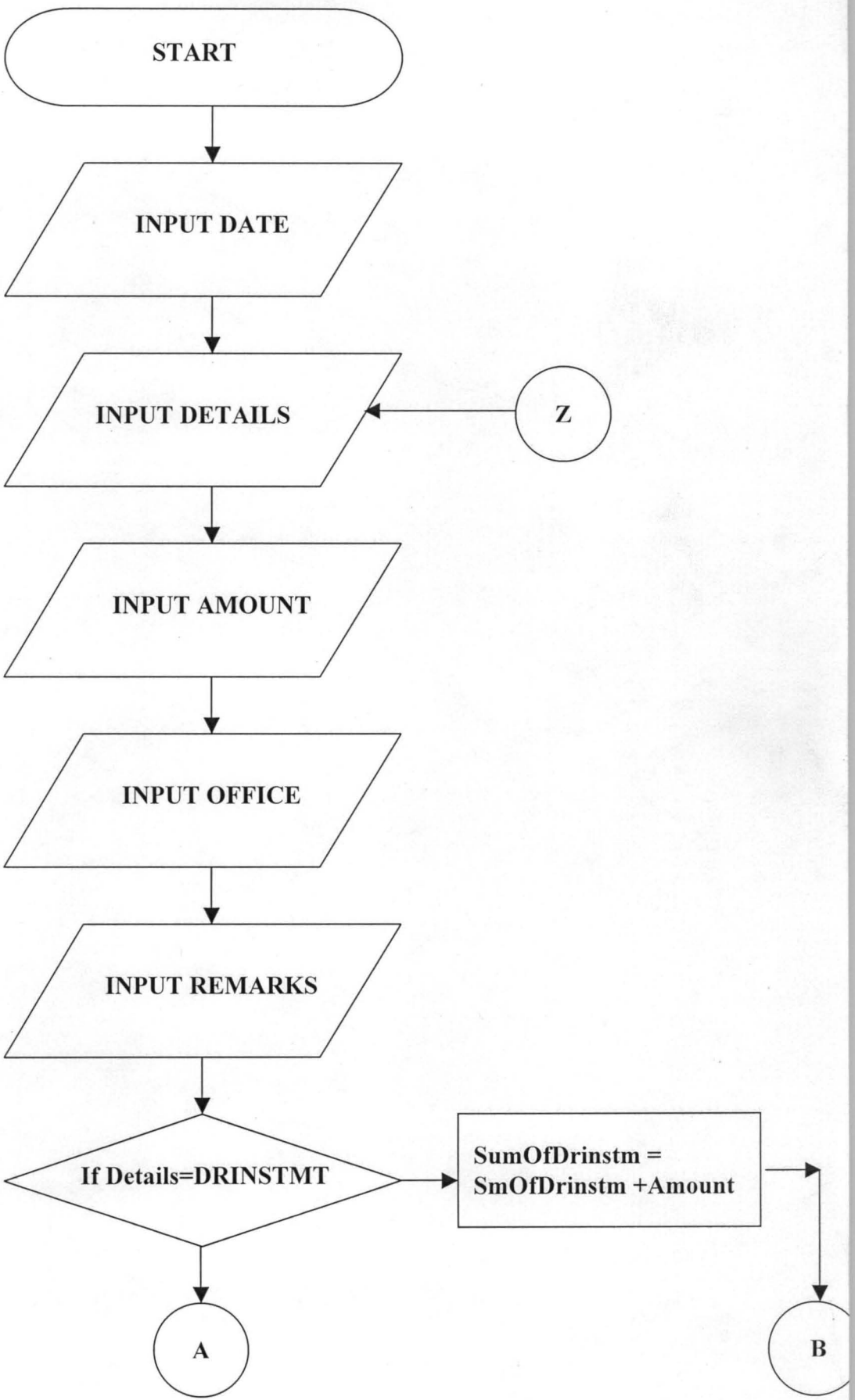
3.9 BENEFITS OF THE PROPOSED SYSTEM.

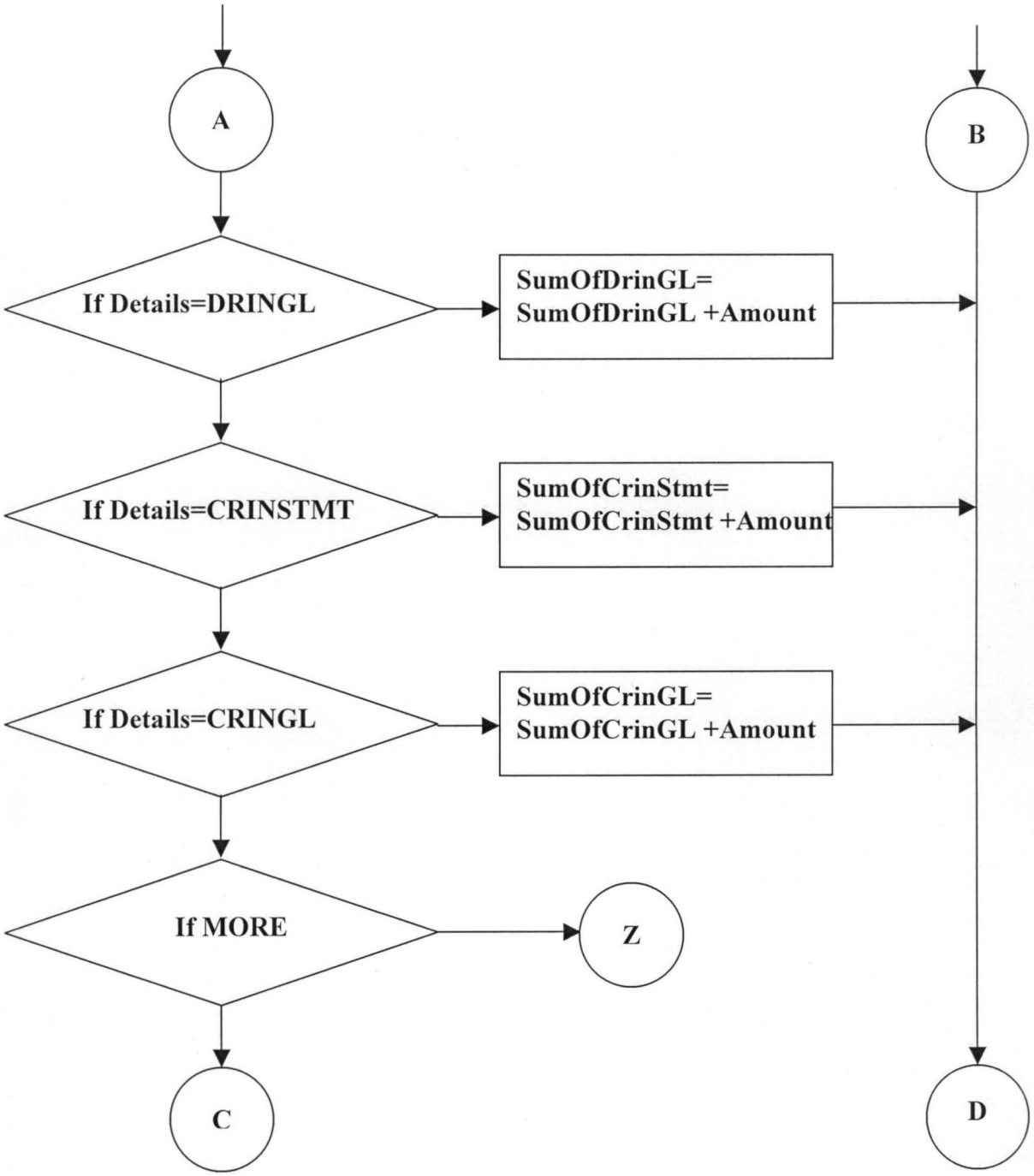
The benefits that are derivable from the new system include:-

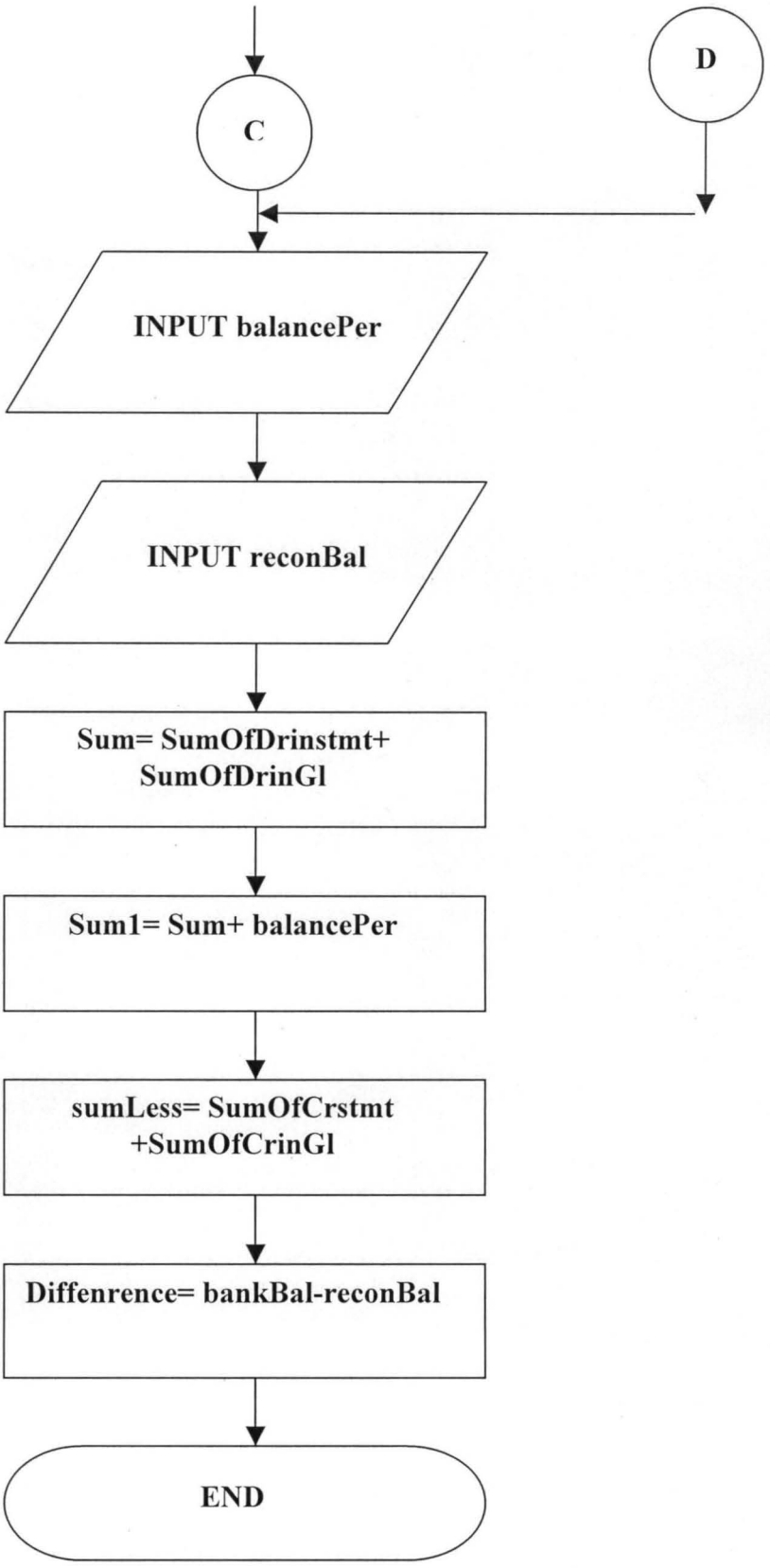
1. Easy preparation of reports.
2. Enhancement of access to and retrieval of specific information to meet specific needs.
3. Provision of backups for archiving
4. Easy reconciliation
5. Prevention of data loss

3.10 FLOWCHART

The flowchart of the new system is shown below


START
INPUT DATE
INPUT DETAILS
Z
INPUT AMOUNT
INPUT OFFICE
INPUT REMARKS
If Details=DRINSTMT
SumOfDrinstm =
SmOfDrinstm +Amount
A
B


A
B
If Details=DRINGL
SumOfDrinGL=
SumOfDrinGL +Amount
If Details=CRINSTMT
SumOfCrinStmt=
SumOfCrinStmt +Amount
If Details=CRINGL
SumOfCrinGL=
SumOfCrinGL +Amount
If MORE
Z
C
D


D
C
INPUT balancePer
INPUT reconBal
Sum= SumOfDrinstmt+
SumOfDrinGl
Sum1= Sum+ balancePer
sumLess= SumOfCrstmt
+SumOfCrinGl
Diffenrence= bankBal-reconBal
END

CHAPTER FOUR

COMPUTATION RESULT AND SYSTEM IMPLEMENTATION

This chapter discuses the human and environmental conditions necessary to successfully implement the program. In addition the outputs of the new system were carefully analyzed as stated below:

4.1 HARDWARE REQUIREMENT

For the proposed system to work effectively the following computer configurations would be required:

Machine	-	IBM or compatible
Micro processor	-	Pentium 111 733 mhz and above
RAM	-	128Mb
Hard Disk	-	20Gb
Monitor	-	5 V.G.A.
Keyboard	-	102 enhanced
Printer	-	LaserJet 4000 series.

Power source- Uninterruptible power supply (UPS).

4.2. SOFTWARE REQUIREMENTS

The software configurations for the proposed system is as follows:

1. Operating system software (Windows 98/2000)
2. Designed software,
3. Other application softwares such as Ms excel – Visual FoxPro 6.0 etc.

4.3 ATMOSPHERIC REQUIREMENT

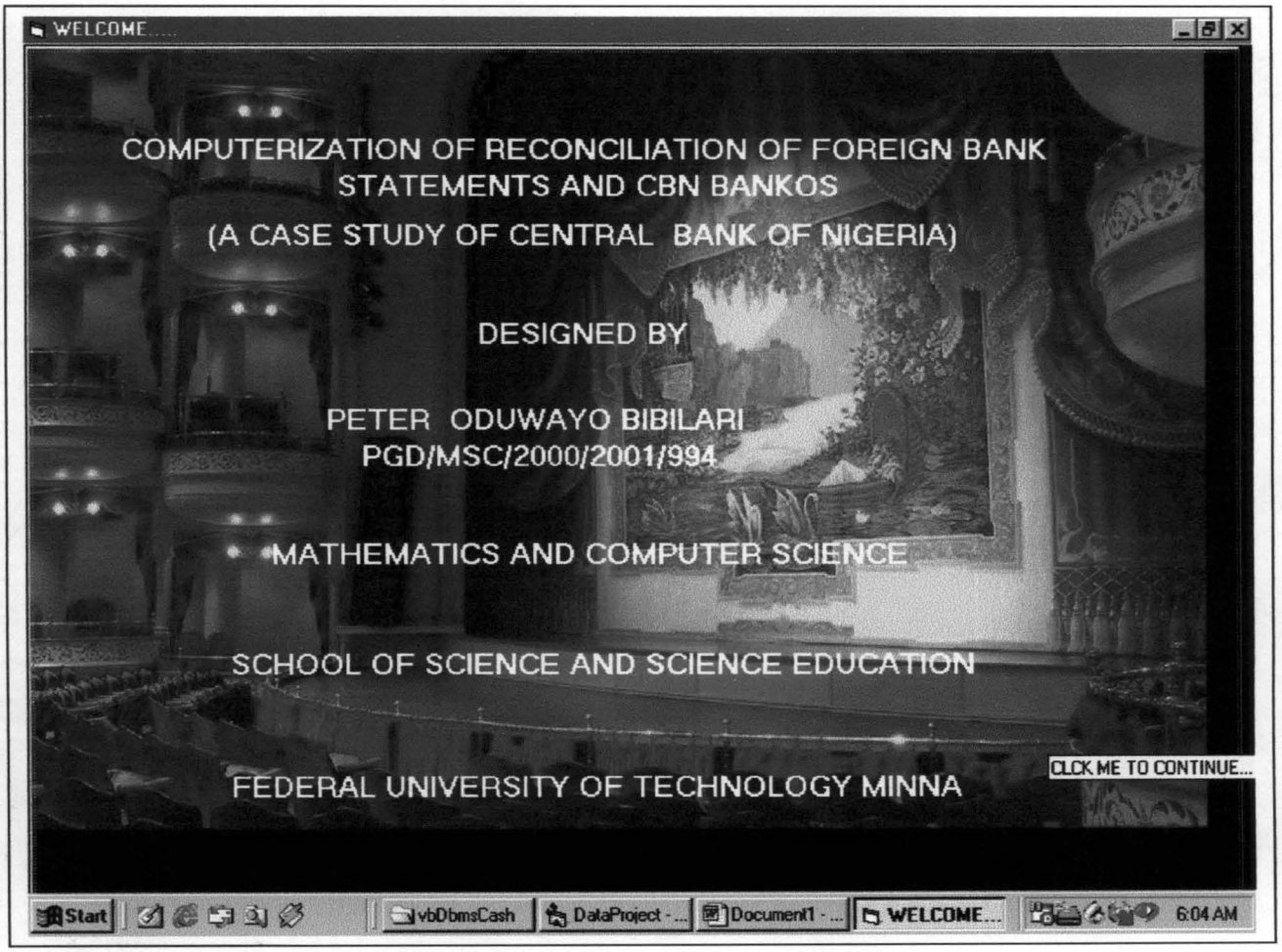
In order to function properly the room where the computers would be installed should be air-conditioned. In addition, the floor should be either tiled or rugged.

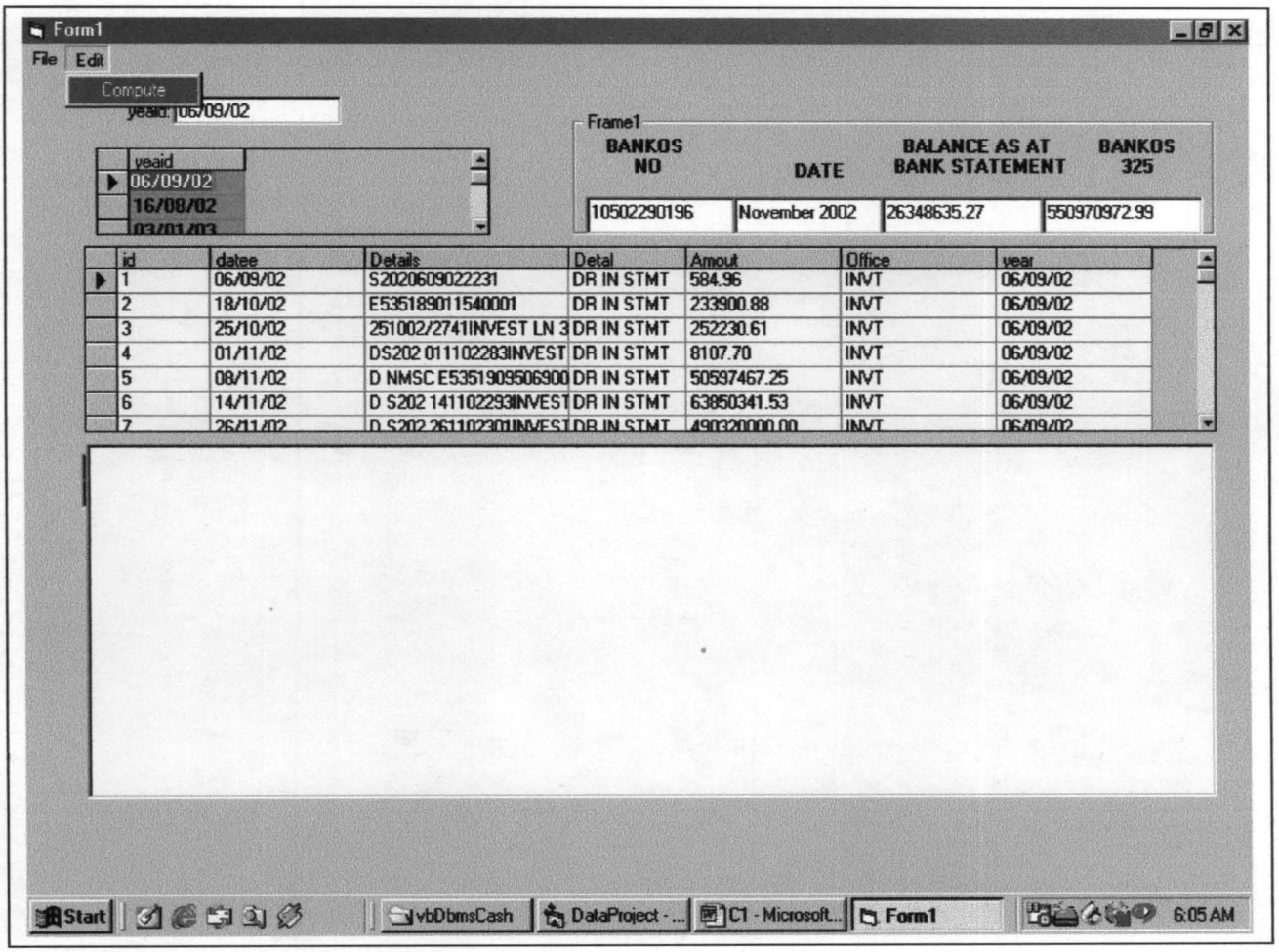
4.4 HUMAN AND MATERIAL REQUIREMENT

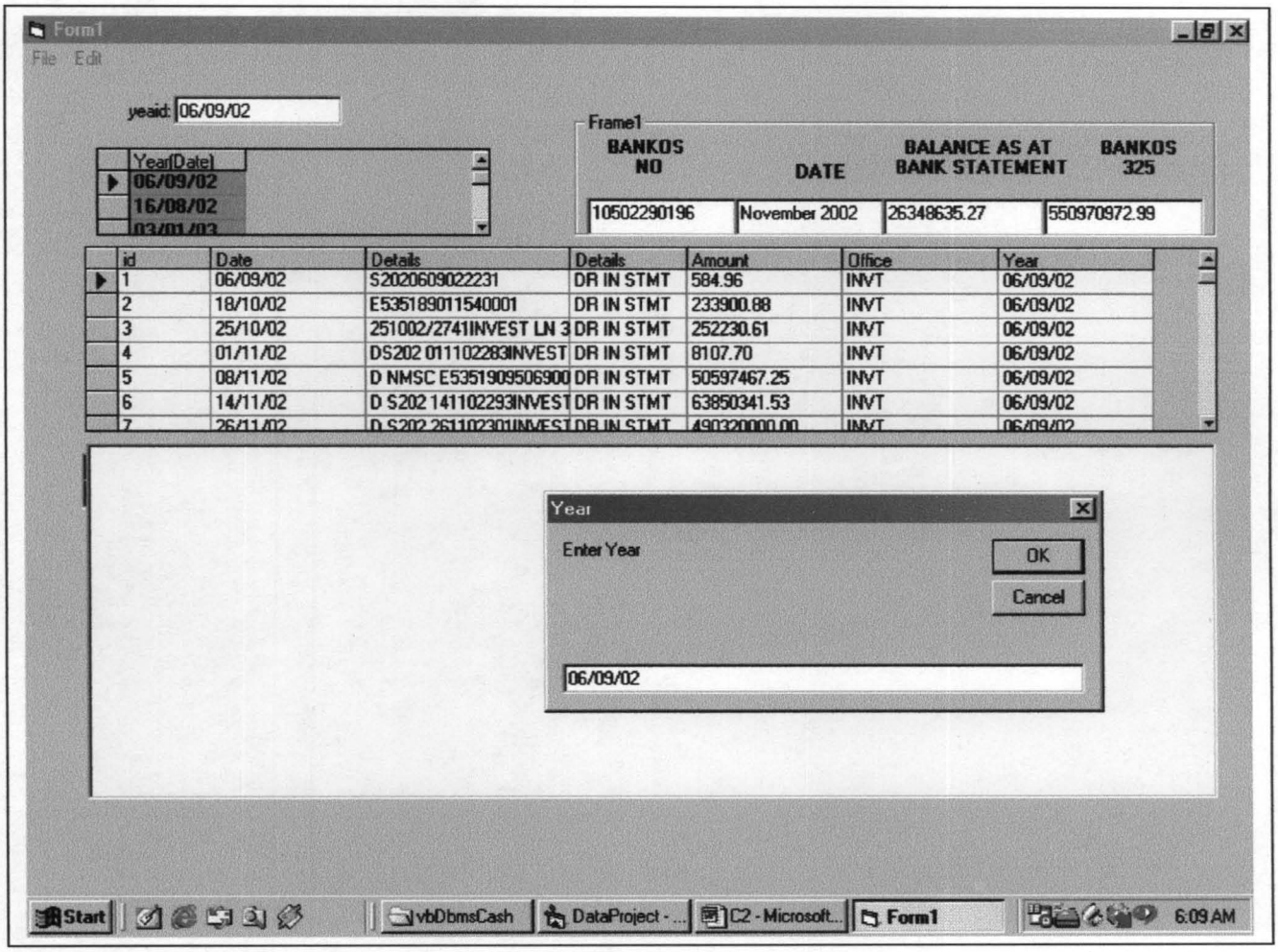
In view of numerous accounts to be reconciled eight staff are recommended for the work .Each of them should be provided with a computer set.

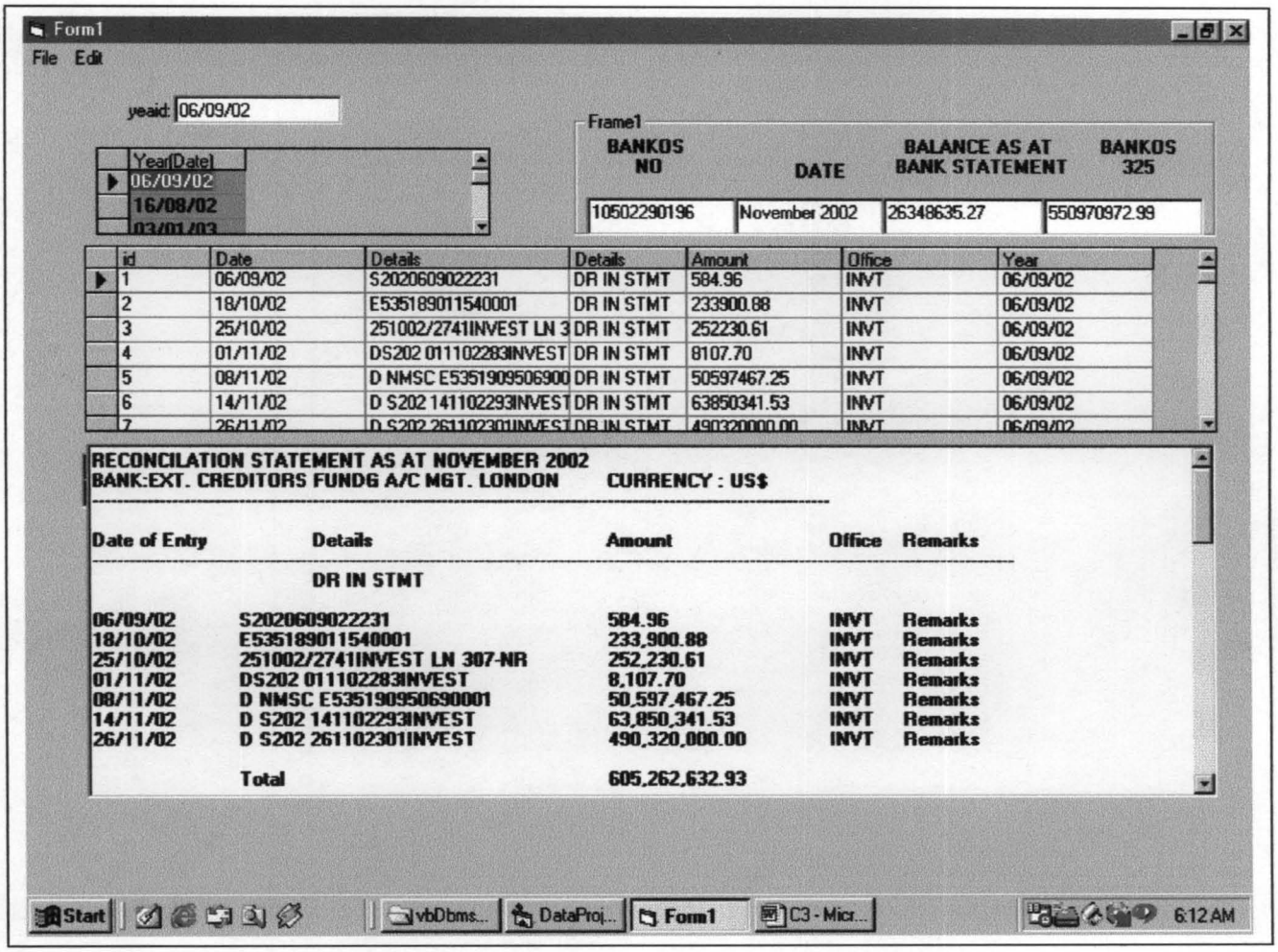
4.5 PROGRAM OUTPUTS

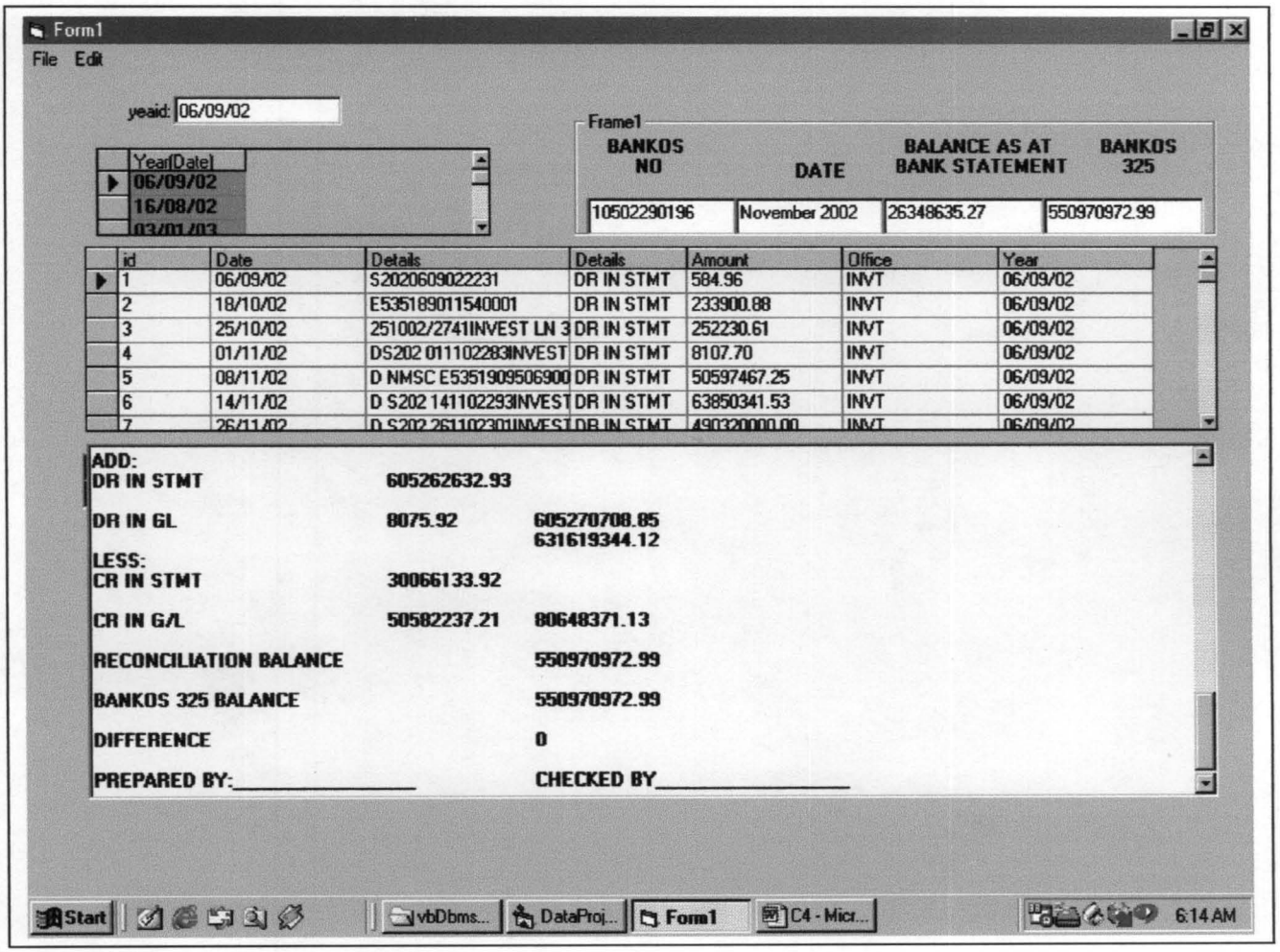
Two outputs produced are attached.

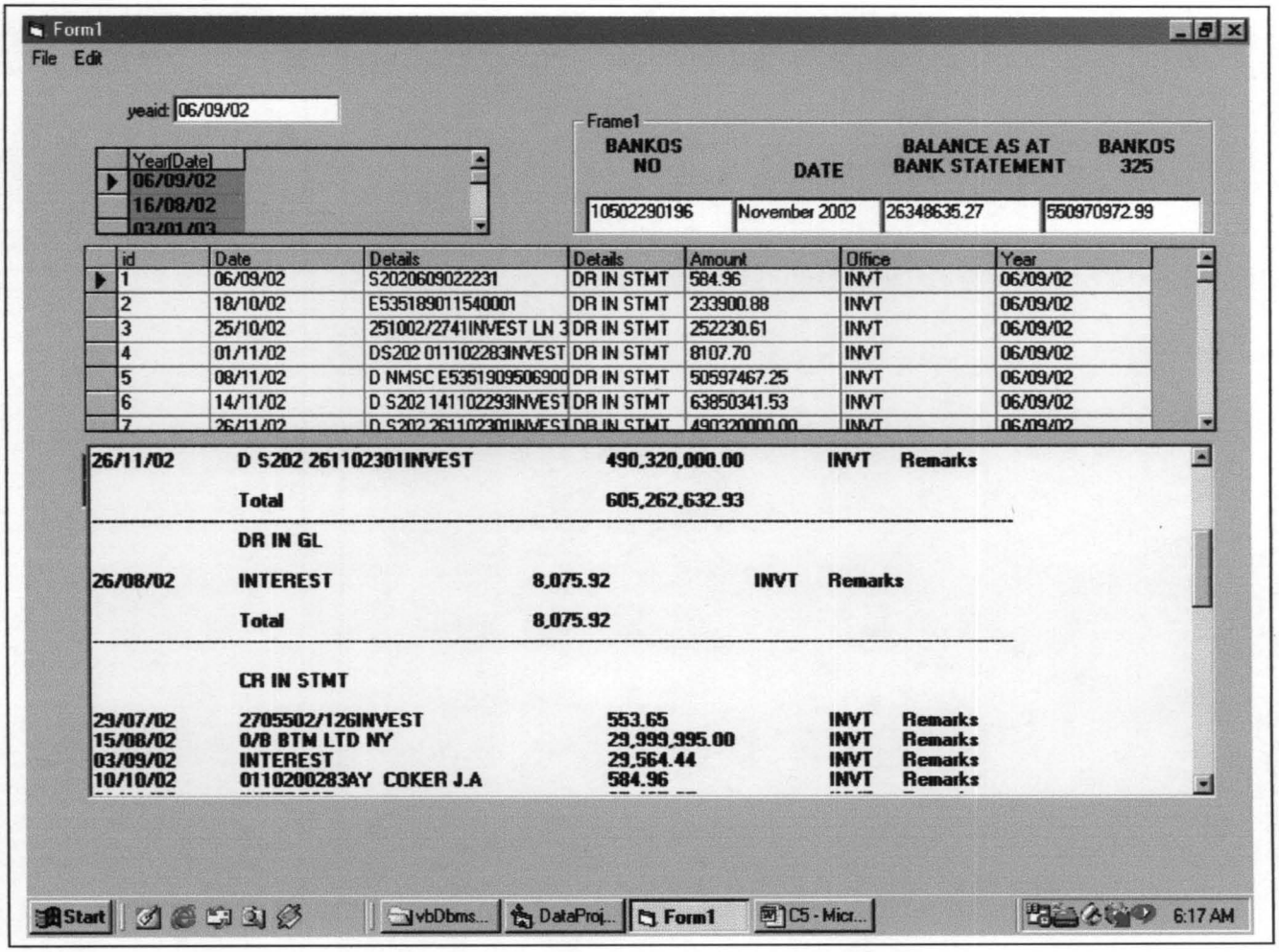

WELCOME.....
COMPUTERIZATION OF RECONCILIATION OF FOREIGN BANK STATEMENTS AND CBN BANKOS
(A CASE STUDY OF CENTRAL BANK OF NIGERIA)
DESIGNED BY
PETER ODUWAYO BIBILARI
PGD/MSC/2000/2001/994
MATHEMATICS AND COMPUTER SCIENCE
SCHOOL OF SCIENCE AND SCIENCE EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
CLICK ME TO CONTINUE...
Start
vbDbmsCash
DataProject - ...
Document1 - ...
WELCOME...
6:04 AM

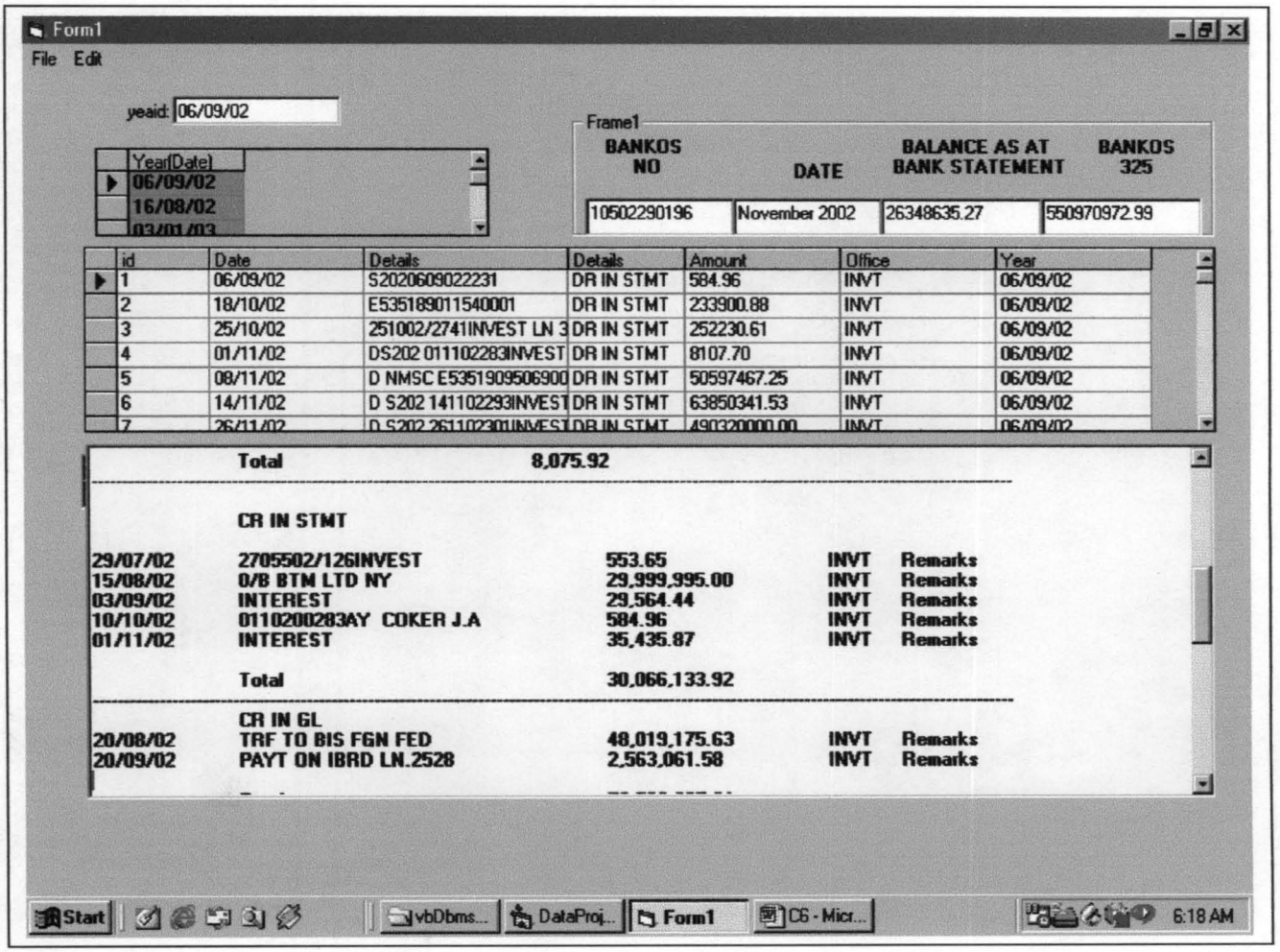

Form1
File
Edit
Compute
yeaid: 06/09/02
yeaid
06/09/02
16/08/02
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id
datee
Details
Detal
Amout
Office
year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E5351909506900 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
Start
vbDbmsCash
DataProject - ...
C1 - Microsoft...
Form1
6:05 AM

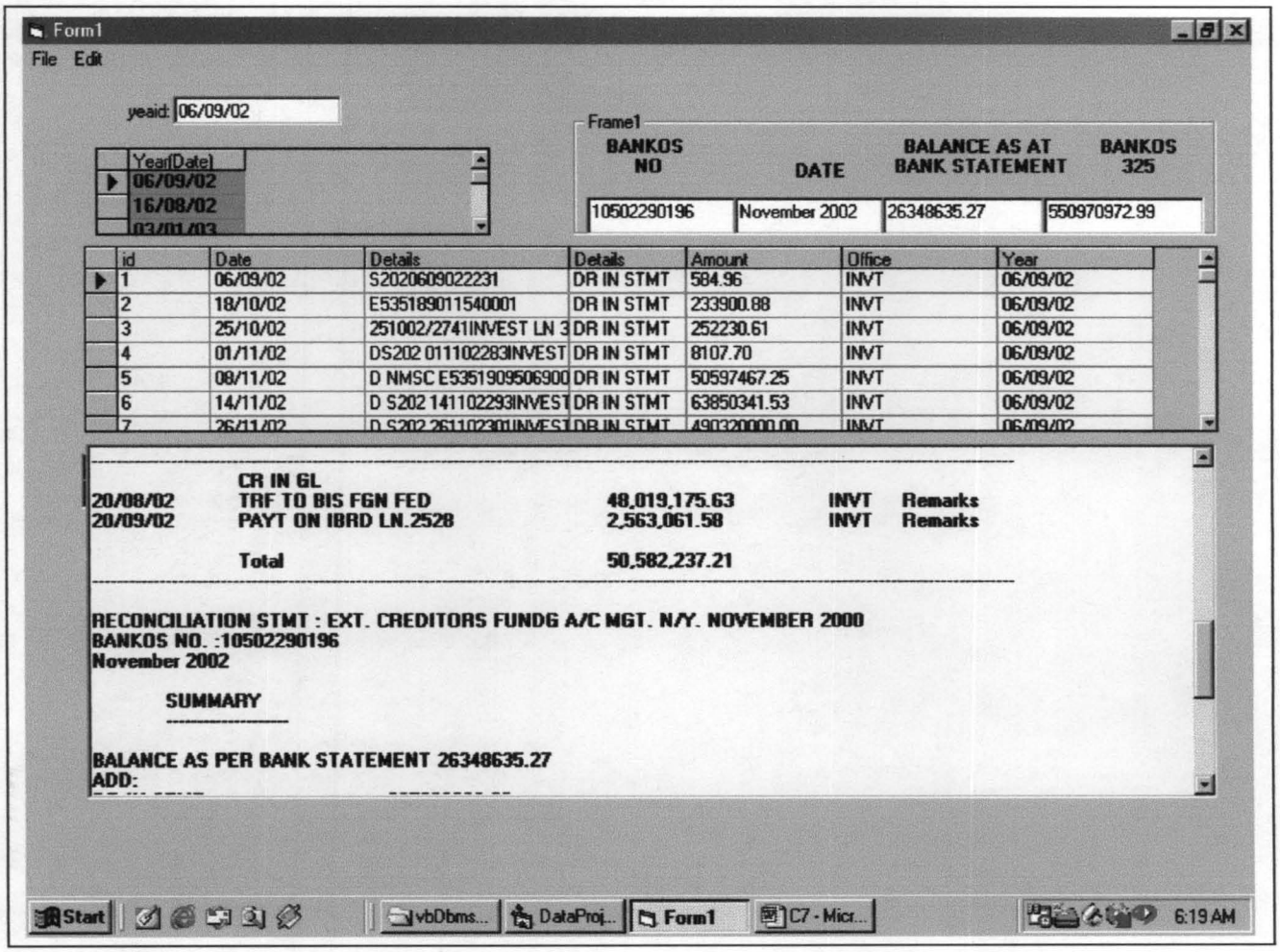

Form1
File Edit
yeaid: 06/09/02
Year(Date)
06/09/02
16/08/02
03/01/03
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id Date Details Details Amount Office Year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E5351909506900 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
Year
Enter Year
OK
Cancel
06/09/02
Start
vbDbmsCash
DataProject - ...
C2 - Microsoft...
Form1
6:09 AM

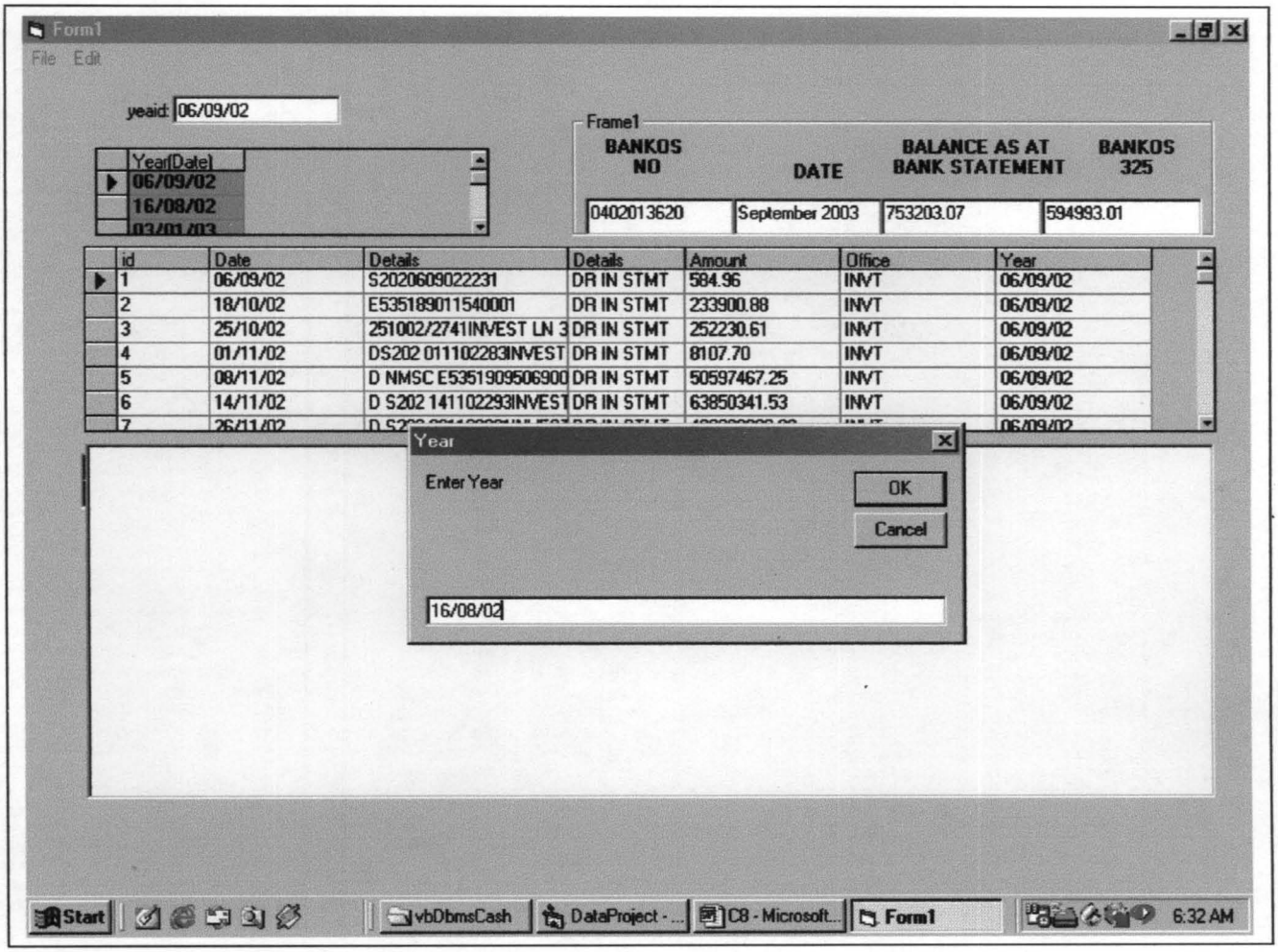

Form1
File Edit
yeaid: 06/09/02
Year(Date)
06/09/02
16/08/02
03/01/03
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id Date Details Details Amount Office Year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E5351909506900 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
RECONCILATION STATEMENT AS AT NOVEMBER 2002
BANK:EXT. CREDITORS FUNDG A/C MGT. LONDON CURRENCY : US$
Date of Entry Details Amount Office Remarks
DR IN STMT
06/09/02 S2020609022231 584.96 INVT Remarks
18/10/02 E535189011540001 233,900.88 INVT Remarks
25/10/02 251002/2741INVEST LN 307-NR 252,230.61 INVT Remarks
01/11/02 DS202 011102283INVEST 8,107.70 INVT Remarks
08/11/02 D NMSC E535190950690001 50,597,467.25 INVT Remarks
14/11/02 D S202 141102293INVEST 63,850,341.53 INVT Remarks
26/11/02 D S202 261102301INVEST 490,320,000.00 INVT Remarks
Total 605,262,632.93
Start
vbDbms...
DataProj...
Form1
C3 - Micr...
6:12 AM

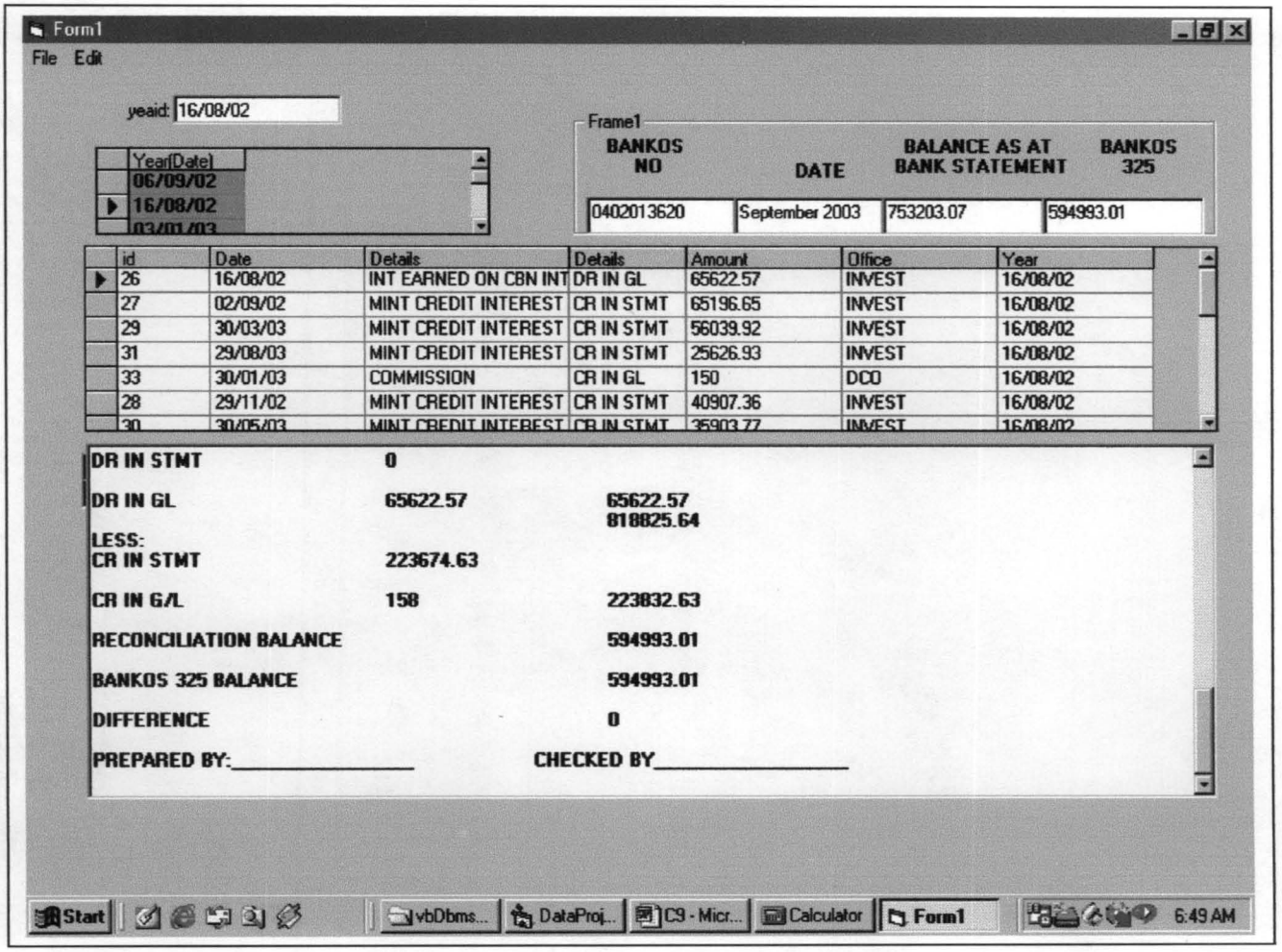

Form1
File Edit
yeaid: 06/09/02
Year[Date]
06/09/02
16/08/02
03/01/03
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id Date Details Details Amount Office Year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E5351909506900 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
ADD:
DR IN STMT 605262632.93
DR IN GL 8075.92 605270708.85
631619344.12
LESS:
CR IN STMT 30066133.92
CR IN G/L 50582237.21 80648371.13
RECONCILIATION BALANCE 550970972.99
BANKOS 325 BALANCE 550970972.99
DIFFERENCE 0
PREPARED BY:_____ CHECKED BY_____
Start
vbDbms...
DataProj...
Form1
C4 - Micr...
6:14 AM


Form1
File Edit
yeaid: 06/09/02
Year(Date)
06/09/02
16/08/02
03/01/03
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id Date Details Details Amount Office Year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E5351909506900 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
26/11/02 D S202 261102301INVEST 490,320,000.00 INVT Remarks
Total 605,262,632.93
DR IN GL
26/08/02 INTEREST 8,075.92 INVT Remarks
Total 8,075.92
CR IN STMT
29/07/02 2705502/126INVEST 553.65 INVT Remarks
15/08/02 O/B BTM LTD NY 29,999,995.00 INVT Remarks
03/09/02 INTEREST 29,564.44 INVT Remarks
10/10/02 0110200283AY COKER J.A 584.96 INVT Remarks
Start
vbDbms...
DataProj...
Form1
C5 - Micr...
6:17 AM


Form1
File Edit
yeaid: 06/09/02
Year(Date)
06/09/02
16/08/02
03/01/03
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id | Date | Details | Details | Amount | Office | Year
1 | 06/09/02 | S2020609022231 | DR IN STMT | 584.96 | INVT | 06/09/02
2 | 18/10/02 | E535189011540001 | DR IN STMT | 233900.88 | INVT | 06/09/02
3 | 25/10/02 | 251002/2741INVEST LN 3 | DR IN STMT | 252230.61 | INVT | 06/09/02
4 | 01/11/02 | DS202 011102283INVEST | DR IN STMT | 8107.70 | INVT | 06/09/02
5 | 08/11/02 | D NMSC E5351909506900 | DR IN STMT | 50597467.25 | INVT | 06/09/02
6 | 14/11/02 | D S202 141102293INVEST | DR IN STMT | 63850341.53 | INVT | 06/09/02
7 | 26/11/02 | D S202 261102301INVEST | DR IN STMT | 490320000.00 | INVT | 06/09/02
Total 8,075.92
CR IN STMT
29/07/02 2705502/126INVEST 553.65 INVT Remarks
15/08/02 O/B BTM LTD NY 29,999,995.00 INVT Remarks
03/09/02 INTEREST 29,564.44 INVT Remarks
10/10/02 0110200283AY COKER J.A 584.96 INVT Remarks
01/11/02 INTEREST 35,435.87 INVT Remarks
Total 30,066,133.92
CR IN GL
20/08/02 TRF TO BIS FGN FED 48,019,175.63 INVT Remarks
20/09/02 PAYT ON IBRD LN.2528 2,563,061.58 INVT Remarks
Start
vbDbms...
DataProj...
Form1
C6 - Micr...
6:18 AM


Form1
File Edit
yeaid: 06/09/02
Year(Date)
06/09/02
16/08/02
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
10502290196
November 2002
26348635.27
550970972.99
id Date Details Details Amount Office Year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E535190950690 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
CR IN GL
20/08/02 TRF TO BIS FGN FED 48,019,175.63 INVT Remarks
20/09/02 PAYT ON IBRD LN.2528 2,563,061.58 INVT Remarks
Total 50,582,237.21
RECONCILIATION STMT : EXT. CREDITORS FUNDG A/C MGT. N/Y. NOVEMBER 2000
BANKOS NO. :10502290196
November 2002
SUMMARY
BALANCE AS PER BANK STATEMENT 26348635.27
ADD:
Start
vbDbms...
DataProj...
Form1
C7 - Micr...
6:19 AM


Form1
File Edit
yeaid: 06/09/02
Year[Date]
06/09/02
16/08/02
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
0402013620
September 2003
753203.07
594993.01
id Date Details Details Amount Office Year
1 06/09/02 S2020609022231 DR IN STMT 584.96 INVT 06/09/02
2 18/10/02 E535189011540001 DR IN STMT 233900.88 INVT 06/09/02
3 25/10/02 251002/2741INVEST LN 3 DR IN STMT 252230.61 INVT 06/09/02
4 01/11/02 DS202 011102283INVEST DR IN STMT 8107.70 INVT 06/09/02
5 08/11/02 D NMSC E5351909506900 DR IN STMT 50597467.25 INVT 06/09/02
6 14/11/02 D S202 141102293INVEST DR IN STMT 63850341.53 INVT 06/09/02
Year
Enter Year
OK
Cancel
16/08/02
Start
vbDbmsCash
DataProject - ...
C8 - Microsoft...
Form1
6:32 AM


Form1
File Edit
yeaid: 16/08/02
Year(Date)
06/09/02
16/08/02
Frame1
BANKOS NO
DATE
BALANCE AS AT BANK STATEMENT
BANKOS 325
0402013620
September 2003
753203.07
594993.01
id Date Details Details Amount Office Year
26 16/08/02 INT EARNED ON CBN INT DR IN GL 65622.57 INVEST 16/08/02
27 02/09/02 MINT CREDIT INTEREST CR IN STMT 65196.65 INVEST 16/08/02
29 30/03/03 MINT CREDIT INTEREST CR IN STMT 56039.92 INVEST 16/08/02
31 29/08/03 MINT CREDIT INTEREST CR IN STMT 25626.93 INVEST 16/08/02
33 30/01/03 COMMISSION CR IN GL 150 DCO 16/08/02
28 29/11/02 MINT CREDIT INTEREST CR IN STMT 40907.36 INVEST 16/08/02
DR IN STMT 0
DR IN GL 65622.57 65622.57
818825.64
LESS:
CR IN STMT 223674.63
CR IN G/L 158 223832.63
RECONCILIATION BALANCE 594993.01
BANKOS 325 BALANCE 594993.01
DIFFERENCE 0
PREPARED BY:_____ CHECKED BY_____
Start
vbDbms...
DataProj...
C9 - Micr...
Calculator
Form1
6:49 AM

4.6 OUTPUT ANALYSIS

The output analysis for A is as follows. The outputs are shown under the following columns:

(i) Date of Entry: This shows the date the entry was recorded either in the bank statement or the BANKOS i.e. General Ledger.

(ii) Details: This shows the nature of each transaction. For example under DR. in STMT the codes shown are the instructions sent to the correspondent bank, i.e. (JP Chase Morgan) mandating it to debit the account with those values. Like wise, under DR in GL, the detail shows that the outstanding of $8,075.92 was interest.

(iii) The amount column shows the amount of each transaction for each entry in either the bank statement or the BANKOS. These various amounts are summed up to give the total amount for each heading, i.e. Dr in Stmt, Dr in GL, etc.

(iv) The office column shows the office that is responsible for raising the required/necessary entries in order to clear the outstanding items. In the A output the abbreviation Invt means Investment Office.

(v) The remarks column is there to provide additional explanation where necessary.

THE SUMMARY

The second part of the output is the summary part, which has the following format.

Balance as per bank statement		XXX
Add		
Dr in stmt	XX	
Dr in GL	XX	XX
		XXX
Less:		
Cr in stmt	XX	

Cr in GL	XX	XX
Reconciliation balance		XXX
BANKOS 325 Balance		XXX
Difference ..		( )

The balance as per bank statement, i.e. $26,348,635.27 is the closing balance for the required month, in this case November, 2002.

The totals for the Debit in statement i.e. $605,262,632.93 and Debit in General Ledger (BANKOS) i.e. $8,075.92 respectively were added together to give $605,270,708.85.

This $605,270,708.85 was in turn added to the balance as per bank statement of $26,348,635.27 to give $631,619,344.12.

The summation of Credit in statement, i.e. $30,066,133.92 was added to the total of Credit in GL (BANKOS) of $50,582,237.21 to give $80,648,371.13.

This amount, i.e. $80,648,371.13 was then deducted from $631,619,344.2 to give the Reconciliation Balance of $550,970,972.99 which is then compared with the BANKOS closing balance for the month of November 2002 which in this case was $550,970,922.99. Since the BANKOS balance is the same as reconciliation balance, it means that there is no difference. Hence, the account is said to balance. If there is a difference the cause of the difference has to be found.

4.7 SYSTEM IMPLEMENTATION

In implementing this project, all specifications mentioned in this project should be strictly adhered to. Also, parallel method of changing over should be employed when changing over from old to the new system.

CHAPTER FIVE

SYSTEM SECURITY AND DOCUMENTATION

Documentation includes a wide range of technical and non-technical books, manuals descriptions and diagrams relating to the use and operation of a computer system. Examples include user manuals, hardware and operating software manuals. Security, on the other hand, deals with attempts to identify threats to an organization's information system (i.e. potential dangers which, if realized, would destroy or alter the working of an information system) and find means of dealing with such risks.

5.1 SYSTEM SECURITY

In order to maintain the integrity of the data the following control should be put in place:

(i) Password: In order to prevent unauthorized access to the data, the users should be provided with passwords. The password, however, should not be in the names of the users, his wife or children, etc. Preferably, the password should be alphanumeric.

(ii) Encryption: If the reconciliation exercise is to be made available to stations outside Abuja the message should be encrypted, encryption involves scrambling the data at one end of the line, transmitting the scrambled data and unscrambling it at the receiving end of the line.

In addition to this the message should be sent through one route while the password should be sent through another route.

(iii) Authentication: This is a technique of making sure that a message has come from an authorized sender. Authentication involves adding an extra field to a record with the content of this field derived from the reminder of the record by applying an algorithm that has previously been agreed between the sender and the receiver.

(iv) Worm:- This is a method whereby if an authorized person tries to enter into the data, the data and the system will be corrupted. Other methods of maintaining data integrity are.

(v) Data Verification: This is the prove of ensuring that the data that has been input into the system is the same as the data on the source documents. Hence all data input via keyboard must be checked on the screen.

(vi) Data validation: This is the process of ensuring that data that has been input has a value that is possible for that kind of data.

5.2 DOCUMENTATION

Documentation of a program can be described as a description of the program itself. In the documentation, the programmer is expected to explain in details what the program is designed to do. He should clearly state the writer of the program and the date it was written.

It is important that in documentation a programmer should state the problems encountered while writing the program and how the problems were solved. He is in addition expected to state the results got after testing the program.

5.3 IMPORTANCE OF DOCUMENTATION

I decided to document this program for the following reasons:-

1) A means of communicating all that is required to be known to all interested parties i.e. Management, Programmers and Users.

2) A permanent record of the system for evaluation, modification and training.

3) To save the programmer from the problem of forgetfulness as a result of passage of time

4) For easy maintenance. It is a known fact, that the needs of organization may change from time to time and when such changes arise, the documentation would allow eligible programmer in Visual Basic 6.0 to modify the program to accommodate the needs of the organization.

5.4 CONCLUSION

This work focused on reconciliation of bank statement and BANKOS using Visual Basic 6.0 instead of the conventional excel package so as to internalized part of the work of Foreign Operations Department, Central Bank of Nigeria.

Chapter one of the research work focused on computer system, its functional units and their functions, classification of computers, their characteristics and

application areas e.g. commerce, accounting, etc. The chapter also delves on limitations of computers as well as the objectives and scope of the study.

Chapter two reviews banking in Nigeria and highlighted the functions of Commercial, Merchant and a few Development banks while the evolution, organizational structure and objectives of Central Bank of Nigeria were deeply brought into focus.

Chapter three in turns discussed System Analysis and Design of the existing method of using excel package to reconcile accounts. Also discussed were the sources and procedure for reconciliation. The problems associated with the existing system were highlighted. In addition, the analysis and the benefits of the proposed system were stated.

In order to show the workability of the new system the output was analyzed in chapter four while the environmental, atmospheric and human requirements for effective operation of the new system were discussed.

Chapter five discusses security and documentation of the new system.

5.5 RECOMMENDATIONS

In order to have effective implementation of the proposed system the following recommendations should be strictly adhered to:

(1) Hardware and software specifications given in the write up should be adhere to.

(2) The operators and the users should be properly trained.

(3) Periodic evaluation and monitoring of the new system should be put in place.

REFERENCES

1. Akanji O.O. - Central Bank of Nigeria Restructuring/Reengineering Bullion, Vol. 25 No.1 January/March.

2. Buhari L.A (1987) - ICAN Economics University of Ilorin Press Ilorin

3. Famoyin V.O. (1970) - Foundations of Economic of West Africa Onibonoje printing press Ibadan

4. French S.C. (1986) - Computer Studies D.P. Publications Essex

5. ICSA Study Text (1998) - Managing Information System BPP Publishing Limited London

6. Okafor E. I. (2000) - Banking practices in Nigeria in the next Millennium Bullion, vol. 24 No. 4

7. Oliver E.C. et al (1983) - Data Processing. D.P. Publications Essex

8. United Nations (1995) - Information Technology for Development Published by United Nations Geneva, Switzerland

9. Yahaya Musa (2002) - Computerization of cheque Transactions in Banking industry (A case study of United Bank for Africa PLC Minna Branch) unpublished.

```
Private Sub Form_Load()
'rt.SelLength
End Sub

Private Sub mnuClose_Click()
'
Unload Me

 DataEnvironment1.rsT1.Close
 DataEnvironment1.rsT21.Close

End Sub

Private Sub mnuCop_Click()
   Dim strInp As String
   Dim Drinst As Double
   Dim DrinGl As Double
   Dim Crinst As Double
   Dim Cringl As Double
   Dim mi As Integer
   Dim j As Integer, j1 As Integer, j2 As Integer, j3 As Integer
   '
   Dim StoreDiStmt(1 To 1000) As String
   Dim StoreAmt(1 To 1000) As String
   Dim Storedate(1 To 1000) As String
   Dim storeIvt(1 To 1000) As String
   Dim storDrinGl(1 To 1000) As String
   Dim storCrinStmt(1 To 1000) As String
   Dim storeCringl(1 To 1000) As String
   Dim storeDetails(1 To 1000) As String
   '
   Dim StoreDiStmt1(1 To 1000) As String
   Dim StoreAmt1(1 To 1000) As String
   Dim Storedate1(1 To 1000) As String
   Dim storeIvt1(1 To 1000) As String
   Dim storDrinGl1(1 To 1000) As String
   Dim storCrinStmt1(1 To 1000) As String
   Dim storeCringl1(1 To 1000) As String
   Dim storeDetails1(1 To 1000) As String
   '
   Dim StoreDiStmt2(1 To 1000) As String
   Dim StoreAmt2(1 To 1000) As String
   Dim Storedate2(1 To 1000) As String
   Dim storeIvt2(1 To 1000) As String
```

```
Dim storDrinGl2(1 To 1000) As String
Dim storCrinStmt2(1 To 1000) As String
Dim storeCringl2(1 To 1000) As String
Dim storeDetails2(1 To 1000) As String
'
Dim StoreDiStmt3(1 To 1000) As String
Dim StoreAmt3(1 To 1000) As String
Dim Storedate3(1 To 1000) As String
Dim storeIvt3(1 To 1000) As String
Dim storDrinGl3(1 To 1000) As String
Dim storCrinStmt3(1 To 1000) As String
Dim storeCringl3(1 To 1000) As String
Dim storeDetails3(1 To 1000) As String
Dim Tot1 As Double
Dim Tot2 As Double

strInp = InputBox("Enter Year", "Year")
DataEnvironment1.rsT1.MoveFirst
DataEnvironment1.rsT21.MoveFirst
'
For k = 1 To DataEnvironment1.rsT1.RecordCount

   If txtyeaid.Text = strInp Then
   mi = mi + 1
   '
        For m = 1 To DataEnvironment1.rsT21.RecordCount

          If txtyear.Text = Trim(strInp) And txtDetal.Text = "DR IN STMT" Then
             Drinst = Drinst + Val(txtAmout.Text)
             j = j + 1
             StoreDiStmt(j) = txtDetal.Text
             Storedate(j) = txtdatee.Text
             storeDetails(j) = txtDetails.Text
             storeIvt(j) = txtOffice.Text
             StoreAmt(j) = txtAmout.Text
          End If

          If txtyear.Text = Trim(strInp) And txtDetal.Text = "DR IN GL" Then
             DrinGl = DrinGl + Val(txtAmout.Text)
             '
             j1 = j1 + 1
             StoreDiStmt1(j1) = txtDetal.Text
             Storedate1(j1) = txtdatee.Text
             storeDetails1(j1) = txtDetails.Text
             storeIvt1(j1) = txtOffice.Text
             StoreAmt1(j1) = txtAmout.Text
```

```
            End If

            If txtyear.Text = Trim(strInp) And txtDetal.Text = "CR IN STMT" Then
               Crinst = Crinst + Val(txtAmout.Text)
               '
               j2 = j2 + 1
               StoreDiStmt2(j2) = txtDetal.Text
               Storedate2(j2) = txtdatee.Text
               storeDetails2(j2) = txtDetails.Text
               storeIvt2(j2) = txtOffice.Text
               StoreAmt2(j2) = txtAmout.Text
            End If
            '
            If txtyear.Text = Trim(strInp) And txtDetal.Text = "CR IN GL" Then
               Cringl = Cringl + Val(txtAmout.Text)
               '
               j3 = j3 + 1
               StoreDiStmt3(j3) = txtDetal.Text
               Storedate3(j3) = txtdatee.Text
               storeDetails3(j3) = txtDetails.Text
               storeIvt3(j3) = txtOffice.Text
               StoreAmt3(j3) = txtAmout.Text
            End If
            '
            '
            DataEnvironment1.rsT21.MoveNext
            '
            If DataEnvironment1.rsT21.EOF Then
               DataEnvironment1.rsT21.MoveLast
            End If

      Next m
         '
         '
Else

         DataEnvironment1.rsT1.MoveNext
          If DataEnvironment1.rsT1.EOF Then
            DataEnvironment1.rsT1.MoveLast
         End If
      End If

   If mi > 0 Then GoTo 10

    Next k
    '
```

```
10:     "rt.SelText = "Total DR IN STMT = " & Drinst & vbCrLf
        "rt.SelText = "Total DR IN GL = " & DrinGl & vbCrLf
        "rt.SelText = "Total CR IN STMT =  " & Crinst & vbCrLf
        "rt.SelText = "Total CR IN GL = " & Cringl & vbCrLf
        '
        "rt.SelText = "DR IN STMT + DR IN GL = " & Drinst + DrinGl

        "rt.SelText = "DR IN STMT + DR IN GL = " & Drinst + DrinGl
        '
        '


        rt.SelText = "RECONCILATION STATEMENT AS AT NOVEMBER 2002" &
vbCrLf
        rt.SelText = "BANK:EXT. CREDITORS FUNDG A/C MGT. LONDON " &
vbTab & "CURRENCY : US$" & vbCrLf
        rt.SelText = String(120, "-") & vbCrLf & vbCrLf
        '
        rt.SelText = "Date of Entry" & vbTab & vbTab & "Details" & vbTab & vbTab &
vbTab & vbTab & "Amount" & vbTab & vbTab & vbTab & "Office" & vbTab &
"Remarks" & vbCrLf
       rt.SelText = String(150, "-") & vbCrLf

        '
         rt.SelText = vbTab & vbTab & vbTab & "DR IN STMT " & vbCrLf

        Dim stNo As String

        rt.SelText = vbCrLf

        For p = 1 To j
            klen = 39 - Len(storeDetails(p))
            klen1 = storeDetails(p) & Space(klen)
            stnMoney = 21 - Len(Format(StoreAmt(p), "###,###,###.#0"))
            stnMoney1 = (Format(StoreAmt(p), "###,###,###.#0")) & Space(stnMoney)

            rt.SelText = Storedate(p) & vbTab & klen1 & vbTab & stnMoney1 & vbTab &
storeIvt(p) & vbTab & "Remarks" & vbCrLf

        Next p
         '
         rt.SelText = vbCrLf
         rt.SelText = vbTab & vbTab & "Total" & vbTab & vbTab & vbTab & vbTab &
vbTab & Format(Drinst, "###,###,###.#0") & vbCrLf
         rt.SelText = String(150, "-") & vbCrLf
         rt.SelText = vbTab & vbTab & "DR IN GL" & vbCrLf
```

```
'
rt.SelText = vbCrLf
For p = 1 To j1

    klen = 39 - Len(storeDetails1(p))
    klen1 = storeDetails1(p) & Space(klen)
    stnMoney = 21 - Len(Format(StoreAmt1(p), "###,###,###.#0"))
    stnMoney1 = (Format(StoreAmt1(p), "###,###,###.#0")) & Space(stnMoney)

    rt.SelText = Storedate1(p) & vbTab & klen1 & vbTab & stnMoney1 & vbTab
& storeIvt1(p) & vbTab & "Remarks" & vbCrLf
    '
 Next p
  rt.SelText = vbCrLf

  rt.SelText = vbTab & vbTab & "Total" & vbTab & vbTab & vbTab & vbTab &
Format(DrinGl, "###,###,###.#0") & vbCrLf
  rt.SelText = String(150, "-") & vbCrLf
  '
  '
rt.SelText = vbCrLf
rt.SelText = vbTab & vbTab & "CR IN STMT" & vbCrLf
rt.SelText = vbCrLf
For p = 1 To j2
    klen = 39 - Len(storeDetails2(p))
    klen1 = storeDetails2(p) & Space(klen)
    stnMoney = 21 - Len(Format(StoreAmt2(p), "###,###,###.#0"))
    stnMoney1 = (Format(StoreAmt2(p), "###,###,###.#0")) & Space(stnMoney)

    rt.SelText = Storedate2(p) & vbTab & klen1 & vbTab & stnMoney1 & vbTab
& storeIvt2(p) & vbTab & "Remarks" & vbCrLf
    '
 Next p
  rt.SelText = vbCrLf
  rt.SelText = vbTab & vbTab & "Total" & vbTab & vbTab & vbTab & vbTab &
Format(Crinst, "###,###,###.#0") & vbCrLf
  rt.SelText = String(150, "-") & vbCrLf

'
  '

rt.SelText = vbTab & vbTab & "CR IN GL" & vbCrLf

For p = 1 To j3
     klen = 39 - Len(storeDetails3(p))
    klen1 = storeDetails3(p) & Space(klen)
```

```
            stnMoney = 21 - Len(Format(StoreAmt3(p), "###,###,###.#0"))
            stnMoney1 = (Format(StoreAmt3(p), "###,###,###.#0")) & Space(stnMoney)

            rt.SelText = Storedate3(p) & vbTab & klen1 & vbTab & stnMoney1 & vbTab
& storeIvt3(p) & vbTab & "Remarks" & vbCrLf
            '
        Next p
         rt.SelText = vbCrLf
         rt.SelText = vbTab & vbTab & "Total" & vbTab & vbTab & vbTab & vbTab &
vbTab & Format(Cringl, "###,###,###.#0") & vbCrLf
         rt.SelText = String(150, "-") & vbCrLf
         '
         dateq = InputBox("Enter Date...", "Recociliation STMT....")

         rt.SelText = vbCrLf
         '
         rt.SelText = "RECONCILIATION STMT : EXT. CREDITORS FUNDG A/C
MGT. N/Y. " & dateq & vbCrLf
         rt.SelText = "BANKOS NO. :" & BANos & vbCrLf
         rt.SelText = nov2 & vbCrLf & vbCrLf
         '
         rt.SelText = vbTab & "SUMMARY" & vbCrLf
         rt.SelText = vbTab & String(20, "-") & vbCrLf & vbCrLf
         '
         rt.SelText = "BALANCE AS PER BANK STATEMENT " & BALS & vbCrLf
         '
         Tot1 = (Drinst + DrinGl)
         ttot1 = Val(BALS) + Tot1
         rt.SelText = "ADD:" & vbCrLf
         rt.SelText = "DR IN STMT" & vbTab & vbTab & vbTab & Drinst & vbCrLf &
vbCrLf
         rt.SelText = "DR IN GL" & vbTab & vbTab & vbTab & DrinGl & vbTab &
vbTab & Tot1 & vbCrLf & vbCrLf
         rt.SelText = vbTab & vbTab & vbTab & vbTab & vbTab & vbTab & vbTab &
vbTab & vbTab & ttot1 & vbCrLf

         '
         Tot2 = (Crinst + Cringl)
        ' dif = dift - Tot2
         dift = ttot1 - Tot2
         rt.SelText = "LESS:" & vbCrLf
         rt.SelText = "CR IN STMT" & vbTab & vbTab & vbTab & Crinst & vbCrLf &
vbCrLf
         rt.SelText = "CR IN G/L" & vbTab & vbTab & vbTab & Cringl & vbTab &
vbTab & Tot2 & vbCrLf & vbCrLf
```

```
        rt.SelText = "RECONCILIATION BALANCE" & vbTab & vbTab & vbTab &
dift & vbCrLf & vbCrLf
        rt.SelText = "BANKOS 325 BALANCE" & vbTab & vbTab & vbTab &
Val(BKbALL) & vbCrLf & vbCrLf
        rt.SelText = "DIFFERENCE" & vbTab & vbTab & vbTab & BKbALL - dift &
vbCrLf & vbCrLf
        rt.SelText = "PREPARED BY:_____" & vbTab & vbTab &
"CHECKED BY_____" & vbCrLf

        '

        '


        '









End Sub

Private Sub mnuPr_Click()
On Error Resume Next
   If frmPro Is Nothing Then Exit Sub


   With CommonDialog1
      .DialogTitle = "Print"
      .CancelError = True
      .Flags = cdlPDReturnDC + cdlPDNoPageNums
      If rt.SelLength = 0 Then
         .Flags = .Flags + cdlPDAllPages
      Else
         .Flags = .Flags + cdlPDSelection
      End If
      .ShowPrinter
      If Err <> MSComDlg.cdlCancel Then
         rt.SelPrint .hDC
      End If
   End With
End Sub

Private Sub mnusave_Click()
```

```
Unload Me

DataEnvironment1.rsT1.Close
DataEnvironment1.rsT21.Close
'
Load frmPro
frmPro.Show

End Sub
```