APPLICATION OF COMPUTER TO AUDIT AND CONTROLS

(A CASE STUDY OF BANK OF THE NORTH LTD MINNA BRANCH CASH BOOK)

BY

ALAMI CHARITY EGBITA

PGD/MCS/97/437

DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.

SEPTEMBER, 2000

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A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE, FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF POST GRADUATE DIPLOMA IN COMPUTER SCIENCE

CERTIFICATION

I certify that this project was carried out by ALAMI CHARITY EGBITA (MRS) of the Department of Mathematics/Computer Science, Federal University of Technology, Minna.

....

Mall. Isah Audu Date
Project Supervisor

....

Dr. S.A. Reju Date
Head of Department

....

External Examiner Date.

DEDICATION

I dedicate this project to My Late Son JOSHUA OJIMA-OJO EGBITA who passed on to Glory while I was undergoing this course. OJIMA, continue to rest in peace.

ACKNOWLEDGEMENT

My sincere appreciation goes to the Almighty God who made me what I am today.

I wish to express my profound gratitude to my Supervisor, Mall. Isah Audu for sacrificing his time to see to the successful completion of this work.

My appreciation also goes to my Head of Department, Dr. S.A. Reju and my Lecturers for the knowledge imparted.

To the Management of Bank of North Limited, I say thanks for the opportunity granted unto me to undergo this course.

Last, but definitely not the least, I wish to appreciate my beloved Husband, JOSHUA GAMBO EGBITA, for his support and patience while this programme lasted. May God continue to bless you abundantly in Jesus name.

ABSTRACT

An audit is an examination by an independent expert of a set of financial statements & the underlying books & records, which results in the auditor providing an opinion on the financial statements.

Every organization has measures/procedures designed to prevent fraud & error from occurring since it is these events that lead to financial statements being mis-stated.

This projects examines the role the computer plays in ensuring that records are accurately kept and readily available when needed.

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CHAPTER ONE

1.0 GENERAL INTRODUCTION

1.1 INTRODUCTION

Business concerns as well as government are continually increasing their dependence on computerized data processing systems. These systems are growing in complexity as time goes on. Therefore, it is becoming increasingly important that adequate audit and controls considerations be designed into these systems. Just as methods of business are being restructured because of the capabilities of the computer, so must audit and controls concepts be restructured to complement the characteristics of computerized data processing systems.

Traditional auditing has implied evaluation of historical data. Many of the advance computer auditing techniques in use today still analyze historical data. Auditing in a data processing environment is moving toward auditing transactions in conjunction with normal processing cycle. Other advanced computer auditing techniques use dummy data (printed report) to check compliance of application systems with organisation policy. Auditors are also becoming involved in analysing computer application programs. This provides the organisation with assurance that controls built into the application system are absolutely functioning.

1.2 THE COMPUTERISED BUSINESS ENVIRONMENT.

The computers- electronic data processing (EDP) represents one of the major technological advances in business in the last fifteen to twenty years. Computer system can handle a large number of varied tasks, from processing a simple payroll to simulating the effect of alternative decisions on all operations of a business concern.. Top management, formerly conservative in the use of computer, has begun to realize the tremendous potential of the computer in promoting operational efficiency and effective decision making.

Currently, computer is being boldly applied to management control and strategic planning functions. In addition, computers are making increasing impact on consumers and house holds. Electronic Funds Transfer Systems (EFTS) are enabling people to do their banking and pay their bills in grocery stores parking lots by telephones in their homes. Instantaneously, cheques can be cashed, bills and loan repayments made and deposits or withdrawals completed. Indeed, we are truly beginning to enter into what some have called the cashless soceity.

However, the impact of the computer on a business organisation varies depending on how the computer is used. In some organisations, the impact is minimal. In other organisations, business transaction processing stop when the computer goes down. Successful business operations have learned to minimize

the impact of business risks. Each new venture a business undertaker has associated with it a new or increased risks. This new or increased risks have effect on the financial statement of an organisation. Because of these new and increased risks, new methods of audit and control must be introduced and hence organisation must learn to identify and control these risks.

1.3 BRIEF HISTORY OF BANK OF THE NORTH LIMITED

Bank of the North Ltd was incorporated on the 17th September, 1959 with an initial paid-up Capital of £12500.00. The Bank which commenced business in January 1960 at two branches located at Kano and Kaduna is presently owned by the Nineteen Northern State Governments and the Northern Nigeria Development Company Ltd (NNDC). The later is itself owned by the 19 Northern State Governments.

The Bank was established to provide and support general services in the following areas:

- General banking services through the acceptance of customers' deposits and operation of different kinds of Accounts,
- Collection of the proceeds of cheques,
- Issuance of Drafts and certified cheques,
- Telegraphic and Mail Transfers,
- Discount of bills,

- Safe custody of documents and valuable,
- Standing Orders,
- Status inquiries/references,
- Provision of financial assistance for commerce, industry, agriculture,
- Bonds, guarantees and Indemnities,
- Foreign business transactions through letters of credit and collections in respect of imports, exports, sale of travelers cheques, personal home-remittances, operation of Domiciliary accounts,
- Financial Advisory services.

SERVICES PROVIDED BY THE BANK

1. ACCOUNTS

The Bank offers customers the opportunities to operate a variety of Accounts to suit their particular needs.

(a) Savings Accounts:

In order to encourage savings of surplus funds, the Bank pays attractive interest on amounts deposited in Savings Accounts. Customers are free to add to and withdraw from their deposits at any time in accordance with the regulations spelt out in their Pass Books.

(b) Current Accounts:

The Bank operates current accounts for all customers ranging from workers, sole proprietors to large corporate customers. All current accounts are opened promptly once the customer has complied with the simple requirements.

(c) Term Deposit Accounts:

Funds are accepted on term deposit of varying tenor ranging from 7 Day Notice Deposit to deposits of one month, three months, six months, twelve months and above. Interest payable on these accounts are very competitive and flexible. Customers are therefore free to negotiate interest rates, which are adjustable upon changes in interest rates structure.

2. FINANCIAL ASSISTANCE

The Bank extends financial assistance to individuals, businessmen and corporate customers to meet their various needs. Projects to be financed must be viable and adequate securities in the firm of guarantees of credit-worth individuals and corporate bodies, stores and shares, debenture on assets and developed properties with statutory titles on which the Bank can take a legal charge must also be made available.

The following are the different forms of facilities available:

(a) Personal Loans:

The Bank extends short-term personal loans to individuals to tide them over their temporary financial needs or purchase of consumer durable.

(b) Overdraft:

Revolving overdraft facilities are extended to business customers to meet their working capital needs. This is a very flexible and cheap source of finance, as customers are charged interest only for the amounts they utilize from time to time.

(c) Project finance:

The Bank also grants short/medium/long term loans to finance different types of viable projects especially in the High Priority Sectors of Agriculture, Manufacturing & Exports. To test the viability of projects to be financed, Feasibility Studies are demanded. In circumstances where customers opt for foreign financing, the Bank has the necessary credibility to issue guarantee to the foreign financiers after due and satisfactory appraisal of the project. Repayments are usually structured to suit the projected earnings of the projects financed.

(d) Loan syndication:

Where customers financing requirement is sizeable or above the Bank maximum lending limit, a consortium lending is arranged whereby others Banks are involved in co-financing the venture. Because of the Bank's strength, experience and reputation in the capital market, packaging finance is done with minimum delay and is usually structured to suit customers' specific needs.

(e) Housing/Vehicle loan:

Housing loans are granted to deserving customers for the purpose of purchasing or developing their own residential accommodation. For customers requiring assistance for owner-occupier residential buildings, such facilities are usually granted at concessionary rate of interest and a liberal repayment period. The collateral security is usually the house to be built, although additional securities may be demanded sometimes.

Vehicle loans are also granted to deserving employers for the purpose of on-lending to their employees. The loans are granted for a fixed period not exceeding five years.

(f) Agricultural Loans:

In response to the encouragement and priority Government accords to agriculture, the Bank takes an active part in financing agriculture. The Bank extends financial assistance to all categories of farmers whether they are

customers or not provided their projects are appraised to be viable. Such loans may be granted at subsidized rates of interest, which are usually below the market rates. The Bank's assistance covers a variety of agricultural activities such as, the cultivation of perennial products, establishment of plantations, Animal husbandry, purchase of farm machinery, infrastructural development like irrigation, etc. The facilities may be seasonal, that is, short term facilities granted during the planting season and are repayable after harvest and sale of farm products. Under this scheme, the Bank grants up to ₦ 20,000.00 to farmers without demanding tangible security. An identification by the Village Head, Community Leader or Person of repute together with personal guarantee should suffice for the purpose of loans in this category plus 75% guarantee of the Central Bank of Nigeria under the Agricultural Credit Guarantee Scheme. The Bank also grants revolving overdraft and meduim to long-term loans to customers for projects with long gestation periods.

3. FINANCIAL ADVISORY SERVICES:

The Bank's customers have access, free of charge, to professional advice on how best to handle their financial matters. Whether the problem is in establishing a new project, acquiring an existing one, capital re-structure, merger, re-organization, equipment leasing etc, the Bank is always willing to put

its professional team at customer's disposal. The problem will be analyzed, alternatives identified and recommendations made for the best solution.

4. FOREIGN BUSINESS:

The Bank has an international Banking department with highly trained and experienced personnel to handle the foreign transactions of its customers. Also, the Bank has correspondent relationship with reputable international Banks with worldwide network of branches in Europe, the Americas and the Far East to facilitate fast and efficient foreign business transactions for its customers. These are the services the Bank provides for its customers engaged in international trade:

(a) EXPORT

The Bank has created an "Export Desk" at the Head Office and at major Branches which can offer advice to exporters on matters ranging from local regulations and documentation to foreign markets, practices and credit worthiness of foreign importers. It also provide financial assistance to exporters and confirms irrevocable inward Letters of Credits opened by foreign importers in favour of exporters from Nigeria. The Bank negotiates documents, accept and discount Bill of Exchange and pat at sight against documents presented under the Letters of Credits.

(b) **IMPORTS**

As an Authorized Dealer, the Bank opens Letters of Credits and get them confirmed through any of its Correspondents. It also collects proceeds on behalf of exporters for goods consigned to Nigeria importers on collection basis.

(c) **DOMICILIARY ACCOUNTS**

The Bank accepts deposits in foreign currency to the Credit of customers' accounts. Interest at market rates is paid to depositors in the foreign currency of deposit. Withdrawals and transfers abroad are also effected with minimum delay.

(d) **REMITTANCES**

The Bank ensures prompt and efficient remittance to and from Nigeria of funds from trade and non-trade transactions

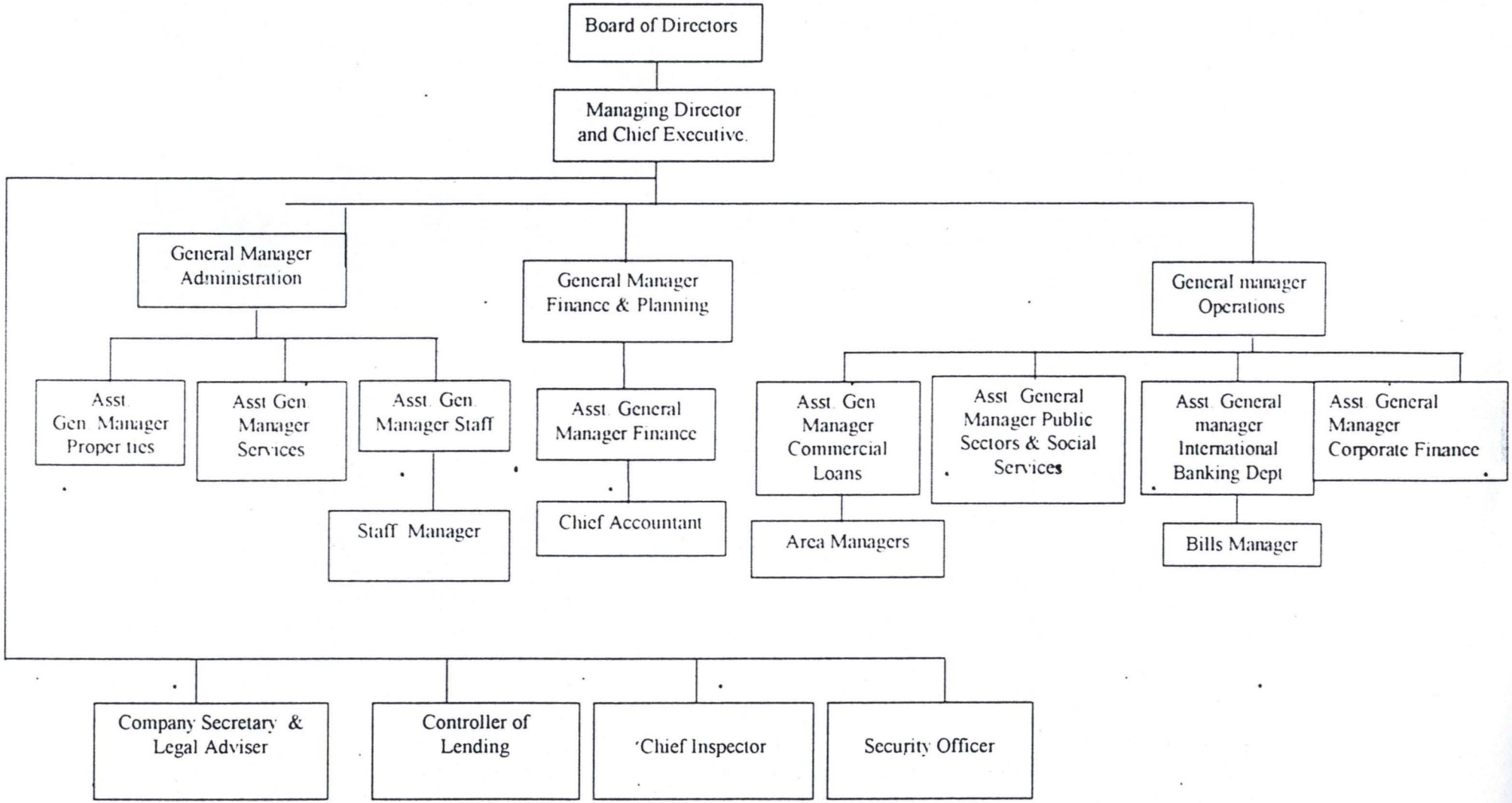
Traveler's cheques, Foreign cheques, and Transfers are provided for the following transactions:-

- Basic Travel Allowance (BTA)
- Student Remittances
- Foreign Medical Treatment
- Estacode Allowances for Official Travels and courses
- Business Travels
- Personal Home Remittances for Expatriates

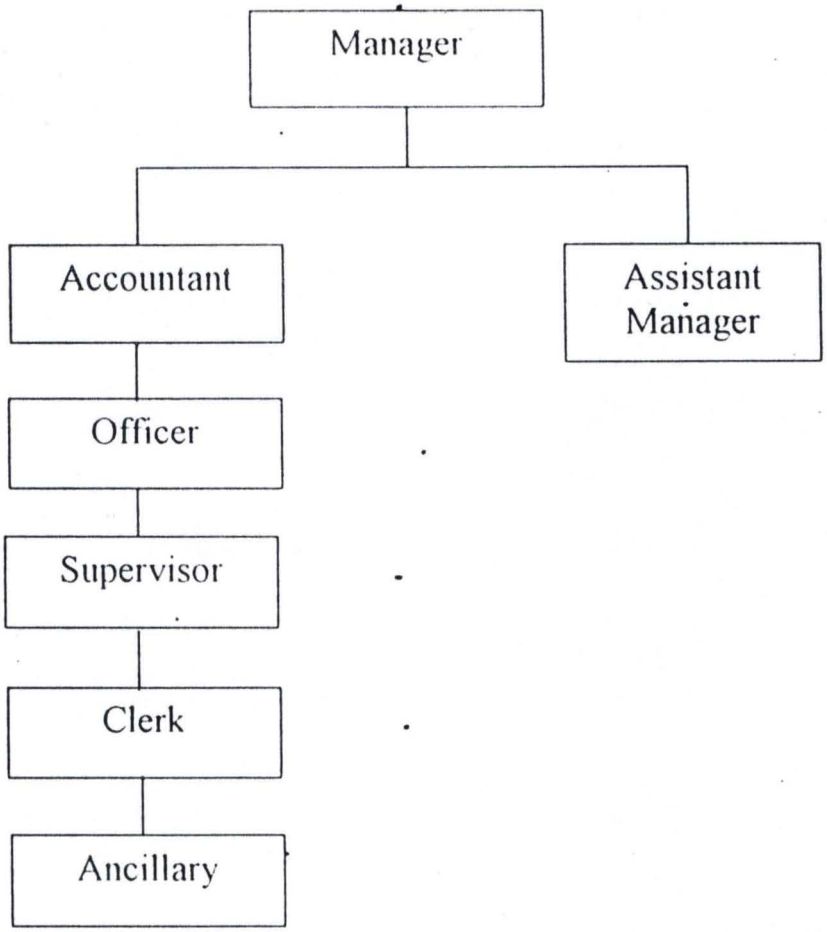
- Subscriptions to Professional Bodies and Professional Publications
- Consultancy fees etc.

During bank of the North Ltd. first ten years of operation, the two branches made steady progress so that by 1970, there were twelve branches. The Bank currently operates over 80 branches in twenty-six states of the Federation and the Federal Capital Territory Abuja. Its total assets now stand at over ₦ 10 billion with a share capital of ₦ 500 million. The total deposits stood at ₦13 billion while loans and advances amounted to ₦ 6.5billon for the year ended 31st Dec. 1998 with a gross earnings of ₦2.6 billion.

1.4 Organizational structure



BRANCH STRUCTURE



1.5 STATEMENT OF THE PROBLEMS

Going by the increased number of customers of the bank of the North Ltd, Minna branch and by virtue of the present mode of operation (Minual), auditing (i.e the internal checking and validation of the bank records) the daily transaction of the branch is not an easy task. Most of the problems encountered are as a result of the manual method of operation. Because of this method of

operation, the internal auditors of the bank find it very difficult to carry out their duties effectively.

In view of the above, the statement of the problems are classified into the following three (3) Categories:

(a) **IN-APPROPRIATE/ERRONEOUS RECORD KEEPING**

One eminent problem of the branch is the inappropriate record keeping of transaction files that have become a tradition at the branch. On the other hand, some of those records that are well kept are infected with either errors of omission or commission by the officer in charge. These errors are as a result of laxity and non-challant attitude on the part of the officers in the process of executing their duties.

(b) **BUSINESS INTERUPTION**

Since the branch mode of operation is completely manual, there is always job interruption. That is, a staff will have to wait for his colleague to finish posting and cross-checking before another posting and cross-checking can take place. This therefore pave way for time consumption.

(c) **TIME CONSUMPTION**

One good reason why most organizations have decided to embrace the use of computers is because of the speed and accuracy.

The present mode of operation at the Bank of the North Ltd. Minna branch is completely time consuming. This is because the officers responsible for posting of transactions will want to take their time to make sure that the posting has been carried out accurately without any error of omission or commission before passing it on to the next officer.

(d) **VALIDATION CHECK**

To carry out a validation check at a glance becomes very difficult because of the above aforementioned three (3) problems.

1.6 AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to carry out an in-depth study on the role of computer in audit and controls. The objectives are the following:-

(a) To design a customized Software Package called the "AUDIT SOFTWARE" that will be used to check and validate the branch's cash book postings on daily basis.

(b) To generate relevant reports that will be of importance to management for decision making.

(c) To illustrate how increase in computer crime can be reduced considerably.

1.7 SCOPE AND LIMITATION OF THE STUDY

The Bank of the North Ltd was incorporated to offer a wide range of banking services as earlier highlighted. The transactions involved in the

rendering of each of these services are numerous and going into detail discussion on then will defeat the aim of this project. However, one of the major services rendered by the Bank is the acceptance of customers' deposits through the operation of different types of accounts. It is therefore very important that deposits and withdrawals from accounts are correctly recorded to ensure customers' confidence.

Since the mode of operation in all the branches of the Bank are the same, this project covers the activities of Bank of the North Ltd. Minna Branch, focusing particularly on the Auditing and Controls of the daily cash transactions of the branch thus leading to the design of the customized "AUDIT SOFTWARE".

1.8 DEFINITION OF TERMS

AUDIT – An audit is an examination by an independent expert – the auditor (who can be either an individual or a professional firm) – of a set of financial statements and of the underlying books and records, which results in the auditor providing an opinion on the financial statements.

CONTROLS:- The measures/procedures designed by an organization to prevent fraud and error from occurring, since it is these events that lead to financial statements being miss-stated.

ERROR:- Errors are unintentional mistakes e.g. forgetting to authorize an invoice for payment.

FRAUD:- Frauds are intentional irregularities. They arise as a result of defalcations or distortions.

DEFALCA-

TION:- This is the misappropriation of assets such as the stealing of stock or the deliberate failure to invoice a sale.

DISTORTION:- This is a deliberate miss-statement by management of the financial records and statements to mislead users, usually the shareholders.

FINANCIAL-

STATEMENTS:- These are part of a company's Annual Report and the provide an indication of the company's trading performance as well as a snapshot of aspects of its financial position at a particular date. The financial statements include the Profit & Loss account, the balance sheet, source and application of funds and related explanatory notes.

COMPUTER:- An electronic device that accepts data as input, processes the data, stores the result and makes it available in the manner that is required.

SOFTWARE:- The programs used on a computer system.

PROGRAM:- A sequential list of instructions written in a specified computer language.

BANK:- An establishment for keeping money and valuables safely. The money is paid out on the customer's order.

CHAPTER TWO

AUDITING AND CONTROLS IN GENERAL

2.1 Auditing and Controls in Computer Age.

Auditing as defined by the Certified Public Accountants (CPA) is "the examination of information by a third party other than the prepare or the user with the intent of establishing its reliability and the reporting of the results of this examinations with the expectation of increasing the usefulness of the information to the user".

Controls on the other hand is defined as "the plan of an organization and all the co-ordinate methods and procedures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency and encourage adherence to prescribed management policies".

However, auditors often ignored the computer during the 1960s. They found there was normally sufficient evidence to audit effectively without direct involvement in accessing the controls within the computer systems. Most organizations had redundant controls external to the computer application that provided auditors with sufficient assurance that the systems were functioning correctly.

As computer systems became more integrated and complex, the amount and frequency of non-computer evidence decreased. Auditors found an increasing need to extract data from computer applications. Unable to get at computer data with existing audit methods, new methods were needed. The major public accounting firms developed software for auditors to fulfill this need. This software permitted auditor to obtain computer data independently of the data processing personnel.

Some of the earliest efforts in computer control and audit came from the Canadian Institute of Chartered Accountants. In 1970, they published a manual outlining the types of control needed in a computerized business environment. This Computer Control Guidelines manual was followed in 1975 by a Companion Computer Audit Guidelines Manual. This audit manual explained how to assess the adequacy of computer controls.

2.2 FUNCTIONS OF AUDITORS IN AN ORGANISATION

The functions of an auditor in an organization cannot be over-emphasized. However, few among the functions are as follows:

(1) To examine the financial records of an organization.

(2) To promote operational efficiency and encourage adherence to prescribed managerial policies.

(3) Involvement in appraising the accounting, financial, and operating controls within an organization.

(4) To highlight the problem (s) associated with the existing financial operation of the organization.

(5) To safeguard organization assets, check the accuracy and reliability of its accounting data.

(6) Rendering of an independent opinion on the fairness of an organization's financial representation.

(7) Part-take in the design of Accounting/Audit software packages.

2.3 AUDITING AND AUDITORS

Broadly speaking, auditing is undertaken to increase the reliablility of an accounting/financial information where reliability may be defined as congruence between the messages transmitted and the realities being described. Auditing may take place beneficially whenever a review of information by a party other than the prepare increases the probability that the information accurately reflect what it purports to reflect.

Within the framework of the above definition, many types of information may be audited by different types of auditors. For example, external auditors or Certified public Accountants (CPA) are usually involved in rendering opinions on financial statement of business enterprises. More recently, they have also

been requested by Management, Regulatory agencies and creditors to furnish report on the evaluation of internal control & assist Management in the development of current value information to show the effect of inflation on historical-cost based financial statement.

Internal auditors (who are members of an organization) on the other hand, are typically involved in appraising accounting, financial and operating activities within the organization as a basis for serving management. Such an activity is looked upon as a managerial control function and involves the measurement and evaluation of the effectiveness of controls in the organization.

Furthermore, auditors in the State and Federal Government Parastatals are involved in a variety of audit examinations including income tax examinations, the evaluation of the use of government funds by governmental agencies and organisations contracted by the government and the evaluation of the effectiveness of management in governmental agencies in discharging their agency responsibilities.

2.4 EXTERNAL AND INTERNAL AUDITORS

The determination of whether or not to have an internal audit staff is a top Management decision. However, more and more large organizations have an internal audit staff. Internal auditors normally report to a member of organizational management. A few internal audit departments especially in the

banking and insurance industries report directly to the audit committee of the board of directors. In many other organization, internal auditors have a dual reporting responsibility i.e., the audit committee of the board and the finance director.

The law however, makes it mandatory for public enterprises to engage the services of external auditors to examine their books even if the organization has internal auditors.

In the case of Bank of the North Ltd., the internal audit department is centralized at the Head Office. The internal auditors are sent periodically to the branches to check and validate the reliability of the accounting data and financial statement. At the end of the auditing exercise a report is then forwarded to the audit committee. However daily auditing of the cash book and other postings are carried out by the most senior officers of the branch – usually the manager, Assistant manager and Accountant

2.5 CONTROL REQUIREMENTS, OBJECTIVES AND RESPONSIBILITIES.

The regulatory bodies requires that all companies, organization, State and Federal Government agencies that are subject to the securities exchange keep in reasonable detail "books, records and accounts" which accurately and fairly reflect the organization's transactions and dispositions of assets. Such

companies and organizations must maintain a system of internal accounting controls designed to provide reasonable assurance that:-

- Transactions are executed in accordance with management's general or specific authorization.
- Transactions are recorded as necessary to permit preparation of financial statement in conformity with generally accepted accounting principles and equally to maintain accountability for assets.
- Access to assets is permitted only in accordance with management's general or specific authorization and
- The recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action taken with respect to any differences.

However, the two broad inter-related objectives of internal accounting control are:-

(1) To safeguard assets against loss

(2) To produce reliable financial record for internal use and external reporting purposes.

To make sure that these objectives are achieved, four key groups in the organization should be involved. They includes the Board of Directors or its audit committee, the operating management, internal auditors and the

independent auditors. Assignment of duties and responsibilities will vary among these groups from organization to organization but will generally follow the approach outlined below:-

(A) **ROLE OF THE BOARD OF DIRECTORS/AUDIT COMMITTEE.**

The Board of Directors is responsible for approving basic policies and for compliance oversight, not detailed specification and enforcement. Still, the primary responsibility for the sufficiency of an organization's measures to comply with the requirements of the regulatory bodies lies with the Board of Directors. Hence, the Board or its audit committee is :-

(1) To understand in broad outline how the record keeping and internal accounting control systems function and judge their sufficiency to achieve compliance with the requirements of the regulatory bodies.

(2) To broadly monitor compliance and suggest revision as needed

(3) To review existing policies and consider changes that may be needed.

(B) **ROLE OF OPERATING MANAGEMEN**

Management's primary responsibility for maintaining adequate and effective record keeping and internal accounting control systems and for safeguarding assets is not new. But the Chartered/Certified Public Accountants focuses greater attention on these aspects of management's responsibilities. The audit committee while exercising its oversight responsibilities will look to

operating management for information and to take any necessary corrective action. Hence, the operating management aims at:-

(1) Identifying the risks that are inherent in the business and the potentials for errors and irregularities.

(2) Undertaking in a systematical manner and evaluating existing record keeping practices and systems of internal accounting controls throughout the organisation to identify instances of possible non-conformity with a reasonable interpretation of the policies.

(3) Identifying and articulating the factors considered in assessing the practicality and cost/benefit aspect of suggested systems revision.

(C) **ROLE OF THE INTERNAL AUDITOR**

Internal auditors are an important part of internal control. They can, separately or with operating management, accomplish most of the above. In addition, they:

(1) Monitor compliance with existing policies of operating management or the Board of Directors.

(2) Assist in special studies for operating management or the Board of Directors.

(D) THE ROLE OF THE INDEPENDENT AUDITOR

The independent auditor is not part of an organization's internal accounting control system. He has a unique objective i.e. to from an opinion on the financial statements. This objective causes the independent auditor to plan that examination to search for errors or irregularities that would have a material effect on the financial statement and to use due skills and care in the conduct of the examination. Moreover, the independent auditor is also responsible for evaluating effectiveness and monitoring of compliance of internal accounting control systems parallel to the responsibility of Board and its audit committee.

The independent auditor is in a unique position in that he can make a "hands on" evaluation of the system, an opportunity not readily available to the Board or the audit committee. In addition the independent auditor brings the experience of similar association with systems of other organisations to the evaluation and judgement of problems. As a result, the independent auditor has a unique perspective on the organisation and the Board of Directors and audit committee may find the outside auditor especially helpful in fulfilling their police and oversight duties.

In fact, the independent auditor can assist management in demonstrating compliance with polices by:-

1. Recommending plans for the systematic review, documentation and evaluation of internal controls.
2. Providing instructional manual on methods and techniques for describing, testing and evaluating internal controls.
3. Evaluating the effort of organisation's personal reviewing internal controls.
4. Recommending changes in internal controls to overcome identified deficiencies.

2.6 APPLICATION CONTROL.

Application controls are designed to meet the specific control requirements of each processing application. Application controls contrast with and are complemented by administrative controls and general controls that provide the environment in which the processing takes place. Application controls are designed to ensure that the recording, classification and summarizing of authorized transactions and the updating of master files produce accurate and complete information on a timely basis.

However, processing cycles includes all the procedures in the source and user departments and in the computer department to record and prepare source data & ultimately produce useful information during a given unit of time (such as day, week or Month) predetermined by a schedule. Application controls are

therefore classified into the following:- preventive, detective, or corrective controls.

A point to note when designing controls is that some input errors may be acceptable if they do not cause any interruption in the process of execution. A simple example of this could be a misspelled description of an tem. In deciding on such tolerance limits, it is necessary to compare the cost of correcting an error to the consequences of accepting it.

2.7 APPLICATION CONTROL OBJECTIVES.

Controls are normally classified according to the location of their implementation; input processing and output. However, the location of controls is not important to their evaluation. The auditor's prime concern is the objectives of the control which are to prevent, detect or correct the various application causes of exposure. Since the potential for these causes is always assumed to exist, the objectives of the application controls are hence summarized into five statement:-

1. To assure that all authorized transactions are completely processed once and only once.
2. To assure that transaction data are complete, accurate and protected.
3. To assure that transaction processing is correct and appropriate to the circumstances

4. To assure that processing results are utilized for the intended benefits.

5. To assure that the application can continue to function.

2.8 CLASSIFICATION OF APPLICATION CONTROLS.

In most instances control can be related to multiple exposures. A single control can also fulfil multiple control objectives. For these reasons application controls have been classified according to whether they prevent, detect or correct causes of exposures.

2.8.1 PREVENTIVE CONTROLS

Preventive controls act as a guide to help thing happen as they should. This type of control is most desirable because it stops problems from accuring. Computer application system designers. now put their control emphasis on preventive controls. It is more economical and better for human relation to prevent a problem form occurring than to defect and correct the problem after it has occurred.

Preventive controls include standards, training, segregation of duties, authorization, forms design, prenumbered forms documentation, passwords, consistence of operation and data protection.

2.8.2 DETECTIVE CONTROLS

Detective controls alert individuals involved in a process so that they are aware of a problem. These controls aim at bringing potential problems to the

attention of individuals so that action can be taken. One example of a detective control is a listing of interest calculations for individuals who have not withdrawn up to three (3) times in a month. Such a calculation may be correct or it may be a systems error or even fraud.

Detective controls will not prevent problems from occurring but rather will point out a problem once it has occurred. Examples of detective controls are batch control documents, batch serial numbers clearing accounts, labeling etc.

2.8.3 CORRECTIVE CONTROLS

Corrective controls assist individual in the investigation and correction of causes of exposures that have been detected. These controls primarily collect evidence that can be utilised in determining why a particular problem. Has occurred. Corrective action is often a difficult and time consuming process, however, it is important because it is the prime means of isolating systems problems. Many systems improvements are initiated by individuals taking corrective action on problems.

It should be noted that the corrective process itself is subject to error. Many problems have occurred in organisations because corrective action was not taken on detected problems. Therefore, detective controls are applied to corrective controls. Examples of corrective controls are audit trials, discrepancy reports, error statistics, back up and recovery and data protection.

CHAPTER THREE

3.0 SYSTEM ANALYSIS AND DESIGN

3.1 THE CONCEPT OF SYSTEM ANALYSIS AND DESIGN

System analysis is the process or activities involved in examining an already existing system (manual or computerized system) for a new system to be introduced. It is also defined by another school of taught as the process of an answering question about how the system under investigation actually works. Answering question of course, must be preceded by gathering information.

However, the examination is carried out by system Analysts and with the primary aim of obtaining complete and autentic information which will acquaint the analyst with the knowledge of prevailing situation so that the feasibility of designing an effective computerized system can be known. Hence, System Analysis becomes necessary when there is the need to ascertain the best technique to use computer with its related equipment and resources to perform necessary task which will meet information need of an organization.

3.2 FEASIBILITY STUDY

Feasibility study is the broad study of a system to identify reasons which justifies the development of the new system or favours non-execution of the project. The following factors are mainly considered: -

1. **COST IMPLICATION**

The cost implication tends to look at the financial requirement for successful completion of the project, cutting down all unnecessary expenditure.

2. **SUGGEST SOLUTION TO THE PROBLEMS**

This identify and outline the solution to all identified problems. The solutions are presented in a definite order in which it will be implemented for best result.

3. **TECHNICAL IMPLICATION**

This involves carrying out technical analysis to find out if the new system will work effectively.

4. **ECONOMICAL IMPLICATION**

This tends to verify if it is economically profitable. That is, if carried out, will the project benefit the organization

5. **OPERATIONAL IMPLICATION**

This is concerned with the workability of the proposed information system when developed and installed.

6. POLITICAL IMPLICATION

The idea here, is to study the system from the political point of view. A careful survey is carried out to be sure that the new system will actually be accepted and used.

However, on successful completion of the above mentioned process, a feasibility study report is presented to the management of the organization. If the report favours project execution, the next stage is commissioned and carried out, but if the report did not favour project execution, the project terminates at this stage.

3.3 THE EXISTING OPERATION AT BANK OF THE NORTH

The existing mode of operation at the bank is completely manual. This mean that no computer system or any information technologies tools is in use. Posting of daily transaction is been carried out on the cash book using the pen.

However, auditing (i.e. checking and validating the reliability and accuracy of the Cash Book) the cash book is carried out by the most senior officers of the bank. These officers (Managers or Assistant Managers) Cheek for the accuracy of the posted transaction as against each customer's is transaction (deposit or withdrawal) and their respective balances. External auditors are also sent from the banks headquarters at Kano to cheek the branch accounting data

and the financial statement. At the end of their auditing exercise, the auditors then forward their final report to the audit committee at the head quarters.

3.4 PROBLEMS ASSOCIATED WITH THE EXISTING OPERATION

In furtherance of the objectives of the study and in an attempt to analyze the existing mode of operation, observation and interviews were used as a means of fact finding techniques on the transaction and auditing process. It was gathered that the manual system is associated with a number of problems. Such problems includes: -

- ❖ Inadequate up-dating up-grading facilities
- ❖ Slow processing and transaction retrieval
- ❖ Inadequate data classification capabilities
- ❖ Cumbersome file system-rather very inadequate
- ❖ Easy duplication of records and human error factor.

3.5 POSSIBLE SOLUTION TO THE AFORMENTIONED POBLEMS.

Based on the above mentioned problems associated with the present manual system in use by the bank, it became apparent to ascertain that a computerized means of cash book transaction and auditing software can meet the expected operational goals required. Hence, a customized software package called the **"AUDIT SOFTWARE"** that will be used to check and validate the integrity of the bank Cash -Book posting on daily basis.

The introduction of the use of information technology tools in carrying out the bank's transaction and the inclusion of Audit software in the computer system will reduce or completely eliminate all of the above aforementioned problems.

3.6 REVIEW OF EXISTING SYSTEM AND METHOD OF INVESTIGATION

Having carried out an in-depth analysis of the existing mode of operation, the review of the existing system gives the major techniques from which study facts were gathered. They includes the following

(1) INTERVIEW

In many instances, the best way to obtain critical study facts is to conduct a series of interviews. Interviews is a face to face exchange of information this is concluded at all level concerning what is required and how the requirement can be met. More over, the interview provides an excellent opportunity to establish good rapport with the bank personnel.

(2) QUESTIONAIRES

The questionnaire is a fact-finding tool, which is used to obtain a consensus and identify specific by varying requirements. Unlike in the interview, no immediate opportunity to readdress comments that are vague or unclear is allowed. Tangent comments that might well lead to additional facts or

ideas cannot be followed up. In other words, the questionnaire somewhat restricts channels of communication.

(3) **OBSERVATION**

This is a technique whereby people are observed in the act of executing their jobs. Observation can be used to verify what was revealed in an interview or as a preliminary to the interview. This technique is more meaningful at the technical level of data processing where tasks can be more easily quantified. This technique basically allows us to determine what is being done, how it is being done, what does it, and how long it takes. However, the information gathered from the above (3) method of the investigation were documented and the information flow of the existing system were also reduced to its basic components of Input, processing and output. These components of information were later used for the system design, database design and the logical and physical design of the new system in the next chapter.

3.7 THE NEED FOR AN AUDIT SOFTWARE

The feasibility report shows that the design of customized Audit software will favour the organization. Because of this favour, it is then suffix to design a program that will stand the test of time, that will equally eliminate all of the problems mentioned in the previous chapters. The audit software among others will possess the following features: -

(1) An active user interface

(2) User friendly.

(3) It is year two thousand (Y2K) compliance

(4) Easy to use and understand.

3.8 COST AND BENEFIT ANALYSIS

The cost is the total amount of money needed in order to put the audit software into actual use. The cost is as follows: -

S/No	DESCRIPTION	UNIT	RATE	AMOUNTN
(A)	**DEVELOPMENTAL COST**			
	1. System Analysis and Design for four (4) Weeks	4 Weeks	5,000	20,000.00
	2. Software Development for 3 works	3 Weeks	5,000	15,000.00
	3. Purchase of complete computer system (Compaq).	4	239.000	230,000.00
	4. Installation	lot	35,000	35,000.00
	Personnel training (40 staff) for four (4) weeks	lot	5,000	50,000.00
	Total on item (A)			350,000.00
(B)	**OPERATING COST**			
	1. Supplies of computer Accessories and stationeries	Lot	Lot	50,000.00
	2. Equipment Maintenance	Lot	Lot	120,000.00
	3. Application software (as may be required	Lot	Lot	45,000.00
	4. Labour lost	Lot	Lot	85,000.00
				300,000
	GRAND TOTAL (A) + (B)			650,000.00

BENEFIT ANALYSIS

The audit software will ensure timely and accurate production of cash book transaction posting and account data report that will enable the management to take proper decision as regards accuracy of the bank financial statement. Other benefit includes the following: -

1. Comprehensibility – This refers to the ease with which relevant users can understand what the system is doing and how it functions
2. Convenience – This is the simplicity, efficiency and reliability with which the system is operated.
3. Adaptability – This is the extent, efficiency and ease with which the system can be adjusted to meet the changing needs of particular users or various users.
4. Precision – This refers to the avoidance of ambiguity in information content and necessary user actions.
5. Tolerance – This refers to the degree to which the system is tolerant to users making slight variation and errors in interaction.
6. Helpfulness – This is the amount of support given to assist users in performing required tasks.
7. Friendliness – This refers to the politeness of messages and dialogues.

Going by the above benefits, the audit software will justify the expenses of designing the system, purchase of complete system and installation.

CHAPTER FOUR

4.0 PROGRAMMING AND IMPLEMENTATION.

4.1 THE DESIGN OF THE PROPOSED SYSTEM.

For a system to perform well, it has to accomplish its operational objective. The design of the proposed system identifies the programs required to accomplish the process.

The proposed system has been designed to be conversational with a strong user interface (i.e. user friendly and menu driven). The main menu system that is "AUDIT SOFTWARE" contain four (4) options, each of which can be activated by the use of UP and DOWN arrow key or by pressing the first letter of each option. The general format of the main menu system is as shown below:-

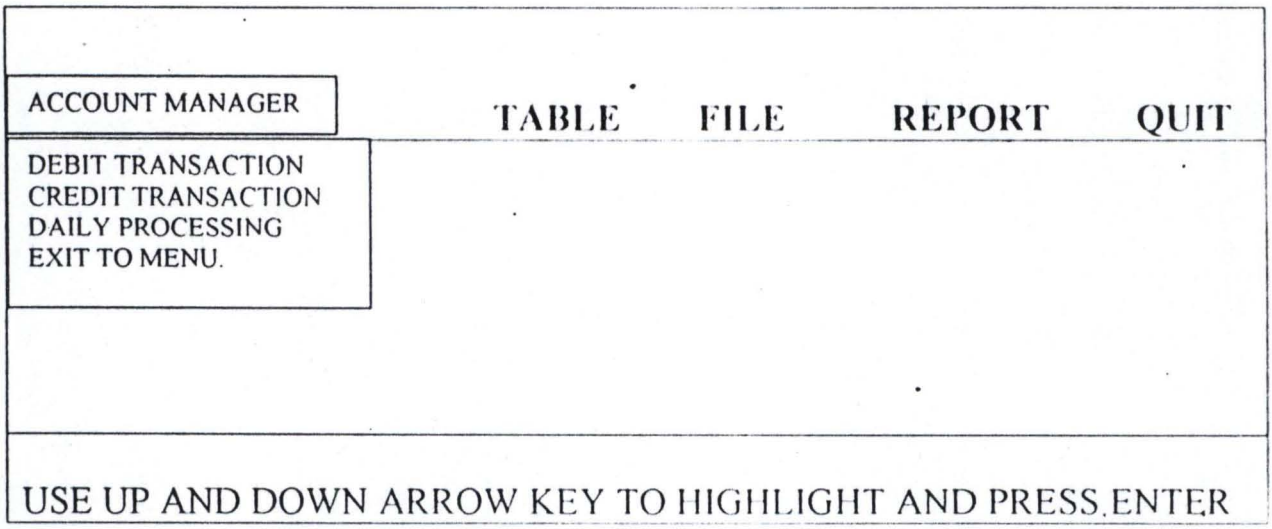


FIG. 1.0 Main menu system.

(A) ACCOUNT MANAGER.

This option is activated or highlighted by the use of the UP and DOWN arrow keys or by pressing the first letter of the desired option and the concerned module is then activated. However, the account manager is used to either enter debit transaction, credit transaction, daily processing or otherwise exit to menu of the system. On pressing the ENTER KEY on the account manager, a sub-menu is displayed as shown below: -

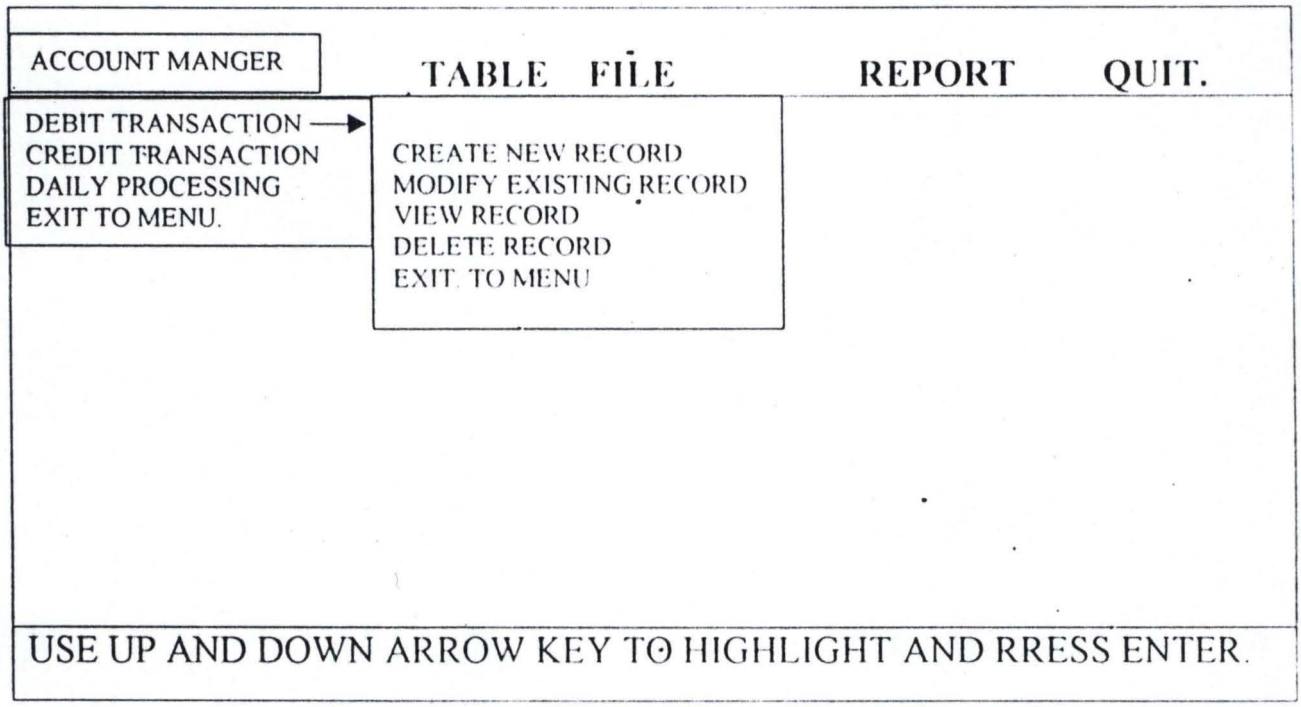


Fig 2.0 ACCOUNT MANAGER.

(1) DEBIT TRANSACTION.

The debit transaction is the first option of the account manager. It allow customers of the bank to debit their account thereby reducing the amount of

money a customer have. On pressing the ENTER Key on debit transaction, it display another sub-menu that allow end-user/ operator to either create new record, modify existing record, view record, delete obsolete /unwanted record or exit to menu.

(2) **CREDIT TRANSACTION.**

This is the second option of the account manager. It allow customers of the bank to credit their account thereby increasing the amount of money a customer have. The structure of this option is similar to that of debit transaction. On pressing the ENTER KEY on the credit transaction, a sub-menu is displayed as shown above in Fig 2.0 This option allow creating of new record, modification of an existing record, viewing of record, deletion of unwanted record or exit to menu.

(3) **DAILY PROCESSING.**

Since the essence of the audit software is to cheek and validate the realiability of the cash book posting on a daily basis, this option allows daily processing of all posted transactions. At the end of the processing, reports are then generated to compare the balances of each customer from the audit software with that of manual entries. However, unlike, the debit and credit transaction that have sub-menu, the daily processing does not have a sub-menu. Hence, on pressing the ENTER KEY on it, displays two (2) options (i.e.

software with that of manual entries. However, unlike, the debit and credit transaction that have sub-menu, the daily processing does not have a sub-menu. Hence, on pressing the ENTER KEY on it, displays two (2) options (i.e. commence processing and Abadon). The format of this option is as shown below in Fig 3.0

(4) **EXIT TO MENU.**

This is a common option in the audit software. On pressing the ENTER KEY, it clears the system screen and return to the previous menu option.

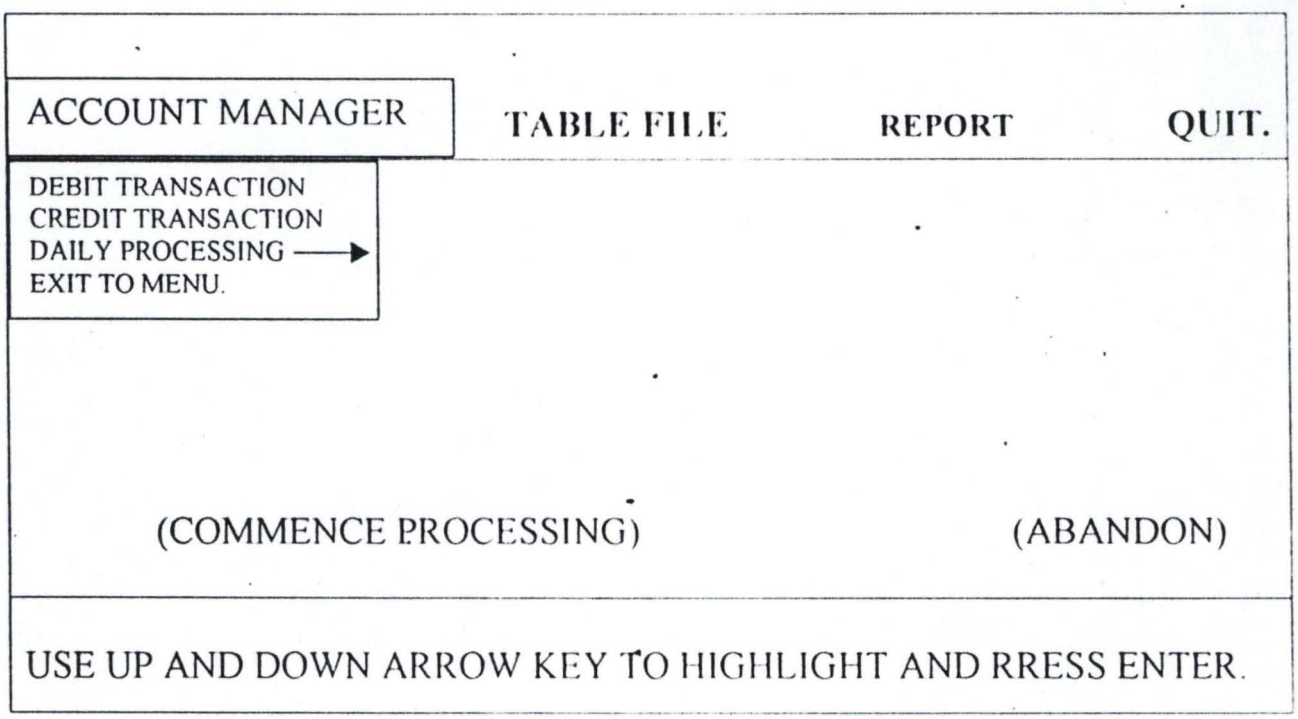


Fig 3.0 Daily processing.

(B) **TABLE FILE**

This is the second option of the main menu system of the audit software. It allow end-users /operator to predefine certain information which are unlikely to change and are necessary for the updating of the account manager options master files). The format is show below in Fig 4.0

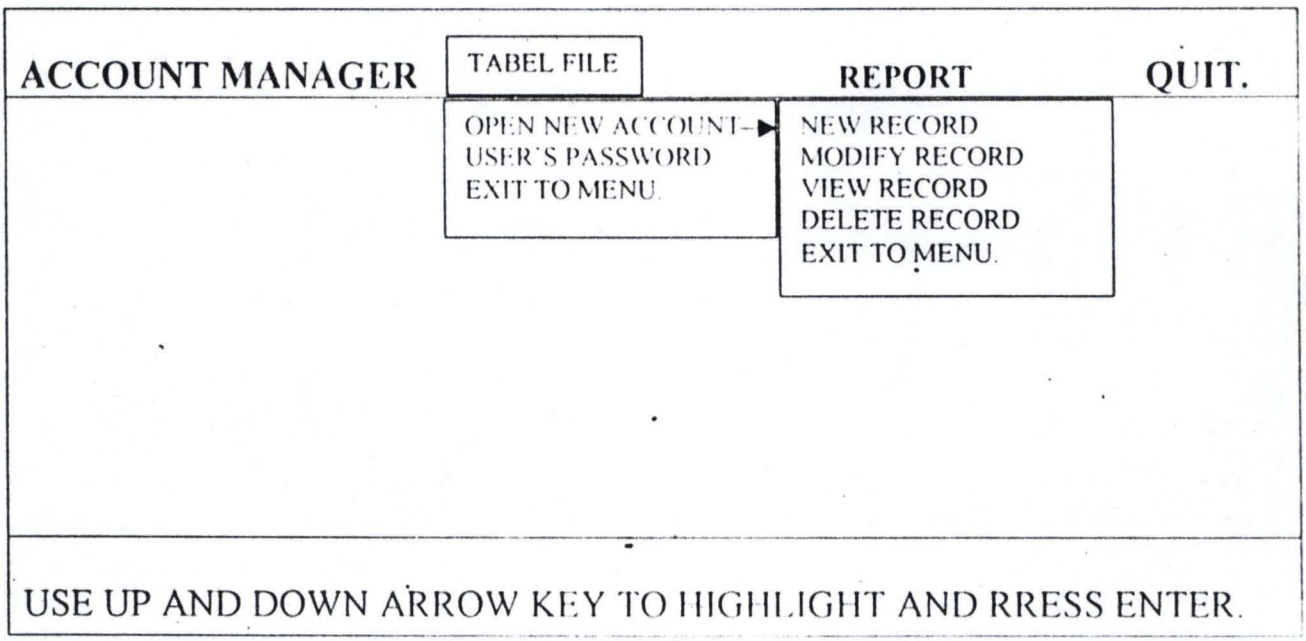


Fig 4.0 Table file menu.

(1) **OPEN NEW ACCOUNT**

This is the first option of the table file menu. It enable end users/ operators to create new bank account number for their customers. On pressing the ENTER KEY, it displays another sub-menu option that allow creation of

new record, modify existing record, view record, delete obsolete unwanted record or exit to menu.

(2) **USER'S PASSWORD**

This option allows the banks management to create user's password. This mean that only authorized personnel with unique password will be allowed to use the system.

The general format of the above (2) options is as shown in fig 4.0

(C) **REPORT**

This is the third option of the audit software menu. On pressing the ENTER KEY on it, it displays a submenu option that contain varieties of report that can be generated from the audit software. The reports that can be generated includes the following:-

(1) Customer's Balance.

(2) List of debit transaction by Date

(3) List of credit transaction by Date

(4) Individual Statement of Account.

(5) Cash Book Posting.

The format of the report option is as shown below in figure 50.

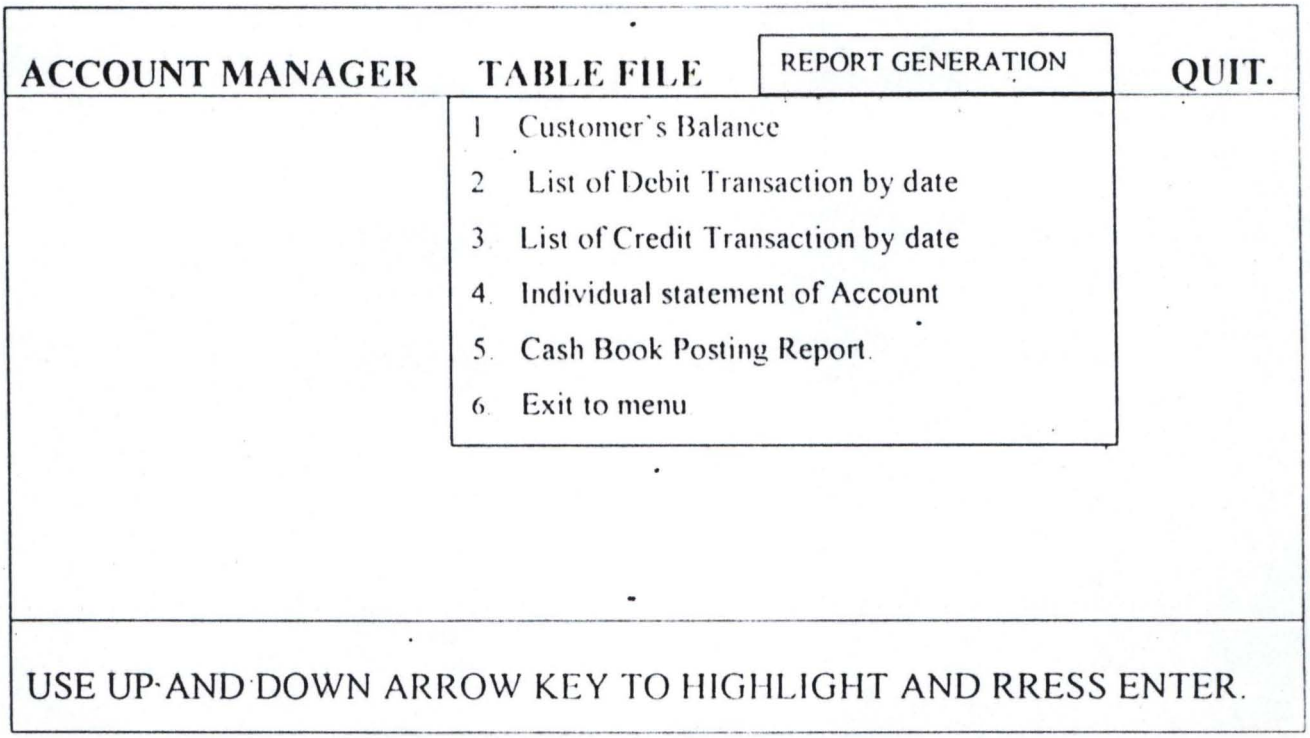


Fig 5.0 Report Generation

(D) **QUIT**

This is the last option of the audit software. On pressing the ENTER KEY on it, it first closes all activated data base files, clear the computer screen and then return to the dos-prompt of the computer.

Apart from the above pictorial design and explanation of the system design, this chapter also deals with the transformation of information gathered in the system analysis stage into logical and physical design of the new or improved system. It explain the features of the system in terms of input and

output specification, database files design, choice of programming language and it features. It also contain the program (code) that would be used to achieve the physical design of the specifications.

4.2 OUTPUT SPECIFICATION.

The output specification otherwise known as report generation gives an overview of the expected processed result. The output specification also known as report are generated as a result of the data entries that was made via the use of the input devices (keyboard). These results (output /Reports) are necessary in order to check whether the proposed system that was developed is producing the expected output. That is the result of the manual calculation and those of the new system are the same. Below are few of the output specification:-

APPLICATION OF COMPUTER TO AUDIT AND CONTROLS

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Date:- **Customers Balance** **Time: -**

S/No	ACCOUNT NUMBER	CUSTOMER'S NAMES	TOTAL CREDIT	TOTAL DEBIT	BAL

Fig 6.0 Customer is Balance.

APPLICTION OF COMPUTER TO AUDIT AND CONTROL

(A case study of Bank of the North Ltd. Minna Branch Cash Book Posting)

Date:- **Debit Transaction by Date** **Time:-**

S/No	VOUCHER NUMBER	ACCONUT NUMBER	CUSTOMER'S NAME	TRANS. DATE	DEBIT AMOUNT	BAL

Fig 7.0 Debit transaction by Date.

APPLICATION OF COMPUTER INTO AUDIT AND CONTROLS

(A case study of Bank of the North Ltd. Minna Branch Cash Book posting)

Date: - **Credit Transaction by Date** **Time:-**

S/No	VOUCHER NUMER	ACCOUNT NUMBER	CUSTOMER'S NAME	TRANS. DATE	CREDIT AMOUNT	BAL

Fig 8.0 Credit Transaction by Date.

4.3 INPUT SPECIFICATION

The input specification is an avenue where the proposed develop system and the end users interact via the use of the available input devices especially the keyboard. Below are few among the input specification.

APPLICTION OF COMPUTER TO AUDIT AND CONTROLS

(A case study of Bank of the North Ltd. Minna Branch cash book posting).

Date:- **Opening of New Customer Account Number.** **Time:-**

REG. DATE	ACCOUNT NUMBER	ACCOUNT DESCRIPTION	NAME

Fig 9.0 Opening Account Data Entry.

APPLICATION OF COMPUTER TO AUDIT AND CONTROLS

(A case study of Bank of the North Ltd. Minna Branch cash Book posting)

Date: - **Password Data Entry Screen** **Time: -**

REG DATE	ID-CODE	NAME	PASSWORD

Fig 10.0 User's password Data Entry screen.

4.4 DATABASE FILE USED.

Database file used gives an in-depth analysis of the files used. This analysis includes the physical structure of the database file. Below are the database of files used in the audit software.

(1) TRANS. DBF.

The transaction database file, contains details of daily bank transaction. The structure is as shown below:-

S/NO	FIELD NAME	TYPE	WIDTH
1.	REGDATE	DATE	8
2.	REG TIME	CHR	8
2.	ACCTNUMBER	CHR	5
4.	ACCTNAME	CHR	30
5.	DEBIT	NUM	14, 2
6.	CREDIT	NUM	14, 2
7.	TRANS-TYPE	CHR	1
8.	BALANCE	NUM	14, 2

(2) **CURRENT DBF.**

This database file is used to update the transaction database file on a daily basis.

S/No	FIELD NAME	TYPE	WIDTH
1.	DATE PRO	DATE	8
2.	ACTION	CHR	1

(3) **ACCONT. DBF**

The account database file, contain details of all bank accounts number. The structure of the database file is as shown below:-

S/No	FIELD NAME	TYPE	WIDTH
1.	ACCT NUMBER	CHR	5
2.	PARTICULAR	CHR	30

4.5 CHOICE OF PROGRAMMING LANGUAGE AND ITS FEATURES

The choice of programming language is dbase IV and clipper 5.0. These programming languages are good examples of database management system (DBMS).

However, the choice of the programming language is because of the following features:-

1. Dbase IV and clipper 5.0 have the capabilities to hold record/data as a single large collection of information that allows deleting existing records without changing all the application programs that refers to that data.
2. They possess the ability to categorize, sort, store and report information.
3. With Dbase IV and clipper 5.0, data integration is achieved, redundancy is reduced or eliminated, independence of data can be achieved and data integrity can be maintained and are centrally controlled.
4. The two (2) applications are easy to use and understand.
5. It is easy to develop (user friendly programs) hence data entry and updating can be easily performed.

6. It is easy to make correction.

7. With CLIPPER 5.0, program can be easily compiled to executable file, thereby making the proposed system to be run independent of the dbase IV application.

4.6 PHYSICAL AND LOGICAL DESIGN OF THE SYSTEM.

This is where all the analysis carried out and the pictorial design of the new system are transformed to both logical and physical instruction called coding or program which are later translated to machine-readable instruction by the computer. If the logical design is sound and the design documentation (flow chart, pseudcode, e.t.c) is thorough, the coding process is relatively straight forward.

However, coding the new system is important to ensure that the actual programs produced performed all the tasks intended and to allow for future modification to be performed in an efficient manner and with no or minimum destruction to the design of the system.

4.7 SYSTEM IMPLEMENTATION

System implementation involves the co-ordination of all the task which are necessary in ensuring the operation of the new system. System implementation is the stage of system development when the conceptional

requirement of the new system and the aver all objectives are to be transformed into physical reality.

However, this stage is an important stage in achieving a successful new system and in giving the users confidence that the new system will work and be effective. The system implementation is a broad term that comprises of the following; hardware and software requirement, system testing, installation and changeover procedures. Each of these are discussed in the later section of this chapter.

4.8 HARDWARE AND SOFTWARE REQUIREMENTS

In order to implement the audit software certain component of the computer need to be acquired. These components will be needed in order to make maximum utilization of the audit software as well as the computer.

HARD WARE REQUIREMENT.

This includes all the physical components of the computer system and it accessories. Specifically a system with the following minimum features will be needed.

A Complete Computer System with the Below Capacity:

- PENTIUM 300 MHZ CELERON INTEL
- 32 MB RAM
- 4.1 GB HDD

- 36 X CD – ROM DRIVE + 2 No. SPEAKERS
- 3.5" FDD
- SUGA 14" MONITOR
- WINDOWS 95 KEYBOARD
- MICROSOFT MOUSE

UN-INTERUPTED POWER SUPPLY (UPS)

STABILIZER (AVR).

SOFTWARE REQUIREMENT.

Since the computer system acquired is not only going to be used for Audit software only, then it is important to install those software that will help the bank personnel to build themselves, and for other official documentation.

Hence, the software requirement will include the following:-

- OPERATING SYSTEM SOFTWARE
- WINDOWS 95 OR 98
- MICROSOFT DISK OPERATING SYSTEM (MSDOS)
- AUDIT SOFTWARE
- OFFICE 97
- MS – WORD
- MS – EXCEL
- MS – POWER POINT

- MS - ACCESS
- LOTUS 1-2-3 FOR WINDOWS
- WORD-PERFECT 6.1 FOR WINDOWS
- DATABASE MANAGEMENT PACKAGE
- DBASE IV
- CLIPPER 5.0
- FOXPRO 2.0

4.9 SYSTEM INSTALLATION

System installation is the process of transferring the design system (audit software) from the floppy disk to a permanent storage device called the hard disk. However, to install the audit software, the following procedures are to be taken.

STEPS	PROCEDURES	FORMAT	RESULT
1	At MS-DOS prompt of drive C, create a directory called {AUDIT}	C:\>MD AUDIT ENTER	Audit directory Created
2.	Change the default directory to {AUDIT}	C:\>CD AUDIT ENTER	C:\AUDIT)>
3.	Insert the source diskette containing the audit software into drive A and make drive A the default drive.	C:\AUDIT} A:ENTER	A:\>
4.	Copy all the files in drive A into drive C, using the copy command and astericks.	A:\> COPY * * C: ENTER	All files copied to drive C.
5.	Change default drive to C	A:\> C: ENTER	C:\AUDIT >
6.	Type AUDIT to commence testing of program	C:\AUDIT> ENTER	WELCOME TO AUDIT SOFTWARE

4.10 SYSTEM TESTING

System testing is often seen as a means of establishing that a program is error free and that it does what is required. This is a very dangerous point of view. It is virtually impossible to test a program so thorough that it can be claimed to be free of errors. In most cases, fixing one error gives rise to a host of others which in turn have to be corrected and exhaustively tested. It is much more realistic to think of testing as a "process of finding errors"

However, when a stage is reached when the program appears to run perfectly, this does not mean that there are no more errors in the program. It simply means that those errors have not been discovered. Hence, the audit

software has been fully test run with raw data, irrespective of people and environment and was found to be error free for now.

4.11 CHANGEOVER PROCEDURES:

Once all the planned testing procedures have green completed satisfactory, the developed system can be handed over and changeover from the old to the new developed system.

There are several ways of carrying out the changeover, the method chosen will depend on such factors as the type of system that is being installed with preference to the establishment involved. The changeover will require careful planing on the part of both the developer and the organization to ensure maximum efficiency and minimum disruption to the normal working of the concerned organisation.

Given the above four (4) methods of changeover, staged changeover is choosen for the audit software because of the following reasons:-

(1) The audit software is installed gradually, so that the concerned organisation, that is Bank of the North limited, can become accustomed to one area of the package before the next stage.

(2) In staged changeover, part of the system can be (and often is) installed before the rest of the system is completed. This gives the opportunity of valuable feed back from the users while the system is being developed. It

also takes some of the pressure off the developer since small parts of the system can be delivered when they are ready without waiting for completion of the whole system.

However, the following are the various types of changeover that is common:-

1. Parallel changeover – In this type of changeover procedure, the old and new systems are run concurrently using the same input. The output are compared and reasons for differences resolved. This process continues until the new system proves satisfactory and then the old system gives way to the new.
2. Direct changeover under this procedure, an entire new system is installed and the old system dismantled immediately.
3. Pilot changeover – here, the changeover involves the charging over of part of the old system either parallel or directly. One subsystem is chosen as the lead system and implemented, before all others. Only when that sub-system is completely operational can conversion of the next system be considered,
4. Staged changeover – This is a gradual systems conversion. In this implementation, components of the new system are implemented one at a time into the old system, the old system being phased out in piecemeal.

CHAPTER FIVE

5.0 GENERAL SUMMARY AND CONCLUSION

5.1 SUMMARY

In the past, the cornerstone of accounting controls has been segregation of duties. This concept made sense not only for control, but also for good work performance. As an organization grow in size and in business, so the number of the different tasks increased.

The increase in the number of customers of Bank of the North Ltd. day after day brought about the call for the application of computer in their daily banking transaction as well as in the area of audit and controls. This is however necessary in order to check the reliability and to increase the accountability of the Bank's accounting data and their financial statement and to as well reduce and burden of the internal auditors of the bank.

Furthermore, the software developed, that is the audit software has an in-built control that will, to an extent, safeguard the integrity of the cash book data that are posted on daily basis and also allow for output comparisons. Specifically, the following detective controls were used and implemented. The include:-

(1) Data Transmission.

(2) Control Register.

(3) Control Totals

(4) Documentation and testing

(5) Labels

(6) Output Checks.

The audit software was fully tested using each of the above stages of detective controls one after the other. Hence, the system have proved to be perfectly effective with high speed.

5.2 CONCLUSION

The use of personal computer in the selection of good and well-designed software have received increased attention in recent years. Also, the continous substitution of the computer based systems for normal procedures has, in modern days become a world wide affair. This is due to its relevance in virtually all aspects of human endeavour. This interest is intensified by the capability of computer in performing a given set of procedure with all the necessary accuracy. It is not subjected to committing errors and its ability to accomplish any task with high speed and within a reasonable time makes it applicable in recent time.

On the other hand, the mass production of computers with its relative low demand, has indeed set the price of computers coming down. I therefore suggest and conclude for the real implementation of the "AUDIT SOFTWARE" which

is a computer based program that is year two thousand compliant (Y2K). Hence, come year 2000 the audit software will work perfectly well.

5.3 RECOMMENDATION

Going by the computer operations from the application programs and customized software perspective, it does substantially appear that no meaningful computerization or computer operation can take place without data being manipulated in one way or the other.

That a computer machine is a powerful and wonderful system is based on its ability to process data fast and accurately. It is because of this reason that we recommend the following for Bank of the North Ltd.

(1) The use of computer and computer based program (Banking software) for their daily transaction.

(2) We recommend for the actual implementation of Audit software.

(3) With time, the audit software can be networked in order to decentralized the jobs internal auditors.

(4) We recommend that the Bank's personnel should be allowed to undergo manpower computer training.

REFERNCES

1 ACCA Students' Newsletter, August 1988. (The chartered Association of Certified Accountants).

2 Donald, H. Sanders 1982. Computers in Business. An introduction. (McGraw Hill International Book company).

3 Henry, C. Lucas, Jr. 1985. The Analysis, Design and Implementation of information system 3rd Edition (McGraw Hill Book company-Singapore)

4 Lawrence, S. Orilia. 1987. Introduction to Business Data Processing 2nd Edition (McGraw Hill Kogakusha Ltd.)

5 Shelley, J and Hunt, R. 1989. Computer students. A first course (Pitman Publishing Ltd. Division of Longman Group U.K)

6 The Nigerian Accountant. January/March, 1992. (The Official Journal of the Institute of Chartered Accountants of Nigeria).

7 Wole, Adewunmi and Titi, A. 1988. Computers in Banking (Nigerian Institute of Bankers – Lagos Branch) – Landmark Publications Ltd.

APPENDIX

*TOPIC : **APPLICATION OF COMPUTER TO AUDIT AND CONTROLS**
(A Case Study of Bank of the North Cash Book, Minna Branch)

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Set Talk off
Set Echo off
Set Bell off
Set Stat off
Set Scor off
Set Safe off
Set Conf off
Set Esca off
Set  Wrap on
Set Proc To Clap
Set Century On
Set date to brit
Private Sc – hpop  // Saves horizontal popup
Clear
X= inkey (2)
Set Color to W+/br, ,
@ 00,00 Clear to 05,79
@ 00,00 to 05,79 Color "W+/r"
BON1=" APPLICATION OF COMPUTER INTO AUDIT AND CONTROLS"
BON2="( A Case Study of Bank of the North Cash Book, Minna Branch)"
BON3="MINNA, NIGER STATE"

@ 01,(80-Len(BON1)/2 say BON
@ 02,(80-Len (BON)./2 say BON


Do while. t.

@21, 08 clea to 23, 71
@21, 08 to 23,71
@22, 10 say 'USE " +chr(25)+' or '+chr(24)+' Key  to highlight option & Press
'+chr (17)+chr (196)+chr(217)+' Key to Select'
@04, 01 Prompt " ACCOUNT MANAGER"
@04, 20 Prompt  "CODE  MANAGEMENT"
@04, 40 Prompt  "REPORT"
@04, 55 Prompt  "UTILITY"
@04, 70 Prompt  "EXIT"
```

```
menu to ch1
Save screen to sc_hpop
Do case
  case ch1 = 1
     do AM
  case ch1 = 2
     do CM
  case ch1 = 3
     do REPorter
  case ch1 = 4
     do UTY
  othe
     exit
Endcase
Restore Screen from sc_hpop
Enddo
clear
@23,01 say "AUDIT SOFTWARE, Undergoes Normal Shut Down...!!!"
Return

*-------------------------------------------------------------------------------------------------------------
Procedure AM
private sc_vpop
Do while .t.
Set color to w+/b
@ 06,00 clear to 14,24
@ 06,00 to 14,24

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 07,1 prompt " Debit Transaction....»"
@ 09,1 prompt " Credit Transaction...»"
@ 11,1 prompt " Monthly Processing...»"
@ 13,1 prompt " Exit Main Menu....."

menu to fchoice
Save screen to sc_vpop
Do case
  CASE fchoice = 0
     loop
  case fchoice = 1
     do debit
  case fchoice = 2
```

```
      do credit
  case fchoice = 3
      do process
  othe
      exit
Endcase
clea
Restore Screen from sc_vpop
Enddo
Return
*-------------------------------------------------------------------------------------------------------------
Procedure debit
Do while .t.
Set color to w+/b
@ 08,25 clear to 18,44
@ 08,25 to 18,44

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 09,26 prompt " Creat New File.."
@ 11,26 prompt " Modify File....."
@ 13,26 prompt " View File......."
@ 15,26 prompt " Delete File....."
@ 17,26 prompt " Exit Menu......."

menu to ch2
Save screen
Do case
  case ch2 = 0
      loop
  case ch2 = 1
      do cdebit
  case ch2 = 2
      do mdebit
  case ch2 = 3
      do vdebit
  case ch2 = 4
      do ddebit
    other
      exit
Endcase
Rest Screen
Enddo
```

```
Return
*-------------------------------------------------------------------------------------------------------------

Procedure credit
Do while .t.
Set color to w+/b
@ 08,25 clear to 18,44
@ 08,25 to 18,44

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 09,26 prompt " Creat New File.."
@ 11,26 prompt " Modify File....."
@ 13,26 prompt " View File......."
@ 15,26 prompt " Delete File....."
@ 17,26 prompt " Exit Menu......."

menu to bchoice
Save screen
Do case
  case bchoice = 1
     do ccredit
  case bchoice = 2
     do mcredit
  case bchoice = 3
     do vcredit
  case bchoice = 4
     do dcredit
  case bchoice = 0
     loop
  other
     exit
Endcase
clea
Restore Screen
Enddo
Return
*-------------------------------------------------------------------------------------------------------------
Procedure CM
private sc_vpop
Do while .t.
Set color to w+/b
@ 06,20 clear to 12,44
```

```
@ 06,20 to 12,44

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 07,21 prompt " Account Code.....»"
@ 09,21 prompt " Users Password.....»"
@ 11,21 prompt " Exit Main Menu....."

menu to fchoice
Save screen to sc_vpop
Do case
  CASE fchoice = 0
     loop
  case fchoice = 1
     do coder
  case fchoice = 2
     do users
  othe
     exit
Endcase
clea
Restore Screen from sc_vpop
Enddo
Return
*-----------------------------------------------------------------------------------------------------------

Procedure coder
Do while .t.
Set color to w+/b

@ 08,45 clear to 18,63
@ 08,45 to 18,63

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 09,46 prompt " Creat New File.."
@ 11,46 prompt " Modify File....."
@ 13,46 prompt " View File....."
@ 15,46 prompt " Delete File....."
@ 17,46 prompt " Exit Menu....."
```

```
menu to tchoice
Save screen
Do case
  case tchoice = 1
      do ccoder
  case tchoice = 2
      do mcoder
  case tchoice = 3
      do vcoder
  case tchoice = 4
      do dcoder
  case tchoice = 0
      loop
  other
      exit
Endcase
Restore Screen
Enddo
Return
*-----------------------------------------------------------------------------------------------------------

Procedure users
Do while .t.
Set color to w+/b

@ 08,45 clear to 18,63
@ 08,45 to 18,63

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 09,46 prompt " Creat New File.."
@ 11,46 prompt " Modify File....."
@ 13,46 prompt " View File......."
@ 15,46 prompt " Delete File....."
@ 17,46 prompt " Exit Menu......."

menu to tchoice
Save screen
Do case
  case tchoice = 1
      do cusers
  case tchoice = 2
      do musers
```

```
  case tchoice = 3
     do vusers
  case tchoice = 4
     do dusers
  case tchoice = 0
     loop
  other
     exit
Endcase
Restore Screen
Enddo
Return
*-------------------------------------------------------------------------------------------------------------

Procedure reporter
private sc_vpop
Do while .t.
Set color to w+/b
@ 06,39 clear to 16,71
@ 06,39 to 16,71


@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'

@ 07,40 prompt " 1. Report on General Ledger..."
@ 09,40 prompt " 2. Report on Trial Balance...."
@ 11,40 prompt " 3. Report on Balance Sheet...."
@ 13,40 prompt " 4. View Balance....."
@ 15,40 prompt " 5. Exit Main Menu....."

menu to fchoice
Save screen to sc_vpop
Do case
  CASE fchoice = 0
     loop
  case fchoice = 1
     do rep1
  case fchoice = 2
     do rep2
  case fchoice = 3
     do rep3
  case fchoice = 4
```

```
      do rep4
  othe
      exit
Endcase
clea
Restore Screen from sc_vpop
Enddo
Return
*-----------------------------------------------------------------------------------------------------------

Procedure UTY
private sc_vpop
Do while .t.
Set color to w+/b
@ 06,55 clear to 16,77
@ 06,55 to 16,77

@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Use '+chr(25)+' or '+chr(24)+' key to highlight option & press
'+chr(17)+chr(196)+chr(217) +' key to select'
@ 07,56 prompt " Introduction.....»"
@ 09,56 prompt " Backup Files.....»"
@ 11,56 prompt " Restore Files.....»"
@ 13,56 prompt " Empty Databases....»"
@ 15,56 prompt " Exit Main Menu....."

menu to fchoice
Save screen to sc_vpop
Do case
  CASE fchoice = 0
      loop
  case fchoice = 1
      !attrib +r intro.txt
      !edit intro.txt
  case fchoice = 2
      do bf
  case fchoice = 3
      do RFile
  case fchoice = 4
      do empty
  othe
      exit
Endcase
clea
```

```
Restore Screen from sc_vpop
Enddo
Return
*------------------------------ PROCEDURE EMPTY.PRG --------------------------------
proc empty
@21,08 clear to 23,71
@21,08 to 23,71
do while .t.
  xans=" "
  @22,15 say 'Proceed With Cleaning of Database Files [Y/N] 'get xans pict "!"
  read
  if xans="Y" .or. xans="N"
    exit
  endif
enddo
  if xans="N"
    clea
    close all
    return
  endif
@21,08 clear to 23,71
@21,08 to 23,71
@22,10 say 'Please Wait, Cleaning of Database Files in Progress...!!!'
x=inkey(3)
set curs off
use
  sele 1
      use coder
      zap
  sele 2
      use trans
      zap
  sele 3
      use password
      zap
  use
set curs on
return
*------------------------------ PROCEDURE ccoder.prg --------------------------------
proc ccoder
clear
set color to w+/b
set proc to header
do head
subh="Registration of New Account Code for Account Transaction"
```

```
@05,(80-len(subh))/2 say subh

 use CODER
 index on acctcode to acctcode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "ACCOUNT CODE"
  @07,43 say "ACCOUNT NAME\DESCRIPTION"
  I = 1
 Do while .t.
   *----------------------- Initialization of Variables-------------------
   xregdate=dtoc(date())
   xregtime=time()
   xacctcode=space(05)
   xacctname=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER ACCOUNT CODE or Press Enter Key on acct Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      @ 08+I,29 get xacctcode pict "99999"
      read
      if xacctcode=space(05)
        clear
        close all
        return
      endif
      go top
      seek xacctcode
      if found()
        fb="ACCOUNT CODE ALREADY EXIST, Press Any Key To Retry"
        @23,02 clea to 23,77
        @23,(80-len(fb))/2 say fb
        set cons off
        wait " "
        @23,02 clea to 23,77
        xacctcode=space(05)
        loop
      endif
      exit
    enddo
```

```
do while .t.
  @ 08+I,43 get xacctname pict "@!"
  read
  if xacctname=space(30)
    @23,02 clea to 23,77
    fb="ACCOUNT NAME CANNOT BE EMPTY. Press Any Key To Retry"
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    loop
  endif
  exit
 enddo

 @22,02 clea to 23,77
 set proc to saver
 do boye
   x=0
   do while x=0
    x=inkey()
    if upper (chr(x)) $ "SRA"
      exit
    endif
      x=0
   enddo
    if upper (chr(x)) $ "R"
      @08+i,03 clea to 19,77
      @22,02 clea to 23,77
      fb="ENTER ACCOUNT CODE or Press Enter Key on Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      loop
    endif
    if upper (chr(x)) $ "A"
      clear
      close all
      return
    endif
   appen blank
   repl regdate   with (ctod(xregdate))
   repl regtime   with xregtime
   repl acctcode  with xacctcode
   repl acctname  with xacctname
   i =i+2
```

```
        @22,02 clea to 23,77
        loop
          Else
       I=1
Endif
Enddo
retu

*----------------------------- PROCEDURE mcoder.prg -------------------------------
proc mcoder
clear
set color to w+/b
set proc to header
do head
subh="Modification of Registered Account Code"
@05,(80-len(subh))/2 say subh

 use CODER
 index on acctcode to acctcode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "ACCOUNT CODE"
  @07,43 say "ACCOUNT NAME\DESCRIPTION"
  I = 1
 Do while .t.
   *----------------------- Initialization of Variables-------------------
   xregdate=dtoc(date())
   xregtime=time()
   xacctcode=space(05)
   xacctname=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER ACCOUNT CODE or Press Enter Key on acct Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      @ 08+I,29 get xacctcode pict "99999"
      read
      if xacctcode=space(05)
        clear
        close all
        return
```

```
  endif
  go top
  seek xacctcode
  if .not. found()
    fb="ACCOUNT CODE DOES NOT EXIST. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    xacctcode=space(05)
    loop
  endif
  xacctname=acctname
  @ 08+I,43 get xacctname pict "@!"
  clea gets
  exit
enddo
@22,02 clea to 23,77
set proc to saver
do jara
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "MRA"
     exit
   endif
     x=0
  enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER ACCOUNT CODE or Press Enter Key on Code to Exit"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     loop
   endif
   if upper (chr(x)) $ "A"
     clear
     close all
     return
   endif
do while .t.
  @ 08+I,43 get xacctname pict "@!"
  read
```

```
 if xacctname=space(30)
   @23,02 clea to 23,77
   fb="ACCOUNT NAME CANNOT BE EMPTY. Press Any Key To Retry"
   @23,(80-len(fb))/2 say fb
   set cons off
   wait " "
   @23,02 clea to 23,77
   loop
 endif
 exit
enddo

@22,02 clea to 23,77
set proc to saver
do boye
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "SRA"
     exit
   endif
     x=0
  enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER ACCOUNT CODE or Press Enter Key on Code to Exit"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     loop
   endif
   if upper (chr(x)) $ "A"
     clear
     close all
     return
   endif
  repl regdate   with ctod(xregdate)
  repl regtime   with xregtime
  repl acctcode  with xacctcode
  repl acctname  with xacctname
  i =i+2
   @22,02 clea to 23,77
   loop
     Else
  I=1
```

```
Endif
Enddo
retu

*---------------------------- PROCEDURE vcoder.prg ------------------------------
proc vcoder
clear
set color to w+/b
set proc to header
do head
subh="Viewing of Registered Account Code"
@05,(80-len(subh))/2 say subh

 use CODER
 index on acctcode to acctcode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "ACCOUNT CODE"
  @07,43 say "ACCOUNT NAME\DESCRIPTION"
  I = 1
 Do while .t.
   *---------------------- Initialization of Variables------------------
   xregdate=dtoc(date())
   xregtime=time()
   xacctcode=space(05)
   xacctname=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER ACCOUNT CODE or Press Enter Key on acct Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      @ 08+I,29 get xacctcode pict "99999"
      read
      if xacctcode=space(05)
        clear
        close all
        return
      endif
      go top
      seek xacctcode
      if .not. found()
```

```
   fb="ACCOUNT CODE DOES NOT EXIST, Press Any Key To Retry"
   @23,02 clea to 23,77
   @23,(80-len(fb))/2 say fb
   set cons off
   wait " "
   @23,02 clea to 23,77
   xacctcode=space(05)
   loop
  endif
  xacctname=acctname
  exit
enddo
  @ 08+I,43 get xacctname pict "@!"
  clea gets

@22,02 clea to 23,77
set proc to saver
do duba
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "VRA"
     exit
   endif
     x=0
  enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER ACCOUNT CODE or Press Enter Key on Code to Exit"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     loop
   endif
   if upper (chr(x)) $ "A"
     clear
     close all
     return
   endif

   i=i+2
   @22,02 clea to 23,77
   loop
     Else
  I=1
```

```
Endif
Enddo
retu

*---------------------------- PROCEDURE dcoder.prg ------------------------------
proc dcoder
clear
set color to w+/b
set proc to header
do head
subh="Deletion of Unwanted/Obsolete Registered Account Code"
@05,(80-len(subh))/2 say subh

 use CODER
 index on acctcode to acctcode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "ACCOUNT CODE"
  @07,43 say "ACCOUNT NAME\DESCRIPTION"
  I = 1
 Do while .t.
   *---------------------- Initialization of Variables------------------
   xregdate=dtoc(date())
   xregtime=time()
   xacctcode=space(05)
   xacctname=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER ACCOUNT CODE or Press Enter Key on acct Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      @ 08+I,29 get xacctcode pict "99999"
      read
      if xacctcode=space(05)
        clear
        close all
        return
      endif
      go top
      seek xacctcode
      if .not. found()
```

```
    fb="ACCOUNT CODE DOES NOT EXIST. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    xacctcode=space(05)
    loop
  endif
  xacctname=acctname
  exit
enddo
  @ 08+I,43 get xacctname pict "@!"
  clea gets

@22,02 clea to 23,77
set proc to saver
do kashe
   x=0
   do while x=0
    x=inkey()
    if upper (chr(x)) $ "DRA"
      exit
    endif
      x=0
   enddo
    if upper (chr(x)) $ "R"
      @08+i,03 clea to 19,77
      @22,02 clea to 23,77
      fb="ENTER ACCOUNT CODE or Press Enter Key on Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      loop
    endif
    if upper (chr(x)) $ "A"
      clear
      close all
      return
    endif
    Dele
    Pack
    i=i+2
    @22,02 clea to 23,77
    loop
      Else
```

```
      I=1
Endif
Enddo
retu

*------------------------------ PROCEDURE cusers.prg -------------------------------
proc cusers
clear
set color to w+/b
set proc to header
do head
subh="Registration of New Passwords Users"
@05,(80-len(subh))/2 say subh

 use password
 index on usercode to usercode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "USER'S CODE"
  @07,43 say "USER'S NAME"
  I = 1
 Do while .t.
   *------------------------ Initialization of Variables-------------------
   xregdate=dtoc(date())
   xregtime=time()
   xusercode=space(05)
   xusername=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER USER'S CODE or Press Enter Key on User's Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      @ 08+I,29 get xusercode pict "99999"
      read
      if xusercode=space(05)
        clear
        close all
        return
      endif
      go top
      seek xusercode
```

```
  if found()
    fb="USER'S CODE ALREADY EXIST. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    xusercode=space(05)
    loop
  endif
  exit
 enddo
do while .t.
  @ 08+I,43 get xusername pict "@!"
  read
  if xusername=space(30)
    @23,02 clea to 23,77
    fb="USER'S NAME CANNOT BE EMPTY. Press Any Key To Retry"
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    loop
  endif
  exit
 enddo

 @22,02 clea to 23,77
 set proc to saver
 do boye
   x=0
   do while x=0
    x=inkey()
    if upper (chr(x)) $ "SRA"
      exit
    endif
      x=0
   enddo
    if upper (chr(x)) $ "R"
      @08+i,03 clea to 19,77
      @22,02 clea to 23,77
      fb="ENTER USER'S CODE or Press Enter Key on Code to Exit"
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      loop
```

```
      endif
      if upper (chr(x)) $ "A"
        clear
        close all
        return
      endif
     appen blank
     repl regdate   with ctod(xregdate)
     repl regtime   with xregtime
     repl usercode  with xusercode
     repl username  with xusername
     i =i+2
      @22,02 clea to 23,77
      loop
        Else
     I=1
Endif
Enddo
retu

*----------------------------- PROCEDURE musers.prg -------------------------------
proc musers
clear
set color to w+/b
set proc to header
do head
subh="Modification of Registered User's Password"
@05,(80-len(subh))/2 say subh

 use password
 index on usercode to usercode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "USER'S CODE"
  @07,43 say "USER'S NAME"
  I = 1
 Do while .t.
   *----------------------- Initialization of Variables------------------
   xregdate=dtoc(date())
   xregtime=time()
   xusercode=space(05)
   xusername=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
```

```
  @ 08+I,14 get xregtime pict "99:99:99"
  clear gets
do while .t.
  fb="ENTER USER'S CODE or Press Enter Key on user Code to Exit"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @ 08+I,29 get xusercode pict "99999"
  read
  if xusercode=space(05)
    clear
    close all
    return
  endif
  go top
  seek xusercode
  if .not. found()
    fb="USER'S CODE DOES NOT EXIST, Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    xusercode=space(05)
    loop
  endif
  xusername=username
  @ 08+I,43 get xusername pict "@!"
  clea gets
  exit
enddo
@22,02 clea to 23,77
set proc to saver
do jara
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "MRA"
     exit
   endif
     x=0
   enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER USER'S CODE or Press Enter Key on Code to Exit"
```

```
      @23,02 clea to 23,77
      @23,(80-len(fb))/2 say fb
      loop
    endif
    if upper (chr(x)) $ "A"
      clear
      close all
      return
    endif
do while .t.
  @ 08+I,43 get xusername pict "@!"
  read
  if xusername=space(30)
    @23,02 clea to 23,77
    fb="USER'S NAME CANNOT BE EMPTY, Press Any Key To Retry"
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    loop
  endif
  exit
enddo

@22,02 clea to 23,77
set proc to saver
do boye
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "SRA"
     exit
   endif
     x=0
  enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER USER'S CODE or Press Enter Key on Code to Exit"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     loop
   endif
   if upper (chr(x)) $ "A"
     clear
```

```
          close all
          return
        endif
      repl regdate   with ctod(xregdate)
      repl regtime   with xregtime
      repl usercode  with xusercode
      repl username  with xusername
      i =i+2
       @22,02 clea to 23,77
       loop
         Else
      I=1
Endif
Enddo
retu
*---------------------------------- EOF-------------------------------------
*----------------------------- PROCEDURE vusers.prg -------------------------------
proc vusers
clear
set color to w+/b
set proc to header
do head
subh="Viewing of Registered USER'S Password"
@05,(80-len(subh))/2 say subh

 use password
 index on usercode to usercode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "USER'S CODE"
  @07,43 say "USER'S NAME"
  I = 1
 Do while .t.
   *----------------------- Initialization of Variables------------------
   xregdate=dtoc(date())
   xregtime=time()
   xusercode=space(05)
   xusername=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER USER'S CODE or Press Enter Key on user Code to Exit"
```

```
@23,02 clea to 23,77
@23,(80-len(fb))/2 say fb
@ 08+I,29 get xusercode pict "99999"
read
if xusercode=space(05)
  clear
  close all
  return
endif
go top
seek xusercode
if .not. found()
  fb="USER'S CODE DOES NOT EXIST. Press Any Key To Retry"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  set cons off
  wait " "
  @23,02 clea to 23,77
  xusercode=space(05)
  loop
endif
xusername=username
exit
enddo
 @ 08+I,43 get xusername pict "@!"
 clea gets

@22,02 clea to 23,77
set proc to saver
do duba
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "VRA"
     exit
   endif
     x=0
  enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER USER'S CODE or Press Enter Key on Code to Exit"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     loop
```

```
        endif
        if upper (chr(x)) $ "A"
          clear
          close all
          return
        endif

        i=i+2
        @22,02 clea to 23,77
        loop
          Else
       I=1
Endif
Enddo
retu
*---------------------------------- EOF-------------------------------------
*----------------------------- PROCEDURE dusers.prg -------------------------------
proc dusers
clear
set color to w+/b
set proc to header
do head
subh="Deletion of Unwanted/Obsolete Registered User's Password"
@05,(80-len(subh))/2 say subh

 use password
 index on usercode to usercode

  @07,03 say "REG. DATE"
  @07,14 say "REG. TIME"
  @07,27 say "USER'S CODE"
  @07,43 say "USER'S NAME"
  I = 1
 Do while .t.
   *----------------------- Initialization of Variables------------------
   xregdate=dtoc(date())
   xregtime=time()
   xusercode=space(05)
   xusername=space(30)
if I < 10
      @ 08+I,03 get xregdate pict "99/99/9999"
      @ 08+I,14 get xregtime pict "99:99:99"
      clear gets
    do while .t.
      fb="ENTER USER'S CODE or Press Enter Key on user Code to Exit"
```

```
@23,02 clea to 23,77
@23,(80-len(fb))/2 say fb
@ 08+I,29 get xusercode pict "99999"
read
if xusercode=space(05)
  clear
  close all
  return
endif
go top
seek xusercode
if .not. found()
  fb="USER'S CODE DOES NOT EXIST. Press Any Key To Retry"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  set cons off
  wait " "
  @23,02 clea to 23,77
  xusercode=space(05)
  loop
endif
xusername=username
exit
enddo
 @ 08+I,43 get xusername pict "@!"
 clea gets

@22,02 clea to 23,77
set proc to saver
do kashe
  x=0
  do while x=0
   x=inkey()
   if upper (chr(x)) $ "DRA"
     exit
   endif
     x=0
  enddo
   if upper (chr(x)) $ "R"
     @08+i,03 clea to 19,77
     @22,02 clea to 23,77
     fb="ENTER USER'S CODE or Press Enter Key on Code to Exit"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     loop
```

```
      endif
      if upper (chr(x)) $ "A"
        clear
        close all
        return
      endif

      Dele
      Pack
      i=i+2
      @22,02 clea to 23,77
      loop
        Else
     I=1
Endif
Enddo
retu
*---------------------------------- EOF-------------------------------------
*----------------------------- PROCEDURE cdebit.prg --------------------------------
proc cdebit
clear
@05,03 clea to 05,78
@07,03 clea to 19,78
subh="Posting of Debit Transaction Data Entry Screen"
@05,(80-len(subh))/2 say subh

do while .t.
      @07,35 TO 11,76 DOUB
      @07,47 say " TRANSACTION STATUS "
      @08,36 say "Total Debit (DR).....:# "
      @09,36 say "Total Credit (CR)....:# "
      @10,36 say "Balance.............:# "

      use
      use trans
      sum dr to mtdr
      sum cr to mtcr
      @08,60 say mtdr pict '9,999,999,999.99'
      @09,60 say mtcr pict '9,999,999,999.99'
      differ=mtcr-mtdr
      @10,60 say differ pict '9,999,999,999.99'
    do while .t.
      @09,03 to 11,30 doub
      xtvno=space(05)
      fb="ENTER TRANSACTION VOUCHER No. or Press Enter Key on V/No.to Exit"
```

```
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @10,04 say "VOUCHER NUMBER..: " get xtvno pict "99999"
  read
  if xtvno=space(05)
    clear
    close all
    return
  endif
  index on tvno to tvno
  go top
  seek xtvno
  if found()
    fb="VOUCHER NUMBER ALREADY EXIST. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    xtvno=space(05)
    loop
  endif
  exit
enddo
  @12,03 to 19,76 doub
do while .t.
  xtransdate=ctod("  /  /  ")
  fb="ENTER TRANSACTION DATE"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @13,04 say "TRANSACTION DATE.: "get xtransdate pict "99/99/9999"
  read
  if (dtoc(xtransdate))=space(08)
    fb="TRANSACTION DATE CANNOT. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    loop
  endif
  if mthcode<>month(xtransdate) .and. yr<>year(xtransdate)
    @23,03 CLEAR TO 23,77
    @23,24 say 'INVALID DATE - Press any key ...'
    set cons off
```

```
    wait
    set cons on
    @23,21 clea to 23,58
    xtransdate=ctod('  /  /    ')
    loop
  endif
  if mthcode<>month(xtransdate)
    @23,03 CLEAR TO 23,77
    @23,24 say 'INVALID MONTH - Press any key ...'
    set cons off
    wait
    set cons on
    @23,21 clea to 23,59
    xtransdate=ctod('  /  /    ')
    loop
  endif
  if yr<>year(xtransdate)
    @23,03 CLEAR TO 23,77
    @23,24 say 'INVALID YEAR - Press any key ...'
    set cons off
    wait
    set cons on
    @23,21 clea to 23,59
    xtransdate=ctod('  /  /    ')
    loop
  endif
  xchequeno=space(05)
  fb="ENTER CHEQUE NUMBER"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @13,36 say "CHEQUE No..: "get xchequeno pict "99999"
  read
do while .t.
  xacctcode=space(05)
  fb="ENTER ACCOUNT NUMBER"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @13,56 say "ACCOUNT No..: "get xacctcode pict "99999"
  read
  if xacctcode=space(05)
    fb="ACCOUNT NUMBER CANNOT BE EMPTY. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
```

```
   @23,02 clea to 23,77
   loop
  endif
  use
  use coder
  index on acctcode to acctcode
  go top
  seek xacctcode
  if .not. found()
    fb="ACCOUNT NUMBER DOES NOT EXIST. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    loop
  endif
    xacctname=acctname
    @15,04 say "ACCOUNT NAME.: "get xacctname pict "@!"
    clea gets
    exit
 enddo

  xtranstype="DR"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @15,52 say "TRANSACTION TYPE..: "get xtranstype pict "!!"
  clea gets

do while .t.
  xdetails=space(30)
  fb="ENTER DETAILS OF TRANSACTION"
  @23,02 clea to 23,77
  @23,(80-len(fb))/2 say fb
  @17,04 say "DETAILS..: "get xdetails pict "@!"
  read
  if xdetails=space(30)
    fb="DETAILS OF TRANSACTION CANNOT BE EMPTY. Press Any Key To Retry"
    @23,02 clea to 23,77
    @23,(80-len(fb))/2 say fb
    set cons off
    wait " "
    @23,02 clea to 23,77
    loop
  endif
```

```
   exit
 enddo
 do while .t.
   xdr=0.00
   xcr=0.00
   fb="ENTER AMOUNT ON DEBIT TRANSACTION"
   @23,02 clea to 23,77
   @23,(80-len(fb))/2 say fb
   @17,47 say "AMOUNT..: "get xdr pict "9,999,999,999.99"
   read
   if xdr=0.00
     fb="DEBIT AMOUNT CANNOT BE EMPTY, Press Any Key To Retry"
     @23,02 clea to 23,77
     @23,(80-len(fb))/2 say fb
     set cons off
     wait " "
     @23,02 clea to 23,77
     loop
   endif
   exit
 enddo
exit
enddo
   @22,02 clea to 23,77
   set proc to saver
  do boye
    x=0
    do while x=0
     x=inkey()
     if upper (chr(x)) $ "SRA"
       exit
     endif
       x=0
    enddo
     if upper (chr(x)) $ "R"
       @07,03 clea to 19,77
       @22,02 clea to 23,77
       fb="ENTER TRANSACTION VOUCHER No. or Press Enter Key on V/No.to Exit"
       @23,02 clea to 23,77
       @23,(80-len(fb))/2 say fb
       loop
     endif
     if upper (chr(x)) $ "A"
       clear
       close all
```

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ACCOUNT MANAGER | TABLE FILE | REPORT | QUIT

USE LEFT & RIGHT ARROW KEYS TO HIGHLIGHT & PRESS ENTER

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A Case Study of Bank of the North Cash Book, Minna Branch

ACCOUNT MANAGER | TABLE FILE | REPORT | QUIT

DEBIT TRANSACTION
CREDIT TRANSACTION
DAILY PROCESSING
EXIT TO MENU

USE UP & DOWN ARROW KEYS TO HIGHLIGHT & PRESS ENTER

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ACCOUNT MANAGER | TABLE FILE | REPORT | QUIT

DEBIT TRANSACTION →
CREDIT TRANSACTION
DAILY PROCESSING
EXIT TO MENU

CREATE NEW RECORD
MODIFY RECORD
VIEW RECORD
DELETE RECORD
EXIT TO MENU

USE UP & DOWN ARROW KEYS TO HIGHLIGHT & PRESS ENTER

BANK OF THE NORTH, MINNA

Posting of Debit Transaction Data Entry Screen

VOUCHER NUMBER..: 00312

TRANSACTION STATUS

Total Debit (DR)..:#	25,000.00
Total Credit (CR)..:#	0.00
Balance.....:#	-25,000.00

TRANSACTION DATE.: 20/08/2000 CHEQUE No..: 00234 ACCOUNT No..: 00013

ACCOUNT NAME:. JULIUS BULUS TRANSACTION TYPE..: DR

DETAILS..: CASH WITHDRAWAL

AMOUNT..: 25,000.00

[S]ave [R]epeat [A]bandon

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NT MANAGER | TABLE FILE | REPORT | QUIT

TRANSACTION
T TRANSACTION →
PROCESSING
TO MENU

- CREATE NEW RECORD
- MODIFY RECORD
- VIEW RECORD
- DELETE RECORD
- EXIT TO MENU

USE UP & DOWN ARROW KEYS TO HIGHLIGHT & PRESS ENTER

BANK OF THE NORTH, MINNA

Posting of Credit Transaction Data Entry Screen

VOUCHER NUMBER..: 00497

TRANSACTION STATUS

Total Debit (DR)..:#	25,000.00
Total Credit (CR)..:#	50,000.00
Balance.....:#	25,000.00

TRANSACTION DATE.: 21/08/2000 CHEQUE No..: 04561 ACCOUNT No..: 00013

ACCOUNT NAME:. JULIUS BULUS TRANSACTION TYPE..: CR

DETAILS..: CHEQUE LODGEMENT

AMOUNT..: 50,000.00

[S]ave [R]epeat [A]bandon

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ACCOUNT MANAGER | TABLE FILE | REPORT | QUIT

OPEN NEW ACCOUNT

USER'S PASSWORD

EXIT TO MENU

USE UP & DOWN ARROW KEYS TO HIGHLIGHT & PRESS ENTER

APPLICATION OF COMPUTER TO AUDIT AND CONTROLS
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ACCOUNT MANAGER | TABLE FILE | REPORT | QUIT

OPEN NEW ACCOUNT
USER'S PASSWORD →
EXIT TO MENU

Create New File..
Modify File..
View File..
Delete File..
Exit Menu..

USE UP & DOWN ARROW KEYS TO HIGHLIGHT & PRESS ENTER

BANK OF THE NORTH, MINNA

Registration of New Passwords Users

REG. DATE	REG. TIME	USER'S CODE	USER'S NAME
13/08/2000	18:48:23	00226	TANKO MOHAMMED

[S]ave [R]epeat [A]bandon