AUTOMATED INSTRUMENT SETTLEMENT SYSTEM IN COMMERCIAL BANKS IN NIGERIA

(A CASE OF STUDY OF INTERCITY BANK PLC)

BY

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PGD/MCS/97/336

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FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA,

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A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA IN PARTITAL FULFIMENT OF THE REQUIREMENTS FOR THE AWARD OF POST-GRADUATE DIPLOMA IN COMPUTER SCIENCE,

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE,

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APPROVAL PAGE

This Project report titled "AUTOMATED INSTRUMENTS SETTLEMENT SYSTEM IN COMMERCIAL BANKS IN NIGERIA (A CASE STUDY OF INTERCITY BANK PLC) BY AJONYE, JOHN OYINU meets the regulations governing the award of Post Graduate Diploma in Computer Science of Federal University of Technology, Minna and is approved for its contribution to the knowledge and literary presentation.

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DR. S.A. REJU	**DATE**
HEAD OF DEPARTMENT	
.....	.....
EXTERNAL EXAMINER	**DATE**

DEDICATION

This Project is dedicated to my wife, Mrs Ene Ajonye and my daughter Miss, Akowoicho John Ajonye.

ACKNOWLEDGEMENT

I am grateful to my Lecturer and Supervisor Dr. Yomi Aiyesimi for his guidance throughout this project.

I also owe a great deal of gratitude to Mr. Daniel O Ali of Intercity Bank Plc who spared me much time to type the entire manuscript.

Finally, my greatest thanks goes to God who has been my guide and strength.

John Oyinu Ajonye

ABSTRACT

The introduction of electronic media and Computer in particular, into the banking operation has revolutionized banking practice and service delivery. Many application packages are already being marketed from the industrialized Countries such as the USA, Europe and Canada; and of recent less developed Software is that they are general packages, which hardly address peculiar needs of the Nigerian economy.

It is this gap that this project seeks to fill with specific reference to instruments settlement activities.

The procedure in Intercity Bank Plc is no doubt the focus of this research being the case study used, however, my past experiences in other Banks will make the project useful to other Banks.

The use of Computers does not replace the need for judgement on the part of staff neither does it eliminate defalcations rather, the risks associated with certain types of frauds are increased. For this reason, controls have been built into this package to minimize frauds from staff and customers. Access to this package has been developed in modular form to facilitate easy modification and enhancement.

Although the Software was developed to operate on a stand alone Computer, it could also be used in Local Area Network (LAN) environment.

It is my opinion that the use of this Software will speed up banking operations, improve accuracy and data/information integrity hence it is expected to boost customer confidence and profitability of user-banks.

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CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

A major index for measuring the viability of the financial and monetary system of any economy is the efficiency level of the mechanism for the settlement of personal and business transactions. A good payment system should enable a person parting with his goods or services to receive actual payment or assurance of it at the point of the exchange. Anything to the contrary slows down the pace and volume of commercial and financial transactions.

In modern economic settings, the discharge of debts arising from both personal and commercial transactions broadly fall into two forms. The first involves the use of cash where the process of settlement is completed at the point of payment. The second (otherwise called non-cash) is the issuance of a payment instruction/order to an intermediary party, usually a bank and may be of immediate or deferred value. The non-cash category is

often further subdivided into paper-based instruments (such as cheques/drafts and debit or credit cards) and electronic (paper-less) payments, e.g. Automatic Teller Machines.

The use of cheques have some considerable advantages over cash in terms of suitability for large transaction, accuracy, relative safety, and the fact that they provide a good documentary evidence of payments. This project focuses on the automation of settlement systems in Nigerian Commercial Banks with special emphasis on Intercity Bank Plc.

1.2 OBJECTIVES AND SIGNIFICANCE OF THE STUDY

The 1997 yearly report of the Central Bank of Nigeria (CBN) reveals that the total currency in circulation as at 31st December, 1996 was ₦126,027.25 Million while that of 1997 stood at ₦ 144,832.718 Million. Out of these figures, the sum of ₦ 116,121.5Million (92.14%) and ₦107,108.8 Million (73.95%) respectively were outside the banking system. This represents a

7.76% drop of currency outside the banking system as well as an 18.19% reduction in the proportion of the currency outside Banks to total currency in circulation. This slight improvement have been attributed to increased efforts of banks to attract deposits as seen in the 27.72% growth of demand deposits (funds withdrawable by cheques) from ₦124,512.3 Million as at 31st December, 1996 to ₦159,033.2 Million in December, 1997.

Although the foregoing statistics indicate an improving banking habit in the economy, a greater proportion of Nigerians still continue to prefer the use of cash for the settlement of financial and commercial transactions. This is the main explanation for the growth of currency in circulation from ₦5.7 billion at the end of 1986 to ₦90.1billion, ₦126.03billion and ₦144.8billion as 31st December 1994, 1996 and 1996 respectively.

The preference for cash transactions is associated with great risks such as theft, robbery and fire incidents. There is also the cost implication for the currency issuing authority in terms of

production, storage, processing, distribution, security and transportation. Besides, the currency outside the banking system is less responsive to monetary policy. Thus the existence of large currency outside the banking system portends problems for monetary management and inflation control.

In order to encourage the use of cheques, the monetary authority has made it illegal to buy lands, cars and shares by cash. Furthermore, the Central Bank of Nigeria is transferring the cost of processing old currency notes to Commercial Banks with the view of discouraging cash transactions.

This Project seeks to computerise the instruments settlement system in Commercial Banks with special reference to Cheques. It is expected that this will improve the accuracy of cheque clearing/settlement systems, which will in turn improve confidence in the banking system.

Clearance of local cheques takes three working days, while intra-

state cheques and inter-state cheques take seven and fifteen working days respectively. Same-day settlement is limited to intra-bank instruments where the drawer of the cheque and the beneficiary maintains accounts with the same branch of a bank. This is also possible in case of inter-branch cheques where computerised branches of a bank is linked up through a Wide Area Network (WAN) system. It is therefore, believed that computerisation of the cheques clearing system of banks, net working of branches and linkage to the Central Bank of Nigeria (CBN) computer system will surely improve the speed of cheques clearance hence a more speedy transfer of funds to payees of instruments.

These will facilitate the reaping of the comparative advantages of using instruments over cash such as suitability for large transaction, relative safety and documentation of payments, which is sometimes the only evidence of debt settlement.

1.3 PRESENTATION OF THE PROJECT

This Project is organised into five Chapters. The first Chapter is the introductory part. Chapter two reviews literature on Intercity Bank Plc (the case study), types of cheques, types of clearing and the activities of the Central Bank of Nigeria (CBN) organised Clearing House. Chapter three analysises the weaknesses of the existing system and also provides the details for the proposed clearing system, while Chapter four covers program coding and implementation.

The concluding Chapter gives a summary of the preceding Chapters and the conclusions drawn there from. The final part of the Chapter proffers recommendations on how to improve acceptability of cheque instruments and its clearance.

CHAPTER TWO

LITERATURE REVIEW

2.1.0 A BRIEF HISTORY OF INTERCITY BANK (ICB) PLC

Intercity Bank (ICB) Plc was promoted by the Niger State Development Corporation (NSDC) on behalf of the Niger State Government as a Private Limited Liability Company to undertake commercial banking operations. It was incorporated on 27th April, 1987, obtained its banking License on 28th October, 1987 and commenced full commercial banking operations on 28th October, 1988 under a Technical Management Agreement with the First Bank of Nigeria Plc which lasted till 4th December, 1990. Another Technical Management Agreement was signed with the International Merchant Bank (IMB) Plc covering the period December, 1990 to December, 1995.

The Bank relocated its Head Office from No. 3, Commercial Complex, along Bosso Road in Minna, to No. 1 Intercity Bank Street of Ahmadu Bello Way, Kaduna in December 1998. The Bank presently has ten branches located at Victoria Island, Yaba, Minna, Suleja, Kaduna, Kano, Abuja, Gusau, Zaria and Port Harcourt as well as three Market Cash Centres at Minna, Balogun (Lagos) and Kano. Plans are at

advanced stage to still expand the branch network.

The Bank's strategic goal is to continuously improve upon the quality and range of its services to customers and expanding its market coverage using the best people and technology available. With expansion, continuous improvement in service quality, responsiveness to needs of customers and increasing access to technology, the Bank is positioned to grow in the increasingly competitive financial environment.

2.2.0 THE CENTRAL BANK OF NIGERIA (CBN) ORGANISED CENTRAL CLEARING

2.2.1 The CBN organises a clearing house for banks in each state capital where the apex bank has a branch as well as in other large business centres such as Zaria and Onitsha. The clearing House is the principal mechanism for effecting settlement of non-cash payment transactions involving banks and the banking public at large.

Cheques and other negotiable instruments are exchanged by representatives of the various banks at the Clearing House which holds its sessions at specified times under the supervision of the Central Bank. The actual settlement of Net balances between Banks is done through

their current accounts with the Central Bank.

2.2.2 SUMMARY OF RULES AND PROCEDURES OF THE CLEARING HOUSE

The Clearing House operates within a set of rules and procedures for the exchange, verification and final settlement of various payment instruments originating in the financial and the real sectors of the economy. A summary of these rules and procedures are as follows:

a) Each member bank is represented at the Clearing by a Clerk (or clerks) authorised to deliver and receive documents for his bank and who must observe strictly any instructions given to him by the Superintendent of the Clearing. Such Clerks must remain in the Clearing House until the Superintendent of the Clearing has agreed all balances.

b) The presentation at the Clearing House is made in a consolidated form by each member bank as follows:

Cheques received at branches of banks in the Clearing Area, drawn on other banks and branches in the area is machine-listed for each bank; cheques for each bank. Each member bank will

arrange that cheques are collected at a particular branch, probably a main branch, so that cheque drawn on all branches of each bank in the area can be presented together in a single list. The totals of the listings of cheques being presented is entered on the individual bank's Presentation Form (in duplicate) in the appropriate columns before the representative departs for the Clearing House and this form (in duplicate), will be taken by the representatives to arrive at the Clearing House at 10.00 a.m. on every working day. An identified desk is available for each member bank's representative together with centrally placed boxes, marked with the name of each bank, in which cheques together with relative listing would be placed. Each representative checks the listings for his bank against the accompanying cheques presented to his bank and completes his Presentation Form, total it and extract the net position.

c) When the exchange is complete (or at 10.15 a.m.), if the representative of any bank has not arrived at the Clearing House), the Superintendent of the Clearing will be handed the

completed and signed top copy of the Presentation Form from each bank. The Superintendent of the Clearing then completes a daily settlement Form by inserting the Net figures from each member bank's Presentation Form. His completed Settlement Form will balance if all entries have been made correctly. When he is satisfied that the balance is correct, then Superintendent of the Clearing signs the duplicate of each member Presentation Form at the foot verifying the totals. The Settlement Form becomes the voucher to be used for debiting or crediting, as appropriate, the accounts for each bank in the books of the Central Bank of Nigeria. The Central Bank is given a suitable mandate by each member bank for this purpose.

d) **On return of Representatives of member banks from the Clearing House, he passes the cheques received by him to the representatives of their branches in the Clearing Area.**

Cases of errors in the listings are adjusted the next day, each bank accepting the figures produced by the other banks subject to adjustment on the following day.

e) Statements of each Bank's Current Account with the CBN as at the previous clearing day is handed to the Clearing bank's representatives at the time of the exchange.

f) The limit for the return of unpaid cheques shall be as laid down in Clearing House Rules, insofar as cheques presented through the Clearing House are concerned.

g) All documents presented through the Clearing shall bear the stamp of the presenting bank and the date of the day on which they are passed through the Clearing.

h) All cheques and other document returned unpaid shall bear a written statement explaining the cause of non-payment. Cheques presented by mistake to a bank other than the drawee bank shall be returned not later than the third clearing session to the collecting bank with a debit note marked "Wrong Delivery". It will be open to a bank receiving a mis-sorted cheque to return it specially to the collecting bank and to receive in return a banker's payment or cash.

i) Any member bank may make a special presentation of a cheque to the bank on which it is drawn and is entitled to receive in

exchange a banker's payment or cash or the cheque returned unpaid.

j) Presenting banks are responsible for ensuring that all documents presented through clearing are prima facie in order.

2.2.3 TRANSFER OF FUNDS BETWEEN BANKS

All members of the Clearing House maintain Current accounts with Central Bank. The actual transfer of the next clearing position is effected through this account.

a) If on a day, a Bank delivers cheques worth more than the total amount of cheques drawn on it (i.e. the inflow of fund are more than the total amount of cheques drawn on it then its account with the Central Bank will be credited with the excess amount.

b) If the total amount of cheques drawn on a certain Bank by other Banks is more than its receivables from other Banks (excess of payables over its receivables) then the Bank's account will be debited for the amount.

c) Where the total cheques presented by any Bank on a particular day is equal to the total cheques drawn on it, no transfer will be made into its account with the CBN.

d) It is the responsibility of every member bank to maintain in credit, its Clearing Account with the Central Bank. In the event of any member bank being unable to meet its liabilities by the close of business on any day, that bank may be called upon to return all cheques drawn upon it through the clearing. In the event, the Central Bank may stamp such cheques "Insufficient funds on Drawee's bank clearing Account" and return them to the presenting bank.

2.2.4 EFFECTS OF CLEARING

a) The total bank Deposits in a country are not affected by this operation.

b) Aggregate balances for banks with the Central Bank is not affected.

c) The Deposits of individual Banks are affected in so far as the Bank may have to pay more or less to another Bank.

2.3.0 TYPES OF CHEQUES

2.3.1 The Clearing period it takes an instrument to be deemed due for payment (unless otherwise returned) could be used as a broad classification of cheques. This classification is in turn determined by the

geographical location of the presenting

paying banks as well as the prevailing clearing guidelines.

i) **HOUSE CHEQUES: - Cheques drawn on and paid into the same branch of a bank. That is, the account of both the drawer and the payee are domiciled in the same branch of a bank. The drawer is debited while the payee credited once the cheque is certified good for payment. The clearance process is thus completed within the same day.**

ii) **INTER-BRANCH CHEQUES:- These are cheques whose proceeds are to be collected from another branch of the same bank, say cheque of Yaba branch of ICB Plc lodged in the Minna branch. Such cheques are sent to the paying branch for collection.**

Iii) **LOCAL CHEQUES:- These are cheques drawn on a bank and lodged into another bank within the same clearing area/zone.**

iv) **INTRA-STATE CHEQUES:- These are up-country cheques drawn on branches of banks located in another clearing zone but within the same state.**

v) **INTER-STATE CHEQUES:- These are also up-country cheques**

but whose drawee bank is located in another State of the Federation.

vi) **FOREIGN CHEQUES:- Cheques whose paying banks are located outside Nigeria and should therefore be handled outside the Nigerian Clearing House System.**

2.3.2 House Cheques and Inter-branch Cheques are cleared within the same bank and therefore must not be mixed up with other banks' cheque.

2.4.0 <u>CLASSIFICATION OF CLEARING</u>

Clearing can be classified in various ways. The most popular being the classification into outward and inward clearings respectively.

2.4.1 <u>OUTWARD CLEARING</u>

This is the process where customers of a bank deposit cheques and other negotiable instruments in his account, which are drawn on other banks, requesting his bankers to collect and credit the proceeds of same into his account.

CHARACTERISTICS OF OUTWARD CLEARING:

a) **Instruments are drawn on other Banks.**

b) **They are to be collected on behalf of a customer and credited into his account.**

c) They constitute "Receivables" for the Bank and "Uncleared Effects" for the customer.

2.4.2 INWARD CLEARING

This is a process through which instruments received by and drawn on a bank (sent by the collecting bank(s) in whose customer's favour they are drawn), the proceeds of which are to be transferred to the collecting bank through the Clearing House.

CHARACTERISTICS OF INWARD CLEARING

a) The proceeds to be remitted out to the Bank sending the instruments.

b) The transfer takes place by debiting the account of the customer on whom the cheque is drawn and crediting the account of the bank acting as a collecting agent for the Payee through the Clearing House.

2.5.0 SPECIAL CLEARING

At places where formal Clearing House arrangement does not exist, banks settle clearing transactions by sending cheques and instruments directly to the Drawee Banks.

Even where Clearing Houses are functioning, it may become necessary in certain cases to settle a cheque, drawn on some other bank through special clearing either because:

i) **The cheques is of substantial amount and could not be sent to Clearing House well in time or because;**

ii) **The drawee's bank is not a member of the Clearing House.**

The Settlement of cheques between two banks directly is shall be called "Special Clearing". Settlement is made by issuing a bank cheque in favour of the presenting/collecting bank.

The procedures for cheques reference, authorization and issuance of bank cheques still apply in the case of instruments presented for Special Clearing. Extra caution is always advised in such instances because of the huge amounts usually involved.

CHAPTER THREE

SYSTEMS ANALYSIS AND DESIGN

3.0 MAJOR WEAKNESSES OF THE EXISTING SYSTEM

3.1.0 Intercity Bank Plc, which was used as a case study of this Project, recently embarked on an aggressive computerisation of its operation using an in-house developed application package called the Pathfinder Banking Software.

The Bank adopted a staged change over approach of implementation thereby introducing the Software piece-by piece. This has led to computerisation of the retail banking activities of some Branches while others are still at the general ledger state.

3.1.1 Processing of Cheques in the less computerised Branches is largely manual with he attendant problem of low speed and tediousness especially when large data is to be processed. This weakness explains the relatively slower pace of customers' service delivery by the un-computerised branches as opposed their computerised competitors.

3.1.2 Similarly, clearance of cheques drawn on sister Branches of the same Bank take un-necessarily long period of days to clear instead of minutes

for computerised Banks where Branches are linked vide Wide Area Network (WAN).

3.1.3 sometimes compromise accuracy hence a resultant reconciliation problems of Uncleared Effects accounts, Central Bank of Nigeria current accounts and customers' accounts.

3.1.4 Even in Branches where the in-house package is being used, maximum advantage has not been taken of the ability of the Computer to auto-process some repetitive operations.

3.1.5 All these weaknesses have been addressed in the System proposed in this Project. It is therefore, believed that the application of the proposed computerised Cheques Clearing Systems will improve the efficiency and effectiveness of the work force of the Bank and hence the quality of service delivery to their customers.

3.2 THE PROPOSED CLEARING PROCEDURE

The computerised Cheques Clearing System being recommended for Intercity Bank Plc (which could also be adopted to any other Commercial Bank in Nigeria as follows:

3.2.0 PROCEDURE FOR OUTWARD CLEARING

3.2.1 Cashier collects the clearing cheques with completed pay-in-slip (Form 3A see appendix 1) from customers and scrutinizes the instruments to ensure among others that:

i. **All cheques listed on the teller have been received.**

ii. **Amounts on the customer's teller agree with the cheque amount.**

iii. **Customer's account name and numbers are written clearly.**

iv. **The cheque is dated and is not stale.**

v. **The name and town of the Bank on which the cheque is drawn is noted on the teller.**

vi. **Cheques and cash are not mixed up on the same teller. Similarly, different tellers should be used for each cheque. Improperly drawn cheques and/or erroneously completed tellers should be politely returned to the customer for correction.**

3.2.2 Cashier passes the cheques and tellers to the Clearing Officer who records them in the Cheques' Register, taking note of date, name of the customer, his account number, the paying bank, cheque number and the amount. He then initials each Teller evidencing correctness and send them to the Head of Operations or the Branch Accountant for approval.

3.2.3 After the close of business, the Clearing Clerk removes cheques from the Tellers.

3.2.4 Arrange and sort Tellers into:

- **House cheques**
- **Inter-Branch cheques**
- **Local Cheques**
- **Intra-state Cheques**
- **Inter-state Cheques**

3.2.5 Machine lists each file of 4.2.4 above and take a total.

Compare this to the total value of cheques, and investigate any difference immediately.

3.2.6 <u>CHEQUES TO BE CLEARED THROUGH THE CLEARING HOUSE</u>

(a) Stamp all Tellers (other than those for House Cheques) with their respective value dates.

(b) **Photocopy all clearing cheques above N10,000.00 and filed appropriately for future reference.**

(c) **Stamp all clearing cheque with validating/crossing stamp of the branch and microfilm each of them.**

(d) **Batch each bank's cheques using clearing slips (Form 73 - see Appendix 2) in duplicate and clip them to the cheques to be delivered to the respective banks in the clearing house. Different slips should be used for local, intra and inter-states cheques respectively.**

(e) **Enter the summarised number and value of cheques in 3.2.2 above into the credit side of the Presentation Form (Form No. 17 - see appendix 3) in duplicate. Different Presentation Forms must be used for local cheques, intra-state cheques and inter-state cheques respectively.**

(f) **Record the details of cheques to be taken to the Clearing House in the CBN clearing Register which has columns for Date, Cheque No.; amounts for local cheque, Intra-state cheque and Inter-state cheques and Signatures respectively. Separate pages are reserved in the Register for each bank represented in the Clearing Area.**

(g) **Record Tellers for Local Cheques, Intra-state Cheques and Inter-state Cheques sorted in 3.1.4 above in their respective Uncleared Effects Registers.**

(h) **The Clearing Officer using the approved pay-in-slips (form 3A - appendix 1):**

i). **post cheques to be sent to the CBN Clearing House using transaction type 1. These will be credited to the Uncleared Effects Account and debited to the Cheques for Collection Account. The Cheques credited to the Uncleared Effects account will be automatically reversed and credited to the respective customers' account on the maturity (due date). The amount debited to the Cheques for Collection account must be reversed on the following working day when the cheques are to be sent to the Clearing House**

ii). **Cheques to be sent to the sister Branches of the same Bank are posted using transaction type 2. These are credited to Uncleared Effects account while their debits go to the appropriate interbranch accounts. As with cheques sent through the Clearing House, they are automatically**

reversed from the Uncleared Effects account and credited to the respective beneficiary's account on the maturity date.

iii. The inter branches cheques belonging toother branches of the same Bank are mailed directly to them for payment.

Each uncleared Effects register must have columns for serial number, Date, particulars, A/C No., Cheque No., Paying Bank, Amount, Date sent, Due date, Initials on date sent, Initials on date received and Remarks.

(i) At the end of the day, the Clearing Officer locks up the cheques in the Clearing brief case and send it to the vault for safe custody until the following working day.

(j) In the morning of the following day, the Clearing Officer collects back the Clearing brief case from the vault

(k) He sums up the Clearing Cheques being to sent to the Clearing House and pass the following entries:

DR. CBN Current Account} - using internal debit vouchers (form 1D - Appendix 5).

CR. Cheques for Collection} - using internal credit vouchers (form 10A - appendix 5).

NARRATION: Being total value of instruments to be presented to the Clearing House today.

(l) The entries in 3.2.6 (k) together with the CBN clearing Register (Para. 3.1.6 (f), Form No. 73 and the Presentation Form are sent to the Branch Accountant for Signature, and subsequently counter-signed by the Head of Operations or Manager.

(m) Entries signed in 3.2.6 (l) are posted using transaction type 3.

(n) Clearing Officer put the cheques, presentation form and the CBN Clearing Registers in the Clearing Box and takes same to the Accountant for locking.

(o) Clearing Officer collects the locked brief-case containing clearing cheques and leaves for CBN where the CBN Clearing Superintendent will open the box with the duplicate key.

(p) At CBN, Clearing Officer delivers the cheques presented by the Branch to the representative of Banks and in turn collects from them all cheques meant for his Bank.

(q) Clearing Officer records the total cheques collected from each bank into the CBN clearing Register and on the debit side of the Presentation Form 17.

(r) Clearing Officer adds up the total of cheques received at the clearing House as recorded in the Presentation Form. The differences between the total obtained and the one obtained for cheques brought to the Clearing House represents the net clearing balance against or in favour of the branch for the day.

(s) i. If the total value of cheques received is less than the value of cheques presented, it is said to be a credit balance in favour of the branch.

ii. If the total value of cheques received is more than the cheques presented, it is said to be a debit balance against the branch.

(t) At the end of CBN clearing session, ensure all cheques received are locked in the clearing box by the CBN clearing Superintendent.

3.2.7 RETURN OF OUTWARD CLEARING CHEQUES

(a) When an instrument lodged by a customer is returned unpaid, it is passed through his current account to produce a relatively permanent record of the returned cheque in the customer's statement/ledger.

(b) CHEQUES RETURNED THROUGH THE CLEARING HOUSE

i. On return from the Clearing House, the Clearing Officer will:

DR: the customer's account with a debit advice, attaching the returned cheque, using transaction type 4.

The System will automatically credit the CBN current account along with other instruments received from the Clearing House.

ii. The Manager, who is the sole authority in editing the Uncleared Effects file, should charge the value date of the instrument in the System to the date when the returned cheque is received thereby promptly the System to, automatically release the Cheque from Uncleared Effects. The Computer then debits the Uncleared Effects and credits the customer.

3.2.8 OUTWARD CHEQUES RETURNED THROUGH SISTER BRANCHES

When interbranch cheques belonging to other branches of the same are returned unpaid for whatever reason, the Clearing Officer will:

i. **Debit the customer who lodged the cheque under advice using transaction type 3.**

   Credit the relevant Interbranch account.

ii. **The Branch Manager edit the value date of the instrument in the Uncleared Effects to current date thereby prompting the System to automatically debit Uncleared Effects and crediting the customer who lodged the instrument.**

3.2.9 PENALTY CHARGES FOR RETURNED OUTWARD CHEQUES

a) **Each Cheque leaf returned unpaid attracts a flat fee, which is currently ₦50.00 per Cheque.**

(b) **The Clearing Officer should debit the customers account- using transaction type 3; and credit Income account.**

3.2.10 OPROCEDURES FOR INWARD CLEARING

(a) **On arrival from the Clearing House, the Clearing Officer hands**

over the clearing box to the Accountant who unlocks it using the office copy of the Key.

(b) The Officer collects the instruments from the Accountant and checks whether they are good for payment.

(c) Those good for payment are debited to the respective customers/drafts/Bank cheque accounts using transaction type 4. While those not good for payment are debited to dishonoured cheques account, also using transaction type 4. The Software is designed to automatically post the credit of these items into the CBN current account.

d) HOUSE CHEQUES RECEIVED FROM SISTER BRANCHES

Those confirmed good for payment should be debited to the respective customers accounts and credited to the relevant interbranch account(s), using transaction type 3.

3.2.11 RETURN OF INWARD CLEARING CHEQUES

When an inward clearing instrument is not good for payment, it must be returned promptly.

The authority to dishonour a cheque rests with the Branch Head.

3.2.12 **RETURN OF HOUSE CHEQUES RECEIVED FROM THE CLEARING HOUSE**

(a) **All House Cheques that come through CBN clearing originated from other Commercial Banks and if same is to be returned, it should be treated as a clearing cheque to the concerned Bank.**

(b) **The Clearing Clerk prepares debit note (form3394 - see appendix 6) in triplicate to the presenting Bank detailing the particulars of the returned cheque as per the form.**

(c) **Record the particulars of the returned cheque in the "other Banks returned cheque register".**

(d) **Insert the cheque into the returned cheque register and pass (along with debit note in 3.2.12(b) to the Branch Accountant for signature and subsequent counter signature of the Head of Operations or Branch Head.**

(e) **Clearing Officer collects back the returned cheque register and detach the original copy of debit note from duplicate and triplicate staple original to the cheque and put same among the days clearing cheques to be sent to concerned bank.**

Same is to be handled in accordance with the procedure of

cheques sent to clearing through CBN.

(f) Accounting entries specified in paragraph 3.2.10(c) of dishonoured inward cheques on the day of collection from the clearing house. When returning the cheques to the Clearing House, debit CBN Current Account and Credit Dishonoured Cheques account along with other cheques being sent to the Clearing House.

(g) Duplicate copy of the debit note is then filed while triplicate copy remains as book copy.

3.2.12 <u>HOUSE CHEQUES</u>

(a) Cheques drawn by a customer in favour of another customer could be lodged into the account of the Payee.

(b) The following entries should be passed and posted after the cheque is confirmed good for payment.

DR. Customer (Drawer) - using the Cheque and classifying it as transaction type 3.

CR. Customer (Payee) - using Teller and classifying it as transaction type 3.

(c) Return the cheque to the Payee if it is not good for payment. The reason for dishonouring the cheque must be clearly

stated on it. The Clearing Officer will:

i) **DR. Customer (Payee) with the amount on the cheque under advise, attaching the returned cheque.**

CR. Customer (Payee) using the Teller.

ii) **DR. Customer (Payee) - using debit advice.**

CR. Income Account - using internal voucher for the penalty charges.

The entries is (a) is meant to reflect the dishonoured cheque in the account of the payee while (b) captures the penalty charges for the dishonoured cheque.

3.3.0 REPORTS

(a) The System will generate the following reports both to screen and/or to print:

- **Uncleared Effects listing**
- **Trial Balance**
- **Statements for each General Ledger accounts.**

3.3.1 Uncleared Effects Listing

This shows the details of all cheques, which are yet to be cleared and therefore have not been credit into the account of the customers who lodged them.

Branch Managers could use this report to grant temporary facility to customers considered to have repayment prospects in the near future. This must however, be done with due caution as any cheque could be returned unpaid even on the last day before its due date.

3.3.2 Trial Balance

At the end of each day's processes, the System is designed to generate the trial balance as at that date. It will produce an error message if accounts are not balanced. This is meant to facilitate a timely correction of erroneous input data.

3.3.3 Statement of Accounts

The System will be able to generate the real time statement of any account on request. This will be of immense use to customers who need their statements for Bank reconciliation as well as for confirmation of their balances.

3.4 HARDWARE AND SOFTWARE REQUIREMENTS

3.4.1 The electronic Computer system consists of two main parts:

- **the Hardware and**
- **the Software.**

The Hardware promises of the physical components and devices of a Computer such as the Central Processing Unit(CPU) and all the input, output and storage devices.

The Software, which are otherwise called programs, are sequence of instructions needed to be performed in order to accomplish a given task. Software is either a system Software, a utility Software or an application Software. The Computerised Cheques Clearing System attached herewith as appendix() is an example of an application Software.

3.4.2 MATCHING HARDWARE AND SOFTWARE

Some popular but unwise ways of meeting the Hardware and Software requirements of an Organization is to acquire a powerful, latest and expensive Computer and then go ahead to develop/shop for the Software or the vice versa.

Although either of the approaches may work eventually, they are prone to under-utilization of facilities, excessive time consumption and

costliness.

The best approach is to determine the information needs of the Organization and then matching them with the appropriate Software and Hardware.

3.4.3 The System's requirements for the implementation of the Computerised Cheques Clearing System are as follows:

(A) <u>Hardware Specifications</u>

i. An IBM (or IBM Compatible) 486 or higher Personal Computer.

- **Although the package can run on some lower capacity Computers such as 386 and 286, the choice of a 486 and above CPU is meant to take advantage of faster processing time as well as interfering with other popular Software as specified in paragraph (3.3.3.b) below.**

- **Minimum RAM requirements for the Software is 2Mb;**
- **Hard disk drive must have at least 4.5mb for storing the Computerised Clearing Manual and related files.**

Due care should be exercised to ensure that the Computer is year 2000 compliant to checkmate the forthcoming millennium bug.

ii. An enhanced Keyboard.

iii. A coloured Monitor capable of supporting Video Graphic Array (VGA), super VGA and 1024 x 768 resolution such as the Compaq V.55 colour Monitor.

iv. A line Printer - An Epson LQ-2070 is recommended for its versatility and effectiveness.

v. The Computer should also be equipped with the followings:

- **A Mouse**
- **A 1.44 - MB, 3.5-inch high-density diskette drive.**
- **A tape drive for back ups.**
- **A UPS.**
- **A stabilizer.**

(B) <u>Software Specifications</u>

The computerised Cheques Clearing Systems operates on MS - DOS version of operating system. There is however, the need to also install Windows 95 in the Computer to facilitate interfering with popular application packages such as the Audit Command Language (ACL) for windows, which serves the vital dual

purposes of auditing through the Computer as well as report writing.

Furthermore, a tape back-up Software such as the Colorado T3000 will be needed for backing-up into Tapes for off-linestorage.

These Tapes have capacity for storing about 3.2GB of compressed data.

3.3.4 Although a stand-alone Personal Computer has been recommended as above, the Computerised Cheques Clearing System can also work in a Net-work environments such as a Local Area Network (LAN).

CHAPTER FOUR

PROGRAM CODING AND IMPLEMENTATION

4.1 CHOICE OF PROGRAMMING LAUNGAGE

The program for this Project was written using Dbase IV. The choice of Dbase Programming Language rather than other available languages like the BASIC and CLIPPERS was informed by the following considerations:

Dbase is a very versatile and powerful programming tool, which allows for creation modification and detection of records.

It can handle large volumes of data, which make it very suitable for banking applications.

It allows for record sorting and extraction in line with defined criterion.

Enquiries into data base, which is allowed, make it appealing to Banks.

This satisfies Bankers' need to frequently enquire into customers' balances and general account operation statistics.

It supports generation of customized reports. Secondly, Dbase language is easy to use while the dot prompt is designed for the advanced users, the control centre offers full screen menu that is very user-friendly hence it is very useful to beginners.

Finally the programmer is more conversant with DBase IV programming language than with others.

Although the Software was developed to operate on a stand alone Computer it could also be used in Local Area Network (LAN) environment.

It is my opinion that the use of this Software will speed up banking operations, improve accuracy and data/information integrity hence it is expected to boost customer confidence and profitability of users.

4.2 PROGRAM CODING

The actual set of instruction, which the Computer has to follow in the automated clearing system, is, attached as an Appendix because it is bulky.

4.3 TESTING AND DEBUGGING

The programs have been rigorously tested to rid it of bugs. Syntactic errors were corrected during the coding stage. Test data was subsequently processed and results compared with pre-defined output. The variances observed produced the basis for the correcting semantic errors.

4.4 DESCRIPTION OF THE MAIN

4.4.1 The main menu of the automated instruments settlement system has the following modules:

DAILY TRANSACTIONS ENTRIES

END OF DAY PROCESS

REPORT GENERATION

EDIT MODULE

EXIT MAIN PROGRAM

4.4.2 DAILY TRANSACTIONS ENTRIES

This module is used for posting of transactions into accounts whether it is customers' accounts or general ledger accounts.

4.4.3 END OF PROCESS

This module is used to process the day's transactions after posting the operations.

It is programmed to test the arithmetical accuracy of posting and to terminate the end of day run if the transactions are unbalanced. This helps to ensure that the transactions are balanced daily thereby minimizing errors and frauds.

4.4.4 REPORT GENERATION

Report generation module produces reports (both hard copy and soft copy). Reports to be generated by this module include:

- **Customer statements and printing of General Ledger Statements.**
- **Uncleared Effects listing.**
- **Trial balance report.**

Details of these reports were discussed in paragraph 3.3.

4.4.5 EDIT MODULE

This module is used to edit transaction for the day before running the end of day. However, if an error is discovered after processing the day's transactions, a reversal entry should be raised and posted accordingly.

4.4.6 EXIT MAN PROGRAM

This terminates (or exit from) the main program.

4.5 CHANGNG OVER TO THENEW SYSTEM

4.5.1 Having been syntactically and semantically debugged, the program can be implemented by any bank.

A direct change over is recommended in view of the fact that this program covers only a small aspect of the Bank's operations -

instrument settlement system, hence a phased change over may not be necessary.

It is necessary that the hardware and software specifications in 3.4 of this project are made available and adequate administrative controls are put in place. Furthermore, the members of staff who are the users of the system must be well trained.

4.5.2 INSTALLATION OF SOFTWARE

In order to install the automated instruments settling system, you are required to do the following:

At the C (root directory) type

MD clearing (this creates a clearing directory)

CD clearing (this changes the directory to clearing) in order to copy from the distribution diskette into the hard disk:

- **Insert the distribution diskette to the disk drive**
- **Type A:> Copy *.* c/: Enter.**

4.5.3 FILE CONVERSION

A back up of the existing files should be made, preferably on tape or diskettes.

Extract a trial balance and confirm that the existing files are balanced. Key in the balances from the old files. Extract a trial balance of the new files in the new Software for comparison with trial balance of the old files with a view to resolving all seen differences.

4.6 PROGRAM MAINTENANCE

Computing is very dynamic world. There is hardly any human endeavour that is currently witnessing changes at a pace faster than computing. Thus every application package needs to be maintained to make it relevant, otherwise obsolesce will put it out of market. Operational changes, customizing of packages, correction of errors, end-users, demand for additional features/format, report or information as well as programming errors are some other common causes of program maintenance.

For this purpose the automated settlement system has been written in modules to make program maintenance easy. Furthermore, a detailed documentation of the procedure has been described in paragraph 3.2 of this project to further facilitate understanding and maintenance of the program.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

The Nigerian banking environment has become very dynamic and over increasingly complex thereby imposing on Managers of funds the need to adopt sophisticated systems capable of processing large volume of data at high speed and accuracy for improved service delivery. This has necessitated the increasing computerization of banking activities.

It is amazing what the Computer can do. It allows experts to achieve more with less effort. It extends the capabilities of mind.

This program seeks to automate the settlement process of instruments in Nigeria in the Nigerian Commercial Banks with emphasis on Intercity Bank Plc. It is designed with the view to solving instrument settlement problems thereby making banks to reap advantages such as improved speed in data processing, reliability of data and information generated there from, efficiency in costs and the ability to accept and store large volume of data.

5.2 CONCLUSION

This project has achieved its main goal of developing a computerized instrument settlement system that operates in a Do's platform.

It has thrown much light on the type of Cheque and the CBN clearing system. It covered clearance of house cheques, interbranch cheques as well as interbranch cheques. The project automates the clearance of instruments into customers' accounts taking into consideration the statutory clearing period for the types of clearing instruments.

The system is designed to accept even non-cheque inputs hence it will meet some of the entries and General Ledger needs of any Bank.

5.3 RECOMMENDATION

In view of the enormous advantages of non-cash settlement system over cash transactions I would like to offer the following recommendations to encourage the use of instruments:

The Government should compel all banks to computerize their clearing system to facilitate linkage of all banks through a Wide Area Network. This will certainly reduce clearing days.

The Central Bank should completely phase out the use of non-MICR

instruments in the Nigerian banks.

Banks should give adequate Computer training to staff, as acquisition of hard ware and/or software without proper training will not guarantee the maximum benefits expected.

The immense advantages of computerization not withstanding, it is a known fact that computerization carries with it a big risk-computer fraud. It is in this regard that I would like to recommend that Banks that invest heavily on information technology should also properly equip their audit or inspection teams with Computer Aided Audit Tools (CAATS) such as the Audit Command Language (ACL) to combat Computer fraud.

On final note, I would like to say that the automated settlement system could be easily customized to meet specific needs of any bank in Nigeria. I would therefore, not hesitate to recommend it to any Bank that wishes to computerize its settlement system. I am readily available to offer assistance should it be needed.

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```
*****************************************************
** This procedure starts the program          *****
*****************************************************
set score off
set status off
set talk off
SET COLOR TO R/W
CLEAR
TY = "AUTOMATED INSTRUMENTS SETTLEMENT SYSTEM"
L = LEN(TY)
K = 1
M = 8
DO WHILE K <= L
   @3,M SAY SUBSTR(TY,K,1)
   DO DELAY2
   K = K + 1
   M = M + 1
ENDDO
I = 1
DO WHILE I <= 78
   @1,I SAY CHR(219)
   DO DELAY
   I = I + 1
ENDDO
I = 1
DO WHILE I <= 24
   @I,78 SAY CHR(219)
   DO DELAY
   I = I + 1
ENDDO
I = 78
DO WHILE I >= 1
   @24,I SAY CHR(219)
   DO DELAY
   I = I - 1
ENDDO
I = 24
DO WHILE I >= 1
   @I,1 SAY CHR(219)
   DO DELAY
   I = I - 1
ENDDO
SET COLOR TO R/BR
@6,22 CLEAR TO 21,61
SET COLOR TO W/B+
@5,20 CLEAR TO 20,59
```

```
@6,26 SAY "A  PGD   P R O J E C T"
@10,20 SAY "SUBMITTED TO THE DEPT. OF MATHS/COMPUTER"
@12,30 SAY "F U T,   M I N N A."
@15,40 SAY "BY"
@18,30 SAY "   MR. JOHN O. AJONYE"

N = 1
DO WHILE N <= 100000
  N = N + 1
ENDDO
mclose = 0
do while mclose <= 24
@mclose,00 clear to mclose,79
mclose = mclose + 1
do delay2
enddo
do PASS
PROCEDURE DELAY
DELAY = 1
DO WHILE DELAY <= 1000
  DELAY = DELAY + 1
ENDDO
RETURN
PROCEDURE DELAY2
DELAY = 1
DO WHILE DELAY <= 500
  DELAY = DELAY + 1
ENDDO
RETURN
```

```
*********************************************
*** This procedure is the main program    ***
*********************************************
set score off
set status off
set talk off
set bell off
set device to screen
@4,8 clear to 6,70
set color to r
@4,8 to 6,70 chr(220)
set color to w/b
@5,3 say "A U T O M A T E D  I N S T R U M E N T S  S E T T L E M E N T  S Y S T E
M"
@0,0 to 23,79 doub
@8,25 clear to 16,45
set color of box to n/r
set color of message to wg/gr
set color of highlight to nb/w
define popup main from 8,25 to 17,52
define bar 1 of main prompt "M  A  I  N   M  E  N  U" SKIP
define bar 2 of main prompt "------------------------" skip
define bar 3 of main prompt "Daily transaction entries";
  message "This module handles daily transaction entries"
define bar 4 of main prompt "End of the day process";
  message "This module processes daily transaction entries"
define bar 5 of main prompt "Report Generation";
  message "This module generates different reports"
define bar 6 of main prompt "Edit module ";
  message "This module edits entries"
define bar 7 of main prompt "Create Account";
 message "This module creates Account"
define bar 8 of main prompt "Exit main program";
  message "This module ends the main program for the day"
on selection popup main do proc1
activate popup main
  return
procedure proc1
do case
  case bar() = 3
    do clear
  case bar() = 4
    do proc
  case bar() = 5
    do report
```

```
  case bar() = 6
    do edit
  case bar() = 7
    do entries
  case bar() = 8
     deactivate popup
endcase

procedure report
define popup repot from 14,45 to 22,72
define bar 1 of repot prompt "Uncleared effects listing"
define bar 2 of repot prompt "Customer statement of Acc"
define bar 3 of repot prompt "Uncleared by branches list"
define bar 4 of repot prompt "Defferent Cheque & Values"
define bar 5 of repot prompt "General journal report"
define bar 6 of repot prompt "Daily Trial Balance report"
define bar 7 of repot prompt "Exit to main menu"
on selection popup repot do repo_sec
activate popup repot
save screen to mty
procedure repo_sec
do case
   case bar() = 1
     do report1
   case bar() = 2
     do report2
   case bar() = 3
     do report3
   case bar() = 4
     do report4
   case bar() = 5
     do report5
   case bar() = 6
     do trial
   case bar() = 7
     deactivate popup
@14,45 clear to 22,70
   return
endcase
```

```
*************************************************************************
* This section produces  statement of account for all account available
*************************************************************************
clear
run del cust.txt
set safety off
set talk off
set device to screen
close all
store space(4) to acc
@10,20  say  "Enter Account Number :" get  acc
read
USE ACC_FILE
LOCATE FOR C_ACC = ACC
IF FOUND()
  STORE ACC_NAME TO NAME
ENDIF
use Cust_file
set device to file 'cust.txt'
@3,20 say "Statement of Accounts"
@4,20 say "--------------------"
@5,45 say "Acc_num :"
@5,57 say acc
@5,65 SAY "NAME :"
@5,75 SAY NAME
N = 9
m = 7
i = 1
@m,1 say "S/No"
@m,7 say "Voucher Num."
@m,30 say "Description"
@m,54 say "Trans_date"
@m,70 say "Val_date"
@m,92 say "Debit"
@m,108 say "Credit"
@m,119 say "Balance"
@M+1,1 say "-----------------------------------------------------------------------------------------------------------
-------------------------"
Do while .not. eof()
   if Cus_acc = acc
      @N,1 say i pict "999"
      @N,7 say Voucher
      @N,25 say Cus_descr
      @N,55 say date_tran
      @N,70 say Value_date
      @N,82 say Debit
```

```
      @N,100 say Credit
      @N,115 say Balance
      skip
      N = N + 1
      i = i + 1
      else
       skip
      endif
Enddo
set device to screen
RUN EDIT CUST.TXT
clear
wait " "
clear
return
```

```
************************************************
* This module produce unclear effect listing report
************************************************
save screen to mty
set safety off
set talk off
run del unclear.txt
use trans_fl
set device to file 'unclear.txt'
@2,80 say "   INTERCITY BANK PLC"
@3,80 say "Uncleared Effects Listing"
@4,80 say "------------------------"
N = 8
m = 6
i = 1
@m,1 say "S/No"
@m,7 say "Bank Acc"
@m,21 say "Voucher Num."
@m,38 say "Cheque Num"
@m,51 say "code/ state"
@m,68 say "code/ Bank_name"
@m,107 say "Branch"
@m,118 say "Trans_date"
@m,129 say "Val_date"
@m,138 say "Tr_Ind."
@m,152 say "Tr_Amount"
Do while .not. eof()
   if Remarks = "U"
    * skip
   * else
   @N,1 say i pict "999"
   @N,7 say Account
   @N,21 say Voucher
   @N,38 say Che_Num
   @N,52 say Sta_code
   @N,56 say State
   @N,68 say Bank_code
   @N,73 say Bank_name
   @N,107 say Branch
   @N,119 say Tran_date
   @N,129 say Val_date
   @N,140 say Trans_Ind
   @N,145 say Amount
   skip
   N = N + 1
   i = i + 1
```

```
   else
   skip
   Endif
Enddo
set device to screen
clear
run edit unclear.txt
wait " "
clear
rest screen from mty
return
```

```
*****************************************************
*  This procedure handles daily transaction entries
*           using trans_fl.dbf
*                clear.prg
*****************************************************
save screen to mty
clear
set talk off
set exact off
set safety off
set bell off
set score off
set status off
set date british
set device to screen
close All
store "Y" to Ans
Do while uppe(Ans) = "Y"
   store space(4) to Mbank_Acc
   store space(14) to Mvouch_Num
   store space(13) to Mche_Num
   store space(2) to Mst_code
   store space(12) to Mbranch
   store space(30) to Mdescr
   store space(3) to Mbank_code
   store space(2) to Mtran_ind
   store 0 to Mamount
   store space(2) to mtran_type
   store space(13) to Mche_type
   store space(10) to mstate
   store ctod("  /  /  ") to mval_date
   store space(30) to mbank_name
   store "N" to as
 do while uppe(as) = "N"
   @5,21 to 7,60 doub
   @6,22 say "      TRANSACTION ENTRIES"
   @8,4 to 23,78
   @9,5 say "Enter Account Num : " get Mbank_Acc pict "@!X"
   read
   use acc_file
   locate for c_acc = mbank_Acc
     if found()
       @9,34 say  Acc_name
     endif
     if .not. found()
      @22,00 clear
```

```
    @22, 20 say "Error ! Account num. does not exit"
    wait
    clear
    rest screen from mty
    return
   endif
@11,5 say "Enter Voucher Num: " get Mvouch_Num pict "@!X"
@12,5 say "Enter Cheque Num : " get Mche_Num pict "@!X"
@13,5 say "Enter trans. Type :" get mtran_type
read
if mtran_type = "1" .or. mtran_type = "2"
@15,5 say "Enter State code : " get Mst_code
read
on escape cancel
sele A
use state
locate for state_code = Mst_code
 if found()
    @15,43 say "State :"
    @15,50 say state
    store state to Mstate
 endif
 if .not. found()
    @22,00 clear
    @22, 20 say "Error ! state code does not exit"
    wait +space(20) +"Press any key to continue..."
    rest screen from mty
    return
 endif
 @17,5 say "Enter Bank code : " get Mbank_code
 read
 sele B
 use bank_cod
 locate for code_no = Mbank_code
 if found()
   @17,43 say "Bank : "
   @17,50 say Bank_name
   store Bank_name to Mbank_name
 endif
 if .not. found()
    @22,00 clear
    @22, 20 say "Error ! Bank code does not exit"
    wait
    clear
    loop
*    return
```

```
 endif
  else
 endif
 @10,40 say "Enter Tran. Indic. [Dr of Cr]" get Mtran_ind pict "@!X"
 @19,5 say "Enter Branch Name :" get Mbranch
 @20,25 say "Decription  :" get Mdescr pict "@!X"
 @11,43 say "Enter cheque type :" get Mche_type pict "@!X"
 @13,43 say "Enter trans. Amount :" get Mamount
 @22,5 say "Enter Value date" get mval_date
 read
 on escape cancel
 @23,10 say "Please Check, is your Data  OK ?.."
 @24,16 say "press [Y or N or Q(quit)]" get as pict "!" valid as $ "YNQ"
 read
 if as = "Q"
   clear
   rest screen from mty
   return
 endif
 enddo
 @21,00 clear
******* This module writes information to the file ********
 use Trans_fl
 append blank
 repl Account with Mbank_Acc
 repl Voucher with  Mvouch_Num
 repl Che_Num with Mche_Num
 repl Branch with Mbranch
 repl sta_code with Mst_code
 repl state with Mstate
 repl Descript with Mdescr
 repl Bank_code with Mbank_code
 repl Bank_name with Mbank_name
 repl Tran_date with Date()
 if tran_type = "1" .or. tran_type = "2"
 repl Remarks with "U"
 else
 repl Remarks with " "
 endif
 repl tran_type with mtran_type
 repl Che_type with Mche_type
 repl Trans_ind with Mtran_ind
 repl Amount with Mamount
  clear
  @10,20 say "More information to the file [Y or N] ?.." get Ans pict "!" ;
  valid Ans $ "YN"
```

```
   read
   clear
Enddo
close all
wait "  "
clear
rest screen from mty
return

****end of clear. prg****
************************
```

```
*************************************************************
*  This section produces  report for individual branch ***
*************************************************************
run del bran_unc.txt
set safety off
set device to screen
clear
store space(3) to b_code
@10,20 say "Enter Bank code to be listed" get b_code
read
use bank_cod
locate for code_no = b_code
if .not. found()
   @15,20 say "Bank code does not exist"
   wait
   cancel
endif
if found()
  store bank_name to mbank
endif
set talk off
use trans_fl
set device to file 'bran_unc.txt'
@2,20 say mbank
@3,20 say "Uncleared Effects Listing"
@4,20 say "------------------------"
N = 8
m = 6
i = 1
@m,1 say "S/No"
@m,7 say "Bank Acc"
@m,21 say "Voucher Num."
@m,38 say "Cheque Num"
@m,53 say "code/ state"
@m,68 say "Branch_code"
@m,84 say "Branch_name"
@m,108 say "Trans_date"
@m,120 say "Val_date"
@m,130 say "Tr_Ind."
@m,141 say "Tr_Amount"
Do while .not. eof()
   if ((Remarks = "U") .and. (Bank_code = b_code))
   @N,1 say i pict "999"
   @N,7 say Account
   @N,21 say Voucher
   @N,38 say Che_Num
```

```
   @N,52 say Sta_code
   @N,56 say State
   @N,68 say Bank_code
   @N,73 say Branch
   @N,108 say Tran_date
   @N,119 say Val_date
   @N,130 say Trans_Ind
   @N,136 say Amount
   skip
   i = i + 1
   N = N + 1
    else
   skip
   Endif
Enddo
set device to screen
clear
wait "  "
clear
return
*** this procedure displays different type of cheque
*****************************************************
run del che.txt
set device to screen
clear
@3,10 say "cheque Type"
@4,4 to 10,24
@5,8 say "HOUSE"
@6,8 say "LOCAL"
@7,8 say "INTRA-BRANCH"
@8,8 SAY "INTER-STATE"
@9,8 say "INTER-BRANCH"
@7,25 say "Please, failure to enter the correct spellings"
@8,25 say "will attracts no report"
store space(15) to mcheque
@10,25 say "Enter Cheque type to be listed" get mcheque pict "@!X"
read
set taik off
use trans_fl
set device to file 'che.txt'
@2,20 say mcheque
@3,70 say "Uncleared Effects Listing"
@4,70 say "------------------------"
N = 8
m = 6
i = 1
```

```
@m,1 say "S/No"
@m,7 say "Bank Acc"
@m,21 say "Cheque_type"
@m,38 say "Cheque Num"
@m,53 say "code/ state"
*@m,64 say "State"
@m,68 say "Branch_code"
@m,84 say "Branch_name"
@m,108 say "Trans_date"
@m,120 say "Val_date"
@m,130 say "Tr_Ind."
@m,141 say "Tr_Amount"
Do while .not. eof()
   if ((Remarks = "U") .and. (Che_type = trim(mcheque)))
      @N,1 say i pict "999"
      @N,7 say Account
      @N,21 say Che_type
      @N,38 say Che_Num
      @N,52 say Sta_code
      @N,56 say State
      @N,68 say Bank_code
      @N,73 say Branch
      @N,108 say Tran_date
      @N,119 say Val_date
      @N,130 say Trans_Ind
      @N,136 say Amount
      skip
      i = i + 1
      N = N + 1
       else
         skip
   Endif
Enddo
set device to screen
run edit che.txt
clear
wait " "
clear
return
```

```
**************************************************
** This Procedure runs daily transaction closure ***
**************************************************
ave screen to mty
et talk off
et safety off
et bell off
et score off
et date british
lose all
lose indexes
ele A
se ledgers
ele E
se Trans_fl
ele C
se Acc_file
ele D
se Cust_file
**************This module is run when cheques are still hanging********
ele A
tore pro_date to date_ver
f date_ver = date()
 clear
 @10,20 say "Illegal operation, Transactions for today already processed"
 @15,20
 wait "                    press any key to continue...."
 clear
 est screen from mty
 eturn
 ndif
oll_summ = 0
sele E
   go top
 do while .not. eof()
   store tran_date to ver1_date
   store Val_date to ver2_date
   store (ver2_date - ver1_date) to ver3_date
   if ver2_date < date()
     store 0 to ver3_date
   endif
    if remarks = "U" .And. trans_ind = "CR" .And. tran_type = "1" .And. ver3_date >
);
       .And. tran_type <> "2" .And. tran_type <> "3" .And. tran_type <> "4"
      coll_summ = coll_summ + Amount
     do hanging
```

```
    endif
  sele E
    skip
Enddo
  sele A
      append blank
      repl Acc_code with "2000"
      repl Acc_name with "Chqs for collection"
      repl Details with "Chqs to be cleared"
      repl Debit with Coll_summ
      repl date with date()
  sele E
      store Val_date to Nval_date
      store Voucher to mvouch_num
      store Amount to Namount
      store Descript to Ndescript
      store Account to Naccount
  sele C
     locate for C_Acc = "2000"
        if found()
          store (C_amount - coll_summ) to Balan
          Repl C_amount with Balan
          Repl C_date with Date()
          Store Acc_name to Acc_nam
          store C_amount to Ubalan
        endif
  sele D
     append blank
     Repl Value_date with Nval_date
     Repl Voucher with mvouch_num
     Repl Cus_Descr with "Cheques to credit cust."
     Repl Debit with coll_summ
     Repl Date_tran with Date()
     if Ubalan < 0
       store (0 - Ubalan) to pdlbalan
       store str(pDlbalan)+"DR" to Un_ebalan
       repl Balance with Un_ebalan
     endif
     if Ubalan > 0
       store str(Ubalan)+"CR" to Cbalan
       Repl Balance with Cbalan
     endif
       Repl Cus_acc with "2000"

**********This module is run when cheques are due for clearing**********
sele E
```

```
go top
  Do while .not. eof()
    store tran_date to ver1_date
    store Val_date to ver2_date
    store (ver2_date - ver1_date) to ver3_date
    store 0.00 to Dbalan,Balan
    if ver2_date < date()
      store 0 to ver3_date
    endif
   if Ver3_date <= 0 .And. Trans_Ind = "CR" .And. remarks = "U" .And. tran_type =
"1".And. tran_type <> "2" ;
       .And. tran_type <> "4" .And. tran_type <> "3"
     do hanging2
 Endif
 skip
Enddo
*******This module autopost Instruments cleared through CBN clearing house****
   cred_summ = 0
   sele E
   go top
   do while .not. eof()
    if remarks = "U" .And. trans_ind = "DR" .And. tran_type = "4" .And. tran_type <>
"1" .And. tran_type <> "2";
            .And. tran_type <> "3"
      cred_summ = cred_summ + Amount
      repl Remarks with " "
      repl Remark2 with "C"
       do CBN_retu
     Endif
     sele E
     skip
   Enddo
 sele A
       append blank
       repl Acc_code with "3000"
       repl Acc_name with "CBN current Account"
       repl Details with "Chqs to be cleared"
       repl Credit with Cred_summ
       repl date with date()
  sele E
       store Val_date to Nval_date
       store Voucher to mvouch_num
       store Amount to Namount
       store Descript to Ndescript
       store Account to Naccount
  sele C
```

```
      locate for C_Acc = "3000"
         if found()
           store (C_amount - cred_summ) to Balan
           Repl C_amount with Balan
           Repl C_date with Date()
           Store Acc_name to Acc_nam
           store C_amount to Ubalan
         endif
   sele D
      append blank
      Repl Value_date with Nval_date
      Repl Voucher with mvouch_num
      Repl Cus_Descr with "Cheques from CBN"
      Repl Credit with cred_summ
      Repl Date_tran with Date()
      if Ubalan < 0
        store (0 - Ubalan) to pdlbalan
        store str(pDlbalan)+"DR" to Un_ebalan
        repl Balance with Un_ebalan
      endif
      if Ubalan > 0
        store str(Ubalan)+"CR" to Cbalan
        Repl Balance with Cbalan
      endif
        Repl Cus_acc with "3000"

****** This module autopost Instruments cleared through sister Branches *****
  sele E
      go top
      do while .not. eof()
         store tran_date to ver1_date
         store Val_date to ver2_date
         store (ver2_date - ver1_date) to ver3_date
         if ver2_date < date()
           store 0 to ver3_date
         endif

         if remarks = "U" .And. trans_ind = "CR" .and. tran_type = "2" .And. tran_type
<> "1";
             .And. tran_type <> "3"  .And. tran_type <> "4" .And. ver3_date <= 0
           store account to Naccount
           store amount to Namount
           store Val_date to Nval_date
           store Voucher to mvouch_num
           store Descript to Ndescript
  sele C
```

```
      locate for C_Acc = Naccount
      if found()
         store (C_amount - Namount) to Dbalan
         Repl C_amount with Dbalan
         Repl C_date with Date()
         store acc_name to Name
         store C_amount to Crbalan
      endif
    sele D
       append blank
       Repl Value_date with Nval_date
       Repl Voucher with mvouch_num
       Repl Cus_Descr with Ndescript
       Repl Credit with Namount
       Repl Date_tran with Date()
       if Crbalan < 0
         store (0 - Crbalan) to crlbalan
         store str(crlbalan)+"DR" to Cr_balan
         repl Balance with Cr_balan
       endif
       if Crbalan > 0
         store str(Crbalan)+"CR" to C_balan
         Repl Balance with C_balan
       endif
         Repl Cus_acc with Naccount

  sele A
       append blank
       repl Acc_code with Naccount
       repl Acc_name with Name
       repl Details with "Cheques to be cleared"
       repl Debit with Namount
       repl date with date()
     Endif
   skip
enddo
 sele E
    go top
    Do while .not. eof()
       store tran_date to ver1_date
       store Val_date to ver2_date
       store (ver2_date - ver1_date) to ver3_date
       if ver2_date < date()
         store 0 to ver3_date
       endif
```

```
      if remarks = "U" .And. trans_ind = "CR" .and. tran_type = "2" .And. tran_type
<> "1";
        .And. tran_type <> "3"  .And. tran_type <> "4" .And. ver3_date > 0
        do hanging2
      endif
      skip
  Enddo
*******This module posts non clearing instruments*************
  sele E
     go top
     do while .not. eof()
     if tran_type = "3" .And. trans_ind = "CR" .And. tran_type <> "1" .And. tran_type
<> "2";
          .AND. REMARK2 <> "C"
          repl Remarks with " "
          repl Remark2 with "C"
        store account to Naccount
        store amount to Namount
        store Descript to Ndescript
        store voucher to mvouch_num
        store Val_date to Nval_date
  sele C
     locate for C_Acc = Naccount
       if found()
          store (C_amount + Namount) to Dbalan
          Repl C_amount with Dbalan
          Repl C_date with Date()
          store acc_name to Name
          store C_amount to Clbalan
        endif
  sele D
     append blank
     Repl Value_date with Nval_date
     Repl Voucher with mvouch_num
     Repl Cus_Descr with Ndescript
     Repl credit with Namount
     Repl Date_tran with Date()
     if Clbalan < 0
       store (0 - Clbalan) to pdlbalan
       store str(pDlbalan)+"DR" to DRbalan
       repl Balance with DRbalan
     endif
     if Clbalan > 0
       store str(Clbalan)+"CR" to Cbalan
       Repl Balance with Cbalan
     endif
```

```
        Repl Cus_acc with Naccount
 sele A
     append blank
     repl Acc_code with Naccount
     repl Acc_name with Name
     repl Details with  Ndescript
     repl Credit with Namount
     repl date with date()
Endif
  sele E
     if tran_type = "3" .And. trans_ind = "DR" .And. Tran_type <> "1" .And.
Tran_type <> "2";
             .AND. REMARK2 <> "C"
           repl Remarks with " "
           repl Remark2 with "C"
        store account to Naccount
        store amount to Namount
        store Descript to Ndescript
        store voucher to mvouch_num
        store Val_date to Nval_date
  sele C
     locate for C_Acc = Naccount
       if found()
          store (C_amount - Namount) to Dbalan
          Repl C_amount with Dbalan
          Repl C_date with Date()
          store acc_name to Name
          store C_amount to Dlbalan
       endif
  sele D
     append blank
     Repl Value_date with Nval_date
     Repl Voucher with mvouch_num
     Repl Cus_Descr with Ndescript
     Repl Debit with Namount
     Repl Date_tran with Date()
     if Dlbalan < 0
       store (0 - Dlbalan) to pdlbalan
       store str(pDlbalan)+"DR" to DRbalan
       repl Balance with DRbalan
     endif
     if Dlbalan > 0
       store str(Dlbalan)+"CR" to Dbalan
       Repl Balance with Dbalan
     endif
       Repl Cus_acc with Naccount
```

```
  sele A
      append blank
      repl Acc_code with Naccount
      repl Acc_name with Name
      repl Details with  Ndescript
      repl Debit with Namount
      repl date with date()
   Endif
     skip
Enddo
**********This module test the completeness of daily postings******
    sele A
        go top
        Dr_sum = 0
        Cr_sum = 0
        store date() to mdate
        do while .not. eof()
          if date = mdate
            Dr_sum = Dr_sum + Debit
            Cr_sum = Cr_sum + Credit
            skip
            else
            skip
          endif
       Enddo
@10,20  say "Debit sum = "
@10,33 say Dr_sum
@12,20 say "Credit sum = "
@12,33 say Cr_sum
 if Cr_sum <> Dr_sum
   @15,20 say "Error ! Transactions not balanced"
 endif
wait +space(20)+"Press any key to continue.. "
clear
rest screen from mty


return
go top
repl pro_date with date()
return
procedure hanging
        store Val_date to Nval_date
        store Voucher to mvouch_num
        store Amount to Namount
        store Descript to Ndescript
```

```
  sele C
     locate for C_Acc = "1000"
        if found()
          store (C_amount + Namount) to Balan
          Repl C_amount with Balan
          Repl C_date with Date()
          Store Acc_name to Acc_nam
          store C_amount to U_ebalan
        endif
  sele D
     append blank
     Repl Value_date with Nval_date
     Repl Voucher with mvouch_num
     Repl Cus_Descr with Ndescript
     Repl Credit with Namount
     Repl Date_tran with Date()
     if U_ebalan < 0
       store (0 - U_ebalan) to pdlbalan
       store str(pDlbalan)+"DR" to Un_ebalan
       repl Balance with Un_ebalan
     endif
     if U_ebalan > 0
       store str(U_ebalan)+"CR" to Cbalan
       Repl Balance with Cbalan
     endif
       Repl Cus_acc with "1000"
  sele A
     append blank
     repl Acc_code with "1000"
     repl Acc_name with "Uncleared effect Acc."
     repl Details with "Chqs deposite"
     repl Credit with Namount
     repl date with date()
return

procedure CBN_retu
     store Val_date to Nval_date
     store Voucher to mvouch_num
     store Amount to Namount
     store Descript to Ndescript
     store Account to Naccount
   sele C
     locate for C_Acc = Naccount
        if found()
          store (C_amount - Namount) to Balan
          Repl C_amount with Balan
```

```
          Repl C_date with Date()
          Store Acc_name to Acc_nam
          store C_amount to Cnlbalan
        endif
   sele D
      append blank
      Repl Value_date with Nval_date
      Repl Voucher with mvouch_num
      Repl Cus_Descr with Ndescript
      Repl Debit with Namount
      Repl Date_tran with Date()
      if Cnlbalan < 0
        store (0 - Cnlbalan) to pdlbalan
        store str(pDlbalan)+"DR" to DRbalan
        repl Balance with DRbalan
      endif
      if Cnlbalan > 0
        store str(Cnlbalan)+"CR" to Cbalan
        Repl Balance with Cbalan
      endif
        Repl Cus_acc with Naccount
   sele A
      append blank
      repl Acc_code with Naccount
      repl Acc_name with Acc_nam
      repl Details with "Cheques for collection"
      repl Debit with Namount
      repl date with date()
********The total Value is posted to CBN current Account in ledgers/cust.file***********
return
procedure hanging2
      store Val_date to Nval_date
      store Voucher to mvouch_num
      store Amount to Namount
      store Descript to Ndescript
      store Account to Naccount
      REPL REMARKS WITH " "
      REPL REMARK2 WITH "C"
   sele C
      locate for C_Acc = Naccount
        if found()
          store (C_amount + Namount) to Balan
          Repl C_amount with Balan
          Repl C_date with Date()
          Store Acc_name to name
          store C_amount to cus_balan
```

```
        endif
******* this module auto-post cleared instruments into ledgers file*****
      sele A
        append blank
        repl Acc_code with Naccount
        repl Acc_name with name
        repl Details with "Chqs cleared"
        repl credit with Namount
        repl date with date()
******* this module auto-post cleared instruments into U/E account*****
        append blank
        repl Acc_code with "1000"
        repl Acc_name with "Uncleared effects"
        repl Details with "Chqs cleared"
        repl debit with Namount
        repl date with date()
*******this module transfers information to customer file*******
    sele D
      append blank
      Repl Value_date with Nval_date
      Repl Voucher with mvouch_num
      Repl Cus_Descr with Ndescript
      Repl Credit with Namount
      Repl Date_tran with Date()
      if Cus_balan < 0
        store (0 - Cus_balan) to pdlbalan
        store str(pDlbalan)+"DR" to Cu_balan
        repl Balance with Cu_balan
      endif
      if Cus_balan > 0
        store str(Cus_balan)+"CR" to Cbalan
        Repl Balance with Cbalan
      endif
        Repl Cus_acc with Naccount
*****Trans_fileed effect information**********
  sele C
      locate for C_Acc = "1000"
        if found()
          store (C_amount - Namount) to Balan
          Repl C_amount with Balan
          Repl C_date with Date()
          Store Acc_name to name
          store C_amount to cu_balan
        endif
  sele D
      append blank
```

```
      Repl Value_date with Nval_date
      Repl Voucher with mvouch_num
      Repl Cus_Descr with Ndescript
      Repl Debit with Namount
      Repl Date_tran with Date()
      if Cu_balan < 0
        store (0 - Cu_balan) to pdlbalan
        store str(pDlbalan)+"DR" to Cubalan
        repl Balance with Cubalan
      endif
      if Cu_balan > 0
        store str(Cu_balan)+"CR" to Cbalan
        Repl Balance with Cbalan
      endif
        Repl Cus_acc with Naccount
    rest screen from mty
return
*********************************************************************
*  This procedure modifies transactin file using voucher no as key
*********************************************************************
clear
set talk off
set exact off
set safety off
set bell off
set score off
*set status off
set date british
set device to screen
close All
sele e
use Trans_fl
store "Y" to Ans
do while uppe(ans) = "Y"
store space(4) to Nvouch
@10,10 say "Enter Voucher Number to Edit :" get Nvouch
read
clear
locate for Voucher = Nvouch
 if found()
    store Account to Mbank_Acc
    store Voucher to Mvouch_Num
    store Che_Num to Mche_Num
    store Branch to Mbranch
    store sta_code to Mst_code
    store state to Mstate
```

```
    store Descript to Mdescr
    store Bank_code to Mbank_code
    store Bank_name to Mbank_name
    store Trans_ind to Mtran_ind
    store Amount to Mamount
    store Tran_type to mtran_type
    store Che_type to Mche_type
    store Val_date to mval_date
    store "N" to as
do while uppe(as) = "N"
  @5,21 to 7,60 doub
  @6,22 say "      EDITING DATA "
  @8,4 to 23,78
  @9,5 say "Enter Account Num : " get Mbank_Acc pict "@!X"
  read
  use acc_file
  locate for c_acc = mbank_Acc
    if found()
      @9,34 say  Acc_name
    endif
    if .not. found()
      @22,00 clear
      @22, 20 say "Error ! Account num. does not exit"
      wait
      return
     endif
  @11,5 say "Enter Voucher Num: " get Mvouch_Num pict "@!X"
  @12,5 say "Enter Cheque Num : " get Mche_Num pict "@!X"
  @13,5 say "Enter trans. Type :" get mtran_type
  read
  if mtran_type = "1" .or. mtran_type = "2"
  @15,5 say "Enter State code : " get Mst_code
  read
  on escape cancel
  sele A
  use state
  locate for state_code = Mst_code
   if found()
     @15,43 say "State :"
     @15,50 say state
     store state to Mstate
   endif
   if .not. found()
     @22,00 clear
     @22, 20 say "Error ! state code does not exit"
     wait
```

```
      return
    endif
    @17,5 say "Enter Bank code : " get Mbank_code
    read
    sele B
    use bank_cod
    locate for code_no = Mbank_code
    if found()
      @17,43 say "Bank : "
      @17,50 say Bank_name
      store Bank_name to Mbank_name
    endif
    if .not. found()
       @22,00 clear
       @22, 20 say "Error ! Bank code does not exit"
       wait
       return
    endif
     else
    endif
    @10,40 say "Enter Tran. Indic. [Dr of Cr]" get Mtran_ind pict "@!X"
    @19,5 say "Enter Branch Name :" get Mbranch
    @20,25 say "Decription  :" get Mdescr pict "@!X"
    @11,43 say "Enter cheque type :" get Mche_type pict "@!X"
    @13,43 say "Enter trans. Amount :" get Mamount
    @21,5 say "Enter Value date" get mval_date
    read
    on escape cancel
    @23,10 say "Please Check, is your Data  OK ?.."
    @24,16 say "press [Y or N or Q(quit)]" get as pict "!" valid as $ "YNQ"
    read
    if as = "Q"
      cancel
    endif
    enddo
    @21,00 clear
******* This module writes information to the file ********
   use Trans_fl
   repl Account with Mbank_Acc
   repl Voucher with  Mvouch_Num
   repl Che_Num with Mche_Num
   repl Branch with Mbranch
   repl sta_code with Mst_code
   repl state with Mstate
   repl Descript with Mdescr
   repl Bank_code with Mbank_code
```

```
 repl Bank_name with Mbank_name
 repl Tran_date with Date()
 if tran_type = "1" .or. tran_type = "2"
 repl Remarks with "U"
 else
 repl Remarks with " "
 endif
 repl tran_type with mtran_type
 repl Che_type with Mche_type
 repl Val_date with mval_date
 repl Amount with Mamount
  clear
  @10,20 say "More Data to Edit [Y or N] ?.." get Ans pict "!" ;
  valid Ans $ "YN"
  read
  clear
Endif
Enddo
close all
set device to screen

wait " "
clear
return
**** end of prg***
clear
set talk off
close all
 = 1
cred = 0.00
 eb = 0.00
 eclare acc_nam[11],acc_cod[11],debit[11],credit[11]
 se acc_file
Do while .not. eof()
    if C_amount < 0
      store C_amount to debit[i]
      store 0 to credit[i]
      store acc_name to acc_nam[i]
      store c_acc to acc_cod[i]
    endif
    if C_amount > 0
      store C_amount to credit[i]
      store 0 to debit[i]
      store acc_name to acc_nam[i]
      store c_acc to acc_cod[i]
    endif
```

```
    if C_amount = 0
      store C_amount to credit[i]
      store 0 to debit[i]
      store acc_name to acc_nam[i]
      store c_acc to acc_cod[i]
    endif
     deb = deb + debit[i]
     cred = cred + credit[i]
     i = i + 1
   skip
Enddo
 i = 1
m = 8
n = 6
clear
@4,10 say "TRIAL BALANCE AS AT :"
@4,36 say  Date()
@5,10 TO 5,43 DOUB
@n,0 say "Acc_code"
@n,12 say "Acc_name"
@n,33 say "Debit"
@n,48 say "Credit"
do while i <= 11
@m,0 say acc_cod[i]
@m,12 say acc_nam[i]
@m,30 say debit[i]
@m,45 say credit[i]
i = i + 1
m = m + 1
enddo
@m,00 to m,56
@m+1,33 say deb
@m+1,45 say cred
@m+1,10 say "TOTAL :"
@M+2,00 to M+2,56
wait " "
clear
return
```

```
*******************************************************************************
* This section enables you to create new Account for customers and new branches
**
*     using Acc_file.dbf
*=============================================================================
==============
save screen to mty
set score off
set status off
set bell off
set talk off
store "Y" to ans
do while uppe(ans) = "Y"
  store space(4) to acc
  store space(20) to macc_name
  store 0.00 to mamount
  store "N" to as
  do while uppe(as) = "N"
   @5,20 say "Account creation section"
   @7,10 to 15,60
   @9,11 say "Enter Account number " get acc
   @11,11 say "Enter Account name " get macc_name
   @13,11 say "Enter the Amount " get mamount
   read
   @16,10 say "Data entries ok [Y/N/Q] ?" get as pict "!" valid as $ "YNQ";
      message "press Y to continue or N for correction or Q to quit"
   read
   if as = "Q"
    clear
    rest screen from mty
    return
   endif
   @16,10 clear to 16,60
   enddo
   use acc_file
   append blank
   repl C_acc with acc
   repl C_amount with mamount
   repl Acc_name with macc_name
   repl C_date with date()
   store c_amount to mmamount
   use cust_fil
   append blank
   replace balance with str(mmamount)+"CR"
   clear
   @10,20 say "More data entries [Y/N] ?" get ans pict "!" valid ans $ "YN"
```

```
   read
   @10,20 clear to 10,60
  Enddo
clear
rest screen from mty
return
**********************************
* PROCEDURE FOR PASSWORD
* PASS.PRG
**********************************
  SET COLOR TO W/B
  Clear
  set status off
  set talk off
  @6,0 CLEA TO 23,79
  @6,32 TO 8,41
  @7,33 SAY "SECURITY" COLO R/
  @10,12 TO 12,61 DOUBLE
  @11,14 SAY "ENTER YOUR PASSWORD:"
  SET COLO TO /GB+
  @11,37 CLEA TO 11,41
  TRIAL = 0
  DO WHILE TRIAL < 3
    STORE 0 TO I, CNT
    CPASS = ""
    J = 37
    DO WHILE CNT < 10 .AND. I <> 13
      J = J + 1
      I = 0
      DO WHILE I = 0
        I = INKEY()
      ENDDO
      IF I<>13
        @11,J SAY CHR(15)
        CNT = CNT + 1
        CPASS = CPASS + CHR(I)
      ENDIF
    ENDDO
    IF UPPER(CPASS) <> "CLEAR"
      @14,23 SAY CHR(7)
      IF TRIAL < 2
        @14,23 SAY "WRONG PASSWORD! TRY AGAIN"
      ELSE
        @14,23 SAY "WRONG PASSWORD! ACCESS DENIED"
        @23,23 SAY "PRESS ANY KEY TO CONTINUE..."
           K = 0
```

```
          DO WHILE K = 0
            K = INKEY()
          ENDDO
        CANCEL
      ENDIF
        TRIAL = TRIAL + 1
          @14,16 SAY SPACE(40)
        LOOP
      ENDIF
    IF UPPER(CPASS) = "CLEAR"
     @14,23 SAY " CORRECT PASSWORD! ACCESS ALLOWED"
     @23,23 SAY "PRESS ANY KEY TO CONTINUE..."
          K = 0
          DO WHILE K = 0
            K = INKEY()
          ENDDO
          EXIT
   ENDIF
 ENDDO
 SET COLOR TO W/B
 DO MAINPRG

END OF PASS.PRG
***************
```

```
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                 °--------------------------°
                 °Daily transaction entries °
                 °End of the day process    °
                 °Report Generation         °
                 °Edit module               °
                 °Create Account            °
                 °Exit main program         °
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         This module handles daily transaction entries
```

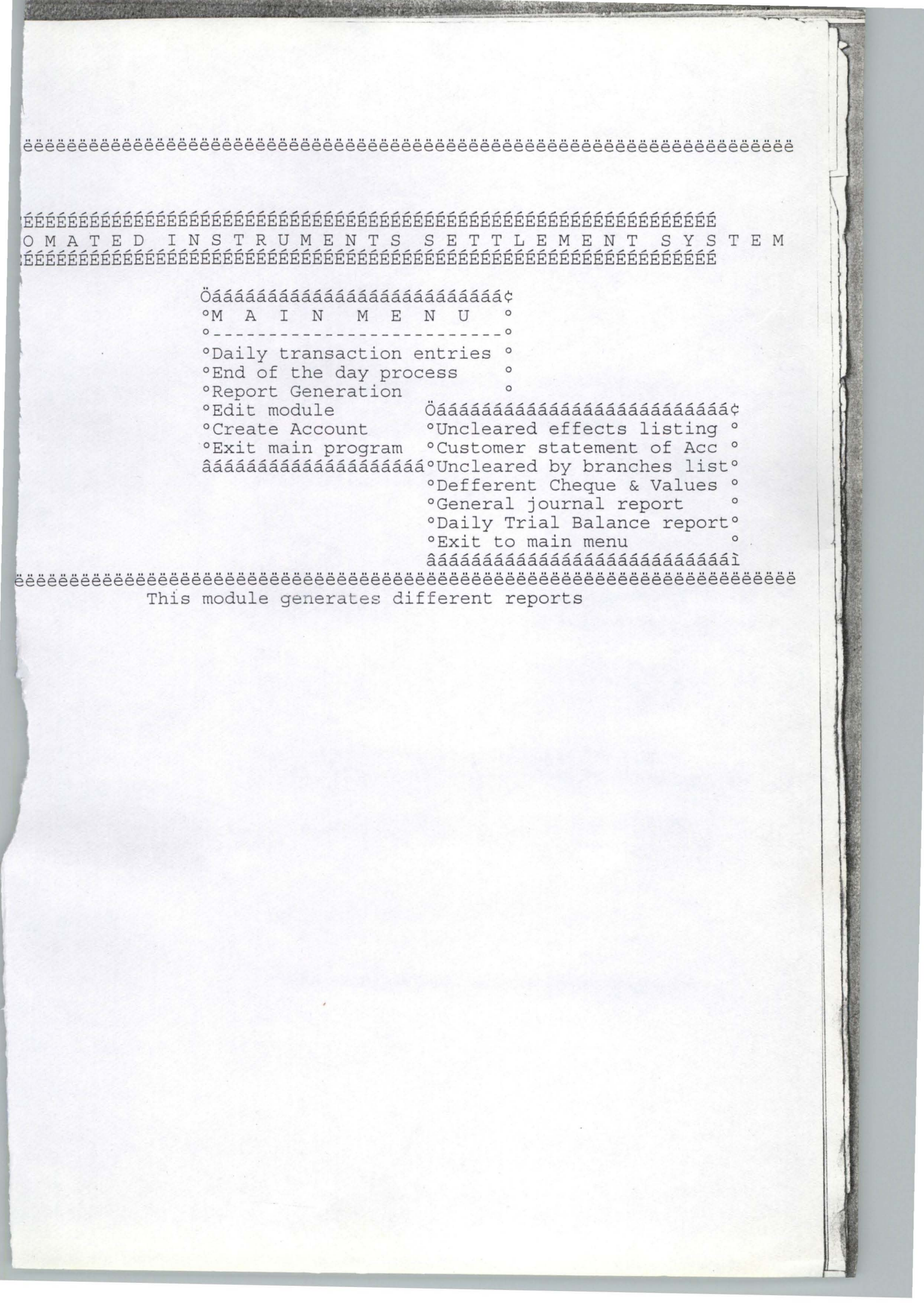
O M A T E D I N S T R U M E N T S S E T T L E M E N T S Y S T E M
M A I N M E N U
Daily transaction entries
End of the day process
Report Generation
Edit module
Create Account
Exit main program
Uncleared effects listing
Customer statement of Acc
Uncleared by branches list
Defferent Cheque & Values
General journal report
Daily Trial Balance report
Exit to main menu
This module generates different reports

INTERCITY BANK PLC

Uncleared Effects Listing

S/No	Bank Acc	Voucher Num.	Cheque Num	code/ state	code/ Bank_name	Branch	Trans_date	Val_date	Tr_Ind.	Tr_Amount
1	4003	606	500	16 Niger	005 Bank of the North	minna	10/20/99	11/06/99	CR	4000000.00
2	4001	2333	3333	12 Kano	011 First Bank of Nigeria	kano	10/15/99	11/03/99	CR	1000.00
3	5002	1111	6565	15 Lagos	046 Intercity Bank Ltd.	v/i	10/23/99	11/11/99	CR	5000.00
4	4001	2222	334	03 Bauchi	046 Intercity Bank Ltd.		10/30/99	11/17/99	CR	23444.00
										4029444

INTERCITY BANK PLC

TRIAL BALANCE AS AT : 10/30/99

cc_code	Acc_name	Debit	Credit
000	CBN CURRENT ACC	-85010000	0
001	PETER	-84820000	0
002	LUKE	-180000	0
003	GODDY	0	8000000
004	OKOSUN	0	1490000
001	INTER BRANCH-ABUJA	0	5000
5002	INTER BRANCH-V/I	0	65000
6000	INCOME ACCOUNT	0	742630500
7000	EXPENSE ACCOUNT	-660097000	0
1000	UNCLEARED EFFECT	-4598000	0
2000	Chqs for Collection	0	82514500
TOTAL :		834705000	834705000

INTERCITY BANK PLC
Statement of Accounts

Acc_num : 4001 NAME : PETER

No	Voucher Num.	Description	Trans_date	Val_date	Debit	Credit	
1	002	PMT BY LUKE	10/19/99	10/18/99	0.00	10000.00	84
2	003	PMT BY PETER	10/25/99	10/20/99	0.00	5000000.00	34
3	005	WITHDRAWAL	10/30/99	10/25/99	1000000.00	0.00	44
4	006	CHEQUES CLEARED	10/30/99	10/28/99	10000000.00	0.00	55