COMPUTERIZATION OF NATIONAL HOUSING FUND (NHF) LOANS OPERATIONS SYSTEM

A CASE STUDY OF UNION TRUST BUILDING SOCIETY LIMITED , MINNA BRANCH

BY

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CERTIFICATION

THIS PROJECT HAS BEEN READ AND APPROVED AS MEETING THE REQUIREMENT OF

THE SCHOOL OF SCIENCE AND SCIENCE EDUCATION, DEPARTMENT OF

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DEDICATION

I DEDICATED THIS PROJECT TO MY LATE MOTHER ,

MAY HER GENTLE SOUL REST IN PEACE (AMEN)

ACKNOWLEDGEMENT

With great reverence, I give thanks to god whose grace and provisions has led to this great project work. I wish to also acknowledge with profound gratitude the willing co-operation and great assistance receive from the numerous sources that all contributed to making this project a success in this course.

Thus, I wish to place on record my sincere gratitude and appreciation to my project supervisor Mr L.N. EZEAKO, infact , he took his time to proof- read the whole of the manuscripts and made necessary corrections and advice. I wish to equally appreciate the unrelenting assistance of my Head of Department DR K.R. Adeboye, I also thank my ever hardworking course co-ordinator PRINCE R. BADAMOSI and my lecturers from whom wealth of experience, knowledge and patience towards the completion of this course.

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Finally I wish to thank the Board, Management and the entire staff of Union Trust Building Society Limited for the honour and concern given to me before, and during the period of my course. I pray that God of blessing will abundantly reward you all. (Amen).

ABSTRACT

Today, we are in the era of information generation, collection and processing. The continual existence of any organisation depends on the volume of information generated and processed. This implies that, for any organisation to continue to exist, it will must possesses the current generated information which will aid its operation and decision to achieve the set objective, Mortgage Companies are not exceptions. Every result oriented Management will appreciate the need for a system that provides information in cheap, fast and less tasking manner. The manual ways of obtaining, recording, storing and retrieving of information makes the services of most Mortgage Institutions lacklustre, especially in meeting customers information demands.

The computer era has provided a better way of storing, manipulating and retrieving of data. This project particularly undertakes a study of Union Trust Building Society Limited, Minna Branch and seek to provide this bank with efficient management information system in the area of National Housing Fund (NHF) Loans Operations Systems in the Organisation.

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CHAPTER ONE

1.0 **INTRODUCTION**

Shelter is second in hierarchy of human need, after food. In view of this, the National Housing Fund (NHF) Decree of 1992 was promulgated by the Federal Government to create a pool of cheap fund for the development and renovation of property. This measure was instituted to achieve the laudable program of affordable shelter for the citizenry by the year 2000 AD. The loan under the National Housing fund (NHF) which must be for a residential accommodation can be granted for any of the following:

- (a) Building
- (b) Outright purchase
- (c) renovation of Existing property

1.1 **AIMS AND OBJECTIVES OF THE STUDY**

The main aim of this study is to computerize the National Housing fund loans operations of Union Trust Building Society Limited Minna. This can be achieved through the following objectives.

(i) To identify and defined clearly the problem needed to be solved.

(ii) To carry out feasibility studies and look at all possible alternative solutions. This will include the compilation of actual cost and lost-benefit analysis for each alternative solution proposed.

(iii) To carry out a more detailed study to ascertain:

- (a) The range of data types
- (b) Volume of data that are to be processed and

(c)   Exceptional conditions and problems associated with present working method.

(iv)   To analyze the data collected on the existing system and the objective of the   proposed system so as to come up with full speculation of user requirement.

(v)   To design the proposed system by working from the system requirements to produce a system specification. The system specification will be a detailed set documents which will provide details of all features of the system.

(vi)   To acquire the needed hand work and write the needed program.

(vii) To implement the design system.

(viii) To maintain and review the system from time to time so as to accommodate changes.

1.2   SIGNIFICANCE OF THE STUDY.

The importance of this study includes:

(i)   Design of a model system for computaterisation of National Housing fund lending operations at the branch offices of Union Trust Building society limited using Minna   Branch as a case study.

(ii)   Utilization of the characteristics of a good system in the proposed system which will comprise

    (a)   Simplicity

    (b)   Reliability

    (c)   Economical advantages

(iii) Introduction of efficiency in terms of speed and accuracy in National Housing Fund Operations in Union Trust Building Society Limited.

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(iv)   A base for further research in computerization of the function of the Union Trust Building Society Ltd.

1.3   **RESEARCH METHODOLOGY.**

The method of research will include the following:

(i)   feasibility study

(ii)   System investigation and fact finding

(iii)   System design

(iv)   System implementation and evaluation.

In (i) and (ii) direct interviews of Union Trust Building Society Limited Staff, personal observation and how the task are to be carried out and review of relevant literature will be applied.

In system Design, the input, process, output nomenclature will be strictly adhered to. On (iv) above , all technical know - how and experience will be pooled together to recommend a computer system, and to carry out the following testing.

(a)   Code testing

(b)   Specification test

(c)   Validation test

(d)   Valuation test

(e)   Certification test.

1.4   **SCOPE AND LIMITATION OF THE STUDY.**

The scope of the study is affected by size and time factor as well as financial input. It would have been wonderful to computerize the whole functions of the organization, due to the time limit and the significance of the National

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Housing Fund Program as it affects the citizenry, the company's key NHF loans operations would be ready for computerization by the end of this study. This project will cover mortgage lending as it affect National Housing Fund account ledger card, bank reconciliation statement and report generation.

1.5 COMPUTERIZATION OF SOME COMPANY'S TRANSACTION

Union Trust at its inception in 1992 was fully computerized in order to enhance the mortgage Banking operations. At present the organization has over 25 pc's at all its five (5) branches and cash centre; that is the organization has invested over =N= 6 million on both its hardware and software purchases.

The organization' operation has the computerization of ledger account over 95% of its operation.

LITERATURE REVIEW

2.0 HISTORICAL DEVELOPMENT OF MORTGAGE BANKING IN NIGERIA

In Nigeria, formal mortgage market was introduced with the establishment of the Nigeria Building Society (NBS) in 1956 with a share capital of =N=2.25 Million as a joint venture between the colonial development co-operation, the Nigeria Government an the formal Eastern Region. The government dissatisfied with the insignificant contribution of NBS established with the Federal Mortgage Bank of Nigeria by Decree no 7 of 1977 with an initial base of =N= 20 million and by 1980 expanded it to =N=150 Million. It assume the assets and liabilities of NBS. Although it was defined as an apex institution, the legal frame work was not sufficient to effect its apex role nor provided for the process of establishing a primary mortgage Bank. Since the creation of four (4) region until in 1983, state government established many housing corporations that were more of a construction companies than finance agencies. This, they cannot be described as mortgage banking institutions. However, some states are now restructuring and licensing their 's to play the role of mortgage banking.

With the restructuring of the mortgage market by the new National Housing Policy and the mortgage institutions decree No 53 of 1989, the market is now divided into two - tier; Federal Mortgage Bank of Nigeria (FMBN) as the apex (licensing and supervising) Mortgage bank and the second level of primary mortgage institutions. At the inception of the new structure, the

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thinking at FMBN (mid wife of the system) was that Nigeria at needed to make primary Mortgage Bank simultaneously unique and identifiable within the international context . It was therefore suggested that the " savings and loan company limited " model be adopted. Something however went wrong ,some where as savings and loans), Building Society, Mortgage finance, Trust and even loan and savings are now approved. The number of primary mortgage banks licensed as at 1996 stands at about 251. The recent popularity of primary mortgage banks have to do with the interest of interpreneurs cannot acquire main stream banking licence, owners of the finance companies who want to have access of the savings to the deposits, main stream banks that want access to the reclining of the National housing fund, laundering of not-too-good-money, and the lacunae in mortgage finance created by the preference of main stream banks.

2.1   **MORTGAGE INSTITUTIONS**

As defined in Nigeria by the mortgage institutions decree No53 of 1989 as institutions allowed to collect savings and deposits for creating mortgage assets are banks by any definition. Therefore is no basis for the disagreement between the primary institutions and the apex bank on the identify of these institutions as banks.

Mortgage Banking is the mobilization of financial resources especially shares, savings and deposits from surplus units in the economy for financing housing investment needs of the deficit units. While all banks participate in mortgage banking, only mortgage finance intermediaries - mortgage banks

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or institution specialize in mortgage assets creation. They provide loans to mortgagors while the mortgagors give mortgages (legal change to properties) to the primary mortgage banks.

The implified fear that as a result, FMBN will share the same status with primary mortgage banks is unfounded as FMBN remain an apex mortgage bank (same as CBN - Vis - a Vis other banks). As a solution therefore, one will refer to FMBN as the apex mortgage bank and the others as primary banks.

Mortgage banking societies and others while specialize in financial intermediaries for housing development. Whilst a Person may mortgage anything if he can find any one who will accept it, mortgage banking institutions can accept only interest in hand as security. Housing co-operation are housing finance institutions but not mortgage banking institution because they do not usually collect savings and deposits from public but mainly depend on state government budget allocation for direct housing development. Local thrift institution are usually not mortgage banking institutions as properties are rarely accepted as collateral. Thus mortgage banking as specialized development banking becomes obvious.

2.2 MORTGAGE BANKING INSTITUTIONS

(a) BUILDING SOCIETIES: Are centre to the British housing system. They originated as small savers club who contribute to finance. Successively the construction of their own houses and then terminate the

club. In the U.K and its former colonies especially in Africa and Asia, the concept of building societies are now legally defined and registered non-profit making financial institutions which accepts deposits and savings to finance housing starts and sales. It is non profit because it is a society, it distribute operating surplus that arise to numbers as dividends. As they now deal with non - members in terms of deposits and loan activities, building societies now maximize share holders or members wealth.

(b)   SAVINGS & LOANS ASSOCIATION (S & L.S):   These   are American equivalent of building society and dominate the mortgage market in the U.S.A and in a few Latin American countries. Like modern building societies, they depend on deposits as the main source of intermediating liabilities, they are small institutions with branches (current minimum equity requirement in Nigeria is only =N=20 million), and suffer from lack of a centre banking system that hand shift funds from one area to another when needed (jogen sec 3). As S & L's must rely on their market capacity, their borrowing powers are very limited . Thus the federal Home loan bank was created in the U.S.A and also the apex role given to Federal mortgage bank in Nigeria.

(c) MORTGAGE SOCIETIES :Are Davish type of institution developed on
   the co-operation principle. They cater for all income groups, individuals,
   institutional builders and local authorities, whether involved residential,
   industrial or commercial properties as well as ship builders. They accept
   mortgage as negotiable instruments which are divided into

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small denominations bearer bonds and traded over the counter on the stock exchange; thus having access to liquidity . Thus it is easy to re-finance and transfer existing commitments from old to new owners.

(d)   GERMAN - SAVING - For building system. Is based on contract savings concepts. The institution contract with a saver that if he achieves a minimum of savings and sufficient funds are available in the system, he will receive a specific multiple of his savings. This contract savings product has become popular with most mortgage banking institution in developing countries.

2.3   CASE STUDY

2.3.1 THE EMERGENCE OF UNION TRUST.

Union Trust Building Society limited (UTBs) was promoted by Nigerians and incorporated as a private limited liability company on 5th December, 1991, and licensed by the Federal mortgage Bank of Nigeria under mortgage institutions Decree No 53 of 1989 to engage in the mortgage Business.

On 1st July, 1992, the bank commenced operation at its head office located at Victoria Island Lagos. Union Trust has unique tradition of modelling its services to meet individual customers need and the customers right to a personal and f friendly banking services is guaranteed. Indeed, the services are diverse, ranging from all types of savings accounts, special Deposit

accounts, union Trust ACE and High yield investment certificate, union Trust flat Bonanza, union Trust prime account, commercial mortgage loan scheme, loan syndication and mortgage Administration scheme.

The affairs of the bank are handle by a selected team of seasoned professionals both at the Board and management level. The Board members include:-

(i)	LT. Gen.. M I Wushishi (RTD)	-	Chairman
(ii)	Mr Kola Ajaji	-	Managing Director/CEO
(iii)	Mr Sunday Adewasi	-	Member
(iv)	Mr John - Egri - Okwaji	-	"
(v)	Mr Chris Alabi	-	"
(vi)	Mr Joseph Ukachukwu	-	"
(vii)	Alhaji Z. Ahmed	-	"

The bank currently operates 5 branches and two cash centres. The branches are located at Victoria Island, Lagos, Lagos central branch at Oke - Arin - Lagos. The new Federal capital (Abuja), Minna Niger State, and Ise-Ekiti in ekiti State. The cash centres are located at IBB Modern market Suleja Niger State, and Alaba international market in Lagos.

2.3.2 **MINNA BRANCH**

Union Trust Building Society limited Minna Branch is the (3) Third branch office to be opened after Oke- Arin, and Abuja branches, the branch was officially opened on Friday 22nd April, 1994.

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Union Trust Building Society Ltd, Minna branch is located at 74, Bosso Road minna, the former united bank for Africa (UBA) PLC building at the popular Mobil roundabout which is referred to as the central Business Area of Niger State capital. UTBS occupies a one story building which the organization rented from Sadoh group of companies. The ground floor is occupied by Union Trust which serve a. .:; main branch while the upper floor was sublet to Niger Insurance PLC.

UTBS LTD system is made up of components called units which interact effectively with each other to generate reports based on processed data to meet its operations goals and aspiration. The units include:

(i)   Banking

(ii)   Accounts/finance and computer

(iii)   Mortgage Administration

The Branch office in Minna is headed by the Branch manager who is the chief executive of the branch. He oversees the function of the three head of units. he combines the administrative functions with his office. Such administrative functions as management of human resources as its affects the welfare and health of staff. The office of the branch manager oversees all correspondence entering or leading the branch office and keeps track of reports as its affect personal matters, equipment and transactions between the various kinds of files. The branch manger has the final authority in the branch office and he is responsible to his superior in the headquarters in Lagos.

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The finance/ computer unit oversees all transactions covering customers accounts, personnel accounts, payroll, account receivable, account payable as well as financial commitments of the organization. The unit is in - charge of budget for the branch and validates all spending in the branch. The head of unit is responsible to the branch manager.

Banking unit directly deals with members of the public who come to deposit or withdraw money as the case may be. She/He attends also to bank customers who come to make enquiries concerning their savings or other accounts. The unit head of baking is responsible to the branch manager.

The Mortgage unit is the unit that performs the main Mortgage function of the company. its main function includes retail lending, whole sale (corporate) lending, mortgage Administration scheme, keeping and maintenance of Mortgage files and generation of Mortgage satisfied.

2.4   NATIONAL HOUSING FUND OPERATIONS

The National Housing fund Decree No 3 of 1992 established the fund to facilitate the mobilization of financial resources from different sources for the provision of houses for Nigerians (especially how income workers) at affordable prices. The management of the fund is vested in FMBN. The sources of the fund are 10 percent of main stream banker loans and advances at an interest rate of 1 percent above the rate payable on current account; 20 percent non-life and 40 percent life funds of insurance companies must be invested in real estate, with at least 50 percent

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channelled through the fund at a maximum interest rate of 4 percent; 2.5 percent of basic salary of all Nigerian's earning income of =N=3,000= and above per annum at an interest rate of 4 percent; - budgetary allocation by the federal government. The proceeds of the fund are to be channelled by FMBN to primary mortgage banks for financial individuals efforts in house ownership. Over =N= 1 billion Naira of this fund is now available for disbursement.

2.4.1 **PURPOSE OF THE LOAN**

Loans under National Housing fund (NHF) which must be for residential accommodation can be granted for any of the following:

(a) Building

(b) Outright purchase

(c) Renovation of existing property.

2.4.2 **HOW YOU CAN BENEFIT FROM THE FUND**

If you are part of the one million registered contributors, you can benefit by doing the following:

* You must open an account with a primary mortgage institution like union Trust

* You must have contributed to the NHF for a period of not less than six (6) months.

* Apply to FMBN on the preservable form through union Trust Building Society LTD.

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* You are eligible to apply for an amount up to =N= 500,000 = or such other sums as the minister of works and Housing may prescribe from time to time.

* Funds disbursed shall not be more than 90% of the cost or value of the property to be Mortgaged

* Union Trust will provide you with 20 percent

* The funds shall provide the remaining 80%

2.4.3 MODE OF DISBURSEMENT

(a) For outright purchase, the fund shall be made available in a lump sum.

(b) In case of improvement, restructuring and construction, disbursement shall be on a schedule to be agreed with Union Trust Building Society Limited.

4.4 SECURITY AND LOAN RE-PAYMENT

The loan shall be secured by a first legal; mortgage on the property being financed. Union Trust Building Society Ltd shall repay the loan to Federal Mortgage Bank of Nigeria on your behalf and you will be expected to repay the loan over a maximum period of 25 years.

CHAPTER THREE

3.0 **SYSTEM DESIGN**

System is a set of elements or components that are formed and interact to accomplish goal and or objective. The elements themselves are the relationship between them determines how the system work. System have input, processing mechanism and output. System can be relatively simple or complex, close or open, stable or dynamic, Adaptive or non adaptive, permanent or temporary.

System design is a process similar to problem solving . There were system analysts in business long before the introduction of computers in organization. They were responsible for analyzing work methods and procedures in order to simplify work and to improve work flow. the analyses of the current problems is used at the beginning of system design to develop objectives for the proposal system. '

The analysis may lend to a number of possible alternative designs, for example, different combination of manual and computerized element may be considered. Once one alternative has been selected the purpose of the design stage is to work from the requirement specification to produce a system specification. The system specification will be a detailed set of input document, forms, reports. layouts which provide details of all features of the system.

The design of this new system is based on the detailed study of the existing system made. The system specification of the user's requirement arrived at clearing the analysis of the existing system. At this point of the system design the following question can be answered.

(i)   What is being done ?

(ii)   How is it being done ?

(iii)   How frequent does it occur ?

(iv)   How great is the volume of transaction or decision ?

(v)   How well is the task being performed

(vi)   Does a problem exist ?

(vii)   If a problem exists how serious is it ?

(viii) If a problem exists, what is the underlying cause ?

3.1   **OBJECTIVES**

In   order to answer the above questions system specification for the new system was arrived to achieved the objectives

(i)   To meet system requirement by specifying logical design elements such as inputs, outputs, procedures, files and data base as well as their descriptions

(ii)   To ensure that the new system supports the organizations performance.

(iii)   To meet users requirements

(iv)   To provide simple system

(v) To provide Hard ware / soft ware specification to manipulate the system.

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3.2   ELEMENTS OF DESIGN

The design elements include the output, inputs, files and procedures.

3.2.1 DESIGN OF OUTPUT.

Output refers to the results and information that are generated by the system. Most end- users consider output as the main reason for developing the system and basis on which they will evaluate the usefulness of the application. Majority of the end users have nothing or little to do with the operation of the information system or entering of data through work stations, but they will use output from the design.

The following were accomplished during design .

(i)   The information to present were determined

(ii)   It was decided whether it is to be displayed or printed

(iii) The acceptable format of presentation was used

(iv)   The distribution of the output to intended recipients and area of coverage as determined by the organization.

The format of column headings, totals and sub-totals of daily transaction were considered to make for easy interpretation of parts.

3.2.2 DESIGN OF FILES

In designing the files decisions pertaining to the nature and content of the 'files itself such as whether it is to be used for storing transaction details, historical data of reference information were taken into consideration. A total of your files were used. The ledger, one transaction file, a file containing the guarantor's records.

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Among the decisions made during file design are the following:

(i)   The data items to be included in a record format within the file.

(ii)   Length of each record, based on the characteristics of the data items on which it is based.

(iii) The sequencing or arrangement of records within the file (the storage structure, such as   sequential, index or relative).

3.3   **DATA MODELLING/ NORMALIZATION**

Data models define the structure of files and make clearer the data needs of a business. Data was segregated into a separate files and its integrate data structure when developing the data base.

Items which are independent of one another are separated into groups for recording in different files (Normalize). It was ensured that each of the four database file has a 'key' which uniquely identifies the object, the data describes. relationships between files were established, for example, the relationship between the key field (Account Number) and the other fields of an object.

The file structures used are drawn up and normalize. The normalize structures are as follows:

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3.3.1 LEDGER. dbf- MASTER FILE

Field	field name	Type	width	Dec
1.	ACCT -No	C	16	
2.	L- Name	C	16	
3.	F-Name	C	16	
4.	ADDRESS	C	38	
5.	L- DISBURS	C	12	2
6.	LOAN	N	12	
7.	DATE-REPAY	D	8	
8.	MONTH REPAY	N	10	2
9.	INT- RATE	N	4	2
10.	DATE	D	8	
11.	REFERENCE	C	12	
12.	DEBIT	N	12	2
13.	CREDIT	N	12	2
14.	ARREARS	N	12	2
15.	BALANCE	N	12	2
16.	AGE	N	3	
17.	DATE-DISBUS.	D	8	
18.	TOTAL - CRED	D	10	
19.	AGE - ARREARS	N	3	
20.	LDATECAL	N	8	
21.	LAST - P	N	10	
22.	DISB	N	10	

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3.3.2 <u>TRANSAC - DBF - For Daily Transaction</u>

Field	Field name	Type	Width	Dec
1.	ACCT -No	C	16	
2.	DATE	D	8	
3.	L-Name	C	16	
4.	F-NAME	C	16	
5.	LOAN	N	12	2
6.	REPAY	N	12	2
8.	TOT -CREDIT	N	12	2
9.	BALANCE	N	12	2
10.	ARREARS	N	12	2
11.	REPAY	N	12	2
12.	DISBURS	N	12	2

3.3.3 <u>CUSTREC. DBF- FILE FOR CUSTOMER'S RECORD.</u>

Field	Field name	Type	Width	Dec
1.	ACCT -No	C	16	
2.	L-Name	C	16	
3.	F-NAME	C	16	
4.	RES-ADRES	C	42	
5.	LOAN	N	12	2
6.	BUS- ADD	C	42	
7.	PHONE	C	10	
8.	POST-ADD	C	42	
9.	AGE	N	3	1

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3.3.2 TRANSAC - DBF - For Daily Transaction

Field	Field name	Type	Width	Dec
1.	ACCT -No	C	16	
2.	DATE	D	8	
3.	L-Name	C	16	
4.	F-NAME	C	16	
5.	LOAN	N	12	2
6.	REPAY	N	12	2
8.	TOT -CREDIT	N	12	2
9.	BALANCE	N	12	2
10.	ARREARS	N	12	2
11.	REPAY	N	12	2
12.	DISBURS	N	12	2

3.3.3 CUSTREC. DBF- FILE FOR CUSTOMER'S RECORD.

Field	Field name	Type	Width	Dec
1.	ACCT -No	C	16	
2.	L-Name	C	16	
3.	F-NAME	C	16	
4.	RES-ADRES	C	42	
5.	LOAN	N	12	2
6.	BUS- ADD	C	42	
7.	PHONE	C	10	
8.	POST-ADD	C	42	
9.	AGE	N	3	1

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Field	Field name	Type	Width	Dec
10.	OCCUPATION	C	10	
11.	POST -HELD	C	20	
12.	NATIONALITY	C	10	
13.	MAR-STATUS	C	10	
14.	AGE-LOAN	N	3	
15.	ADD-PROD	C	50	
16.	LOAN- PUR	C	42	
17.	INSU- COST	N	10	

3.3.4 **GUARANTOR. DBF- FILE FOR GUARANTORS RECORDS**

Field	Field name	Type	Width	Dec
1.	TO - WHOM	C	16	
2.	L-Name	C	16	
3.	F-NAME	C	16	
4.	RES-ADD	C	42	
5.	BUS- ADD	C	42	
6.	REL- APPL	C	22	
7.	DAT - BIRTH	C	8	
8.	EMPLOYER	C	38	
9.	OCCUPATION	C	20	
10.	EMP-DURA	C	15	
11.	NET-INC.	N	10	
12.	TOTAL-INC	N	10	
14.	AGE-LOAN	N	3	
13.	BANK-ACCT	C	15	

14.	BANK-ADD	C		40
15.	ADD-SECU	C		40
16.	OTHER - COMP	C		50
17.	OTHER- INFO	C		40

3.4 **DESIGN OF INPUT**

The following input design detail were considered

(i)   What data to input

(ii)   What medium to use

(iii)   How the data should be arranged or code

(iv)   The dialogue to guide users in providing input

(v)   Data items and transactions needing validation to detect errors.

The design decisions for handling input specify how data are accepted for computer processing. For the proposed system, data should be entered through work stations by suing source documents such s the company's application form for NHF loan, form for guarantor's records as well as the daily transactions.

The design of input includes specifying the means by which end- users and system operators direct the system on which action to take. For example, the system user interacting a work station is able to tell the system whether to accept input, produce a report or and processing.

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The system is designed to be on-line which include a dialogue or conversation between the system. Through the dialogue, users request for system service and tell the system when to perform a certain function.

The arrangement of messages and comments and as well as the placement of date, leading, and tittles on display screen or source documents, which is also part of the input design is well considered. The system is fully menu driven and is very user friendly.

3.5 DESIGN OF CONTROL

It assumed that mistakes will be made in entering data or in requesting the performance of certain functions. Some mistakes may be very mirror and inconsequential, while some can be so serious that they could result in erasing of data or improper user of the system. For example, when opening a National Housing Fund account, the account number which is a major distinguishing factor cannot be duplicated since the account numbers are automatically generated by the computer for any new account that is opened. Also during deletion of records, records marked for deletion is displayed for the operator to see and confirm that it is the required record marked for deletion.

In case of wrong entry, such records could be recalled and corrections made before savings. Every entry made must be confirmed before it is saved. Also the use of password is introduced in sensitive areas to ensure that only authorized users access the system.

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3.6 DESIGN FORMAT

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                          ┌─────────────────────┐
                          │  NATIONAL HOUSING   │
                          │  FUND MANAGEMENT    │
                          │ INFORMATION SYSTEM  │
                          └─────────────────────┘
                                    │
                              ┌───────────┐
                              │    NHF    │
                              └───────────┘
                                    │
   ┌──────────┬──────────┬──────────┴──────────────┬──────────┬──────────┐
┌──────┐  ┌──────┐  ┌──────┐                  ┌────────┐ ┌────────┐ ┌──────┐
│ NEW  │  │ VIEW │  │TRANS │                  │ REPORT │ │UP DATE │ │ EXIT │
│ ACCT │  │      │  │      │                  │        │ │        │ │      │
└──────┘  └──────┘  └──────┘                  └────────┘ └────────┘ └──────┘
   │                                               │          │
┌──┴────┬──────────┬─────────┐                     │    ┌─────┼──────┐
┌──────┐ ┌──────┐ ┌──────────┐                 ┌──────┐ ┌──────┐ ┌──────┐
│CUSTO.│ │LEDGER│ │GURANTORS │                 │ EXIT │ │AMEND │ │DELET │
│REC.  │ │      │ │REC       │                 └──────┘ └──────┘ └──────┘
└──────┘ └──────┘ └──────────┘
```

MAKING	SUM OF OUT APPL.	SUM OF OUT APPL.	AUCTION	NHF DISBUS	NHF REP ARR RECPT	ARR COLL & INT. PAYMT	ARR COLL NHF REPYMT

4.0 **SYSTEM IMPLEMENTATION**

Implementation embraces all the activities that take place to convert form the old system to the new. The system may be totally new, replacing an existing manual or automated system, or it may be a major modification of an existing system. In either case, proper implementation is essential to provide a reliable system to meet organisation requirements. There are three aspects of implementation, namely; personnel training, conversion procedures and the post implementation review.

4.1 **TRAINING**

Even well-designed and technically elegant systems can succeed or fail because of the way they are operated and used. Therefore, the quality of training given to the personnel involved with the system in various capacities helps or hinders, and may even prevent the successful implementation of an information system. Those who will be associated with or affected by the system must know in detail what their roles will be, how they can use the system and what the system will or will not do. Both system operators and users need training.

4.1.1 **Training System Operators**

The training of system operators must ensure that they are able to handle all possible operations both routine and extra ordinary. Training of operators must also involves data entry personnel.

The operator should be acquainted with the installation of new equipment such as a new computer system, special terminals or different data entry

equipment and how to turn on such equipment. Use it, power it down, and a knowledge of what constitutes normal operations and use. The operator should be conversant with what common malfunction may occur, how to recognise them, and what steps to take when they arise. As part of the training, operators should be given a trouble shooting list that identifies possible problems and remedies for them, as well as the names and the telephone numbers of individuals to contact when unexpected or unusual problem arise.

Training also involves familiarisation with run procedures, which involves working through the sequence of activities needed to use a new system on-going basis. These procedures allow the computer operators to become familiar with the action they need to take (such as mounting magnetic disks or tapes, copying files, changing printers or changing disk drives), and when these must occur.

4.2 **CONVERSION**

Conversion is the process of changing from the old system to the new one. There are four (4) methods of handling a system conversion. These include (i) Direct change over (ii) Parallel running (iii) Pilot running (iv) Staged change over.

(i) **DIRECT CHANGEOVER**

This method is the complete replacement of the old system by the new, in one more. It is bold more, which should be undertaken only when everyone concerned has confidence in the new system. When a direct changeover is

planned, system tests and training should be comprehensive, and the changeover itself planned in detail. This method is potentially the least expensive but the most risky.

For security reasons, the old system may be held in abeyance, including people and equipment. In the event of a major failure of the new system the organisation would revert to the old system.

(ii) **PARELLEL RUNNING**

This means processing current data by both the old and new system to cross-check the result.

Its main attraction is that the old system is kept alive and operational until the new system has been proved for at least one system cycle, using full live data in real operational environment of place, people, equipment and time. It allows the result of the new system to be compared with the older system before acceptance by the user, thereby promoting user confidence.

Its main disadvantage is the extra cost, the difficulty and (sometimes) the impracticability, of user staff having to carry out the different clerical operations for two systems (old and new) in the time available for one.

(iii) **PILOT RUNNING**

This is similar in concept to parallel running Data from one or more previous periods for the whole or part of the system in run on the new system after result have been obtained from the old system, and the new results are compared with the old. It is not as descriptive as parallel operation, since training is less critical. This method is more like an extended system, test, but, it may be considered a more practical form of changeover for organisational reasons.

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(iv) **STAGED CHANGEOVER**

This involves a series of limited size direct changeovers, the new system being introduced piece-by-piece. A complete part, or logical section, is committed to the new system wile the remaining parts of sections are processed by the old system. Only when the selected part is operating satisfactorily is the remainder transferred.

This method reduces the risk inherent in a direct changeover of the whole system and enables the analyst and users to learn from mistakes made as the changeover progresses.

Its maim problem is that it creates problem of controlling the selected parts of the old and new system. It also tends to prolong the implementation period.

4.3 **POST IMPLEMENTATION REVIEW**

After the system is implemented and conversion is completed, a review of the system is usually conducted by users and analyst alike. This is formal process to determine how well the system is working, how it has been accepted, and adjustments are needed.

The view is also important to gather information for the maintenance of the system. As a good system cannot be closed, it should be maintained to give to addition of more information for interval development, such as a new users or business activities and external requirements, such as new legal requirements, industrial standards or competition.

The most fundamental concern during post implementation review is determining whether the system has met its objectives, wanting to know if

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the performance level of the users have improved and if the system is producing the result intended. Inability of the system to achieve any of these objectives may raise doubt on the workability of the system.

The quality of the system output merit special attention. The concerns raised during the analysis and design about the accuracy of information, the timeliness of presentation, completeness and the appropriateness of format continue to indicate system quality. Reports information to be useful may need design; or the review reveal that information previously thought unnecessary must be provided after all. This issue may in turn affect input requirements.

Ease of use and tendency toward errors in input are fundamental question for the analyst to address during this review. Is the system easy to use? Are there adequate safe guards to prevent errors in input and to detect, report and correct them if they occur? If the answers to these question are not in the affirmative, the reliability and quality of the entire system may be doubted.

User confidence is generally also an indicator of system quality. The confidence that users, managers and operators have in the system are sure to affect its longevity and use. If evaluators find that confidence levels are not adequate, they must also determine why. The question of accuracy, completeness, timeliness, and usability routine to be central to the review.

Ease of use and benefits of use balance each other. It is generally found that system that are to use and that provide distinct benefits are accepted and well received by people. However, even when using a system that provides better performance, if the system itself is auckward to use, it is not

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uncommon to find that use of the system will be avoided. Thus ease of use is as important an attribute as reliability.

4.3.1 **REVIEW METHODS**

In general, the data collection methods of questionnaire, interview, observation, sampling, and record inspection are most useful for collecting details about the new system. In addition, supplemental methods will reveal additional information evaluates. For example, event (critical incident) logging requires users to record unusual or unexpected events that impact the system.

These events may reflect incidents that the system cannot handle because of incomplete design or activities that are not occurring in the prescribe 'manner.

Impact evaluation determine how system affect or change the cusses of the organisation in which they are installed. If new system are proposed and developed on the basis of increased speed, decrease errors, better integration of activities, reduced data redundancy, or improved productivity, system should be evaluated against these expectations, sampling records for error, assuring the value of through put, or observing uses wise provide concrete statistics of the of the affects of the impact of the system should also be compared with financial cost and benefits. Even if great productivity is achieve with a new system, management will want to know whether the changes produce the intended financial, service or competitive advantages. During the system proposal stage, the expectation of costs and benefits are developed. After implementation, the system is reviewed to compare the actual costs and benefits with the expectation.

How do users and other persons affected by a new system, such as customers, suppliers or internal managers feel about the new system? This simple reveals much about the future usefulness of the system. A system that is strongly disliked may not be in use long unless adjustments are made. Attitudes surveys, data collections of ideas and opinions about a system, provide this information pertinent questions probe individuals' feelings about the change in the amount of work they perform, quality of their efforts, quality of the service to customers, ease of use, or acceptance of the system by co-workers.

These review methods, emphasize the importance of collecting both quality/qualitative and subjective data to determine the suitability of the system. There is no substitute for effective review. Introspection of 'supposition have no place in system development, even after the system is implemented.

4.4 <u>COST AND BENEFITS</u>

Development costs, including the cost already incurred for the system's study on which the report is based, will be approximately #60,000.00 naira. There are distinct benefits to the new system, demise in three categories by developing the new system, the institution will be serving their customers faster and in good speed.

Owing to the new .Controls and improved procedures that is unnecessary delays will be reduced. A very conservative estimate indicates that this amount will total at least #120,000.00 the first year. More customer will be attracted to the institution, more new NHF accounts opened which means more revenue.

The system will produce benefits that are classified as intangible. Although they are both important and noticeable, it is difficult to place a naira value on them.

The new system has an anticipated life span of five years which the NHF a fully taken off, although in the later years, the cost of using and maintaining the system will increase. This is a normal expectation.

The system will pay for itself under 36 months. Hence the payback period for the proposed system is much better than average and is a cost effective investment.

If UTBS Ltd management wishes to adopt the new system it is estimated that the training of personnel, and implementation will require only 3 weeks. "A system which is as twice as another system and which cost twice as much should be considered equivalent on the basis of a cost benefit analysis". Some of these intangible benefits are:

(i) Better planning information

(ii) Better customer relations

(iii) More satisfied employee

(iv) Ability to add communication and avoid courier costs (if expansion occurs).

4.5 **MAINTENANCE**

Maintenance is a fact of life in the development of information system. However, the making of changes and adjustments do not necessarily signal correction of errors or the occurrence of problems.

Among the most frequent changes requested by end users is the addition of information to a report format. Information requirements may be reused as the result of system usage or changing operational needs. Perhaps oversights that occurred during the development process need t be corrected.

After the need will arise to capture additional data for storage in a data base or transaction file; or perhaps it will be necessary to add error, detection features to prevent system users inadventantly taking an udersirable action.

These are the realities of application maintenance, when they occur, however, they are indication that the system is being used and that it is serving a useful function rather than being "shelved" by the intended end users.

This system will be maintained by me/or for a period of 2 years for problems and errors attributable to the design.

4.6 **HOW THE SYSTEM OPERATES**

On booting the computer and entering Dbase 4 environment, the user, the sets defaults to the drive containing the diskette. Then he types DO NHFMIS, and the first screen appears introducing the project (fig. 4.1)

```
┌─────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────┐ │
│ │                                         │ │
│ │ THIS NHF OPERATION SYSTEM IS THE ARCHITECT│ │
│ │                                         │ │
│ │ OF ALHAJI ADO MOHAMMED RABIU, IN PARTICAL│ │
│ │                                         │ │
│ │ FULFILMENT FOR THE AWARD OF POST GRADUATE│ │
│ │                                         │ │
│ │ DIPLOMA IN COMPUTER SCIENCE, 1995/1996  │ │
│ │                                         │ │
│ │ SESSION AT FEDERAL UNIVERSITY OF TECHNOLOGY,│ │
│ │                                         │ │
│ │ MINNA                          ┐        │ │
│ │                             ___┘        │ │
│ │                                         │ │
│ └─────────────────────────────────────────┘ │
└─────────────────────────────────────────────┘
```

Fig. 4:1

The screen prompts the user to enter the return key. On obeying this command, he is ushered to the main menu screen (fig. 4:2). On highlighting the first letters of the winds on main menu the sub-menu under them will be 'accessed.

NEW ACCOUNT	VIEW TRANSACTION	REPORT	UPDATE	EXIT

fig. 4:2

Starting with NEW ACCOUNT on striking N at the key board will be required to enter the current password. On doing this, the ledger format will be displayed on the screen to enable him enter ledger record in opening new account. (fig. 4:3)
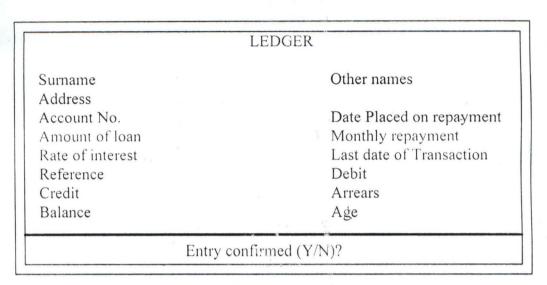
```
                          LEDGER

Surname                          Other names
Address
Account No.                      Date Placed on repayment
Amount of loan                   Monthly repayment
Rate of interest                 Last date of Transaction
Reference                        Debit
Credit                           Arrears
Balance                          Age

              Entry confirmed (Y/N)?
```

Fig. 4:3

If the entry is confirmed and no more records are taken to customers record format to open new customer's records (see fig. 4:4).

```
                     CUSTOMER'S RECORD

Surname                          Other Names
Residential Address
Postal Address
Occupation                       Position
Age of Applicant                 Nationality          Phone
Marital Status
Address of the property
Loan required                    Purpose of loan
Age of loan                      Insurance cost

              Entry confirmed (Y/N)?
```

Fig. 4:4

On confirming the entry and answering no to demand for more records, the user is taken to screen format for new guarantor's record (see fig. 4:5). This is the last record to enter and on confirming the entry. You are taken to the main menu.

```
                    GUARANTOR'S RECORD

Surname                         Other names
Residential Address
Business Address
Relationship to applicant
Occupation                      Duration of Employment
Employer                        Date of Birth
Net monthly income              Total monthly income Acct. No.
Bankers Address
Particulars of Property
Financial commitment
Other information

                    Entry confirmed (Y/N)?
```

On confirming the entry and answering no to demand for more records, the user is taken to screen format for new Guarantor's record (see fig. 4:5). This is the last record to enter and on confirming the entry. You are taken to the main menu.

```
                    GUARANTOR'S RECORD

Surname                         Other names
Residential Address
Business Address
Relationship to Applicant
Occupation                      Duration of Employment
Employer                        Date of Birth
Net monthly income              Total monthly income   Acct No.
Bankers Address
Particulars of Property
Financial commitment
Other information

                    Entry confirm (Y/N)?
```

Fig. 4:5

Highlighting "V" at the main menu enable the operator to view the records of the customers in any of the four (4) files (see fig. 4:6). On choosing any of the option between 1 to 4 will enable the user view the records in the corresponding file. Where there is no more record to view he is taken back to the main menu.

VIEW

ENTER ACCOUNT NO.

```
Which of the Records
1.  Ledger
2.  Customer's Records
3.  Guarantor's Records
```

```
Choose 1 - 3 above
```

Any of the 3 options (1-3 above) bring the file.
Any more records to view (Y/N)?

Fig. 4:6

Highlighting "T" at the main menu ushers the user to the screen for daily NHF transaction (see fig. 4:7) and fig. 4:8). At the first screen, the user will be requested to enter the account number on which the transaction is to be made. On entering the account number, the second screen will be displayed where the user can now assist the customer, to make either interest or NHF repayment, or enter the amount disbursed. On confirming entry and at the end of transaction, the user is returned to the main menu.

TRANSACTION

```
DAILY NHF TRANSACTION

ENTER ACCOUNT NUMBER
```

Fig. 4:7

{c} calculation of interest and age of Arrears.

```
Last Date of Calculation    /   /
Enter Today's Date          /   /
Enter Rate of Interest    [        ]
```

Fig. 4:12

On supplying the information on the screen the operation is carried out.

If "A" is highlighted, the user is confronted the amendment of record screen given four (4) options (see fig. 4:13).

```
Amendment of Records
Which of the Records?
1.  Ledger
2.  Customer's Records
3.  Guarantor's Records
4.  Transaction.

Choose 1-4 above
```

Amendment of ledger file
Enter Account number to amend
Any more account to amend? (Y/N)

On choosing any of the options, the user is requested to enter the account number of the customer; At the end of amendments the user is returned to amendments sub-menu.

If "D" is highlighted, the user is taken to deletion screen (see fig. 4;14). It is only three files that could be deleted upon.

```
Which of the Record
1.  Ledger
2.  Customers Record                    Fig. 4:14
3.  Guarantor's Record
       Choose 1 -3 above
```

Do you want this Record deleted? (Y/N)
Any more Record to Delete? (Y/N)

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If "V" is highlighted, the view screen appears (see fig. 4:15) . This enables the user to view the amendment on any of the three (3) files.

"V" Enter Account Number

┌─────────────────────────┐
│ Which of the Records   │
│ 1. Ledger   │
│ 2. Customer's Record   │
│ 3. Guarantor's Record │
└─────────────────────────┘

Choose 1-3 above
Any more Records View? Y/N
Fig. 4:15

If "R" is highlighted the user is returned to the main menu.

Highlighting "E" at the main menu returns the user to the DOS prompt.

```
Name                          Account Number
Loan granted                  Loan disbursed
Total Credit                  Balance
Arrears                       Age of Arrears
Repayment                     Disbursement
Date
```

Entry confirmed? (Y/N)

Any more Transaction? (Y/N)

On highlighting "R" at the main menu, the report screen appears (see fig. 4:9)

```
UTBS LTD
Monthly Report
Send Report to Printer? (Y/N)
Enter DATE OF REPORT / /
```

Report of 3 customers has been printed: Press any key to return to menu.

Fig. 4:9

Highlighting "U" at the main menu takes the user to the update screen (see fig. 4:11)

```
{C}   CALCULATION
{A}   AMENDMENT OF RECORD
{D}   DELETION OF RECORD
{V}   VIEWING OF RECORD
{R}   RETORN OF MAIN MENU

Enter the first letter of your choice
```

Fig. 4:11

On highlighting "C" in fig. 4:11, the screen for calculation of interest and

age of arrears appears (see fig. 4:12)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 The main aim of computerizing the National Housing Fund (NHF) operations in Union Trust Building Society Limited, Minna Branch is to make the operation of the NHF more quicker and much easier in the organization. This operation will complement the already computerized operation of the Bank

During the course of the study, it was noted there is no National Housing Fund (NHF) operation in the already computerized operation of the Bank. In view of this and to help achieve the aim to which NHF was established. There is the need therefore to computerize the National Housing operation, this will make the operation easier and to achieve efficiency.

It has been observed during the course of this study, the organization uses IBM compatibles personal computers which have transport devices and other peripherals like the key board, monitor, processor, Diskette, and tape streamer. The Software packages in use include Banker's Realm for banking and accounting, Lotus 1-2-3 for accounting / graphics and word perfect for word processing. The organization has committed over six million (=N=6m) Naira in the purchase and installation of over 25 pcs in the organizations Headquarters and other branches of the bank.

5.1.1 SPEEDY MORTGAGE OPERATIONS

Such National Housing operations like calculation of interest rate and loans repayments, which is not in the existing system, will help tremendously in

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(iii)   Other mortgage institutions may wish to adopt the system for better result in their institutions .

(iv)   The System Analyst who is also the author of this system is available to any institution or person that might be interested in the system, either to in stall or adopt it for use with little or no modification.

(v)   This system has the capacity of being used in a Local Area Network (LAN). It will save cost, improve services, and will build confidence in the minds of customers.

(vi)   The management of Union Trust Building Society Limited should take a serious step in computerizing the National Housing Fund Loans operations system at all its branches and making sure that the headquarters has a similar outfit to be able to coordinate and control transaction in the branches effectively.

5.3   CONCLUSION:

The goal for developing a computerize National Housing Fund Loans Operations which is expected to operates in a Local Area Network has been well achieved. The system is limited to NHF operations and mainly affects the mortgage department of the institution under study.

The system covers from opening new NHF account , granting of NHF loans ., interest payment, loan repayment to report generations.

Limitations due to finance and time contributed to limiting the work to Union Trust Minna Branch only. Though the operation of the bank is fully

computerized, the management should buy modern hardware and software. Given the present media coverage of the year 2000 Time Bomb! the management should readily commit scare resources to resolving the problem. Staff training of all the branches should be a routine in order to update the knowledge of the system users.

carrying out the overall operation of the Bank. In the new system, procedures to speedily and accurately do such calculations in record time has been built in to the system.

The beauty and joy of appreciating this new system cannot be described in words until one makes use of the software.

5.1.2 THE SYSTEM HARDWARE / SOFTWARE

The system hardware for the new system is a personal computer (pc), the pcs should either be intel processor or DX 486 pentium pro. Base on 166MHZ with secondary cache of not less than 256 KB and with good storage capacity of about 1.4GB. The DX 486 PCS are most appropriate operated for Local Area Network (LAN).

The Software has been designed using dBASE IV with some key characteristic it exhibits such as its simplicity, flexibility and reliability.

5.2 RECOMMENDATION

A worth while effort has been made to computerize National Housings Fund (NHF) operations. Although this study focused on Union Trust Building Society Limited Minna Branch, the proposed system will also be beneficial to other branches of Union Trust Building Society Limited all over the country. It is there by recommended that:

(i)   The proposed system be installed in Union Trust Building Society ltd, Minna Branch so as to take advantage of the good results of the proposed system like speed and accuracy

(ii) In the same way and for some reasons, the system recommend for use in the office and all other branches of the organization all over the country

APPENDIX I

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APPENDIX II

INTERVIEW AND OBSERVATION ANALYSIS

Q1.   OPERATION OF THE ORGANISATION

(a)   What are the operation/ services of your organization?

(b)   How are the accounts you 've mentioned, opened and processed ?

(c)   What aspects of the organization are computerized ?

(d)   What percentage of the organization operation has the computerization of ledger account   influence ?

(e)   What is / are your data processed ?

(f)   Is there every set internal working standards and procedures ?

(g)   What is the estimated cost of computerizing the entire organisation ?

Q2.   **HARDWARE AND PERIPHERAL**

(a)   What brand of computers are use in your organisation ?

(b)   How many system does your establishment have now?

(c)   What input - out put (Transport) devices and other peripheral do you use ?

Q3.   Which software packages do you use, and for what purpose ?

(b)   What other software packages do you use? (new purchased if available)

(e)   What degree of flexibility can be exercise with new software if any?

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******************NATIONAL HOUSING FUND LOANS OPERATIONS SYSTEM ***********

```
**SET DATA,  TALK,  ECHO,  STATUS, MACCOUNT
SET TALK OFF
SET ECHO OFF
SET STATUS OFF
SET DATE BRITISH
*SET CLEAR SCREEN
CLEAR
SET COLO TO W/R+
KOUNT = 0
A = 1
DO WHILE A <= 20
   @ A,4 SAY REPL (CHR(176),74)
   A = A+1
ENDDO
SET COLO TO W/B+
B = 19
DO WHILE B >=2
   @ B,8 SAY REPL (CHR(178),67)
   B = B - 1
ENDDO
SET COLO TO G/N+
@ 3,11 CLEA TO 18,71
@ 4,13 TO 17,69 DOUB
@ 7,18 SAY  " THIS NHF OPERATION SYSTEM IS THE ARCHITECT "
@ 9,18 SAY " OF ADO MUHAMMAD RABIU  IN PARTIAL"
@ 11,18 SAY " FUFILMENT OF AWARD OF POSTGRADUATE DIPLOMA IN"
@ 13,18 SAY " COMPUTER SCIENCE, 1995 / 96 AT FEDERAL UNIVERSITY"
@ 15,18 SAY " OF TECHNOLOGY, MINNA"
SET COLO TO G/N+*
@ 16,60 SAY CHR (017)+CHR(196)+CHR(196)+CHR(217)
SET COLO TO W/B+
WAIT " "
*EG=0
*SET CONSOL OFF
*DO WHILE EG<=350
*?
*EG=EG+1
*ENDD
*SET CONSOL ON
DO WHILE .T.
   *DO ASCII
   @ 5,14 clea to 16,68
   @ 2, 5 TO 4,75 DOUB
   @ 3, 6 SAY 'NEW ACCOUNT'
   @ 3, 20 SAY 'VIEW'
   @ 3, 30 SAY 'TRANSACTION'
   @ 3, 47 SAY 'REPORT'
   @ 3, 60 SAY 'UPDATE'
```

Q4   PERSONNEL

(a)   Are there training / education programs for your personnel e.g the operations and others.

b)   What is the iser satisfaction level for now?

Q5.   MANAGERIAL OPERATIONS

(a)   How has the degree of your computerization assisted in managerial operation e.g Decision making

(b)   What are the benefits of your data to managerial operation?

(c)   What control measures are in use in the organisation?
There are level of entries into the system based on user identification code and password.

Q6   MAINTENANCE

(a)   What is the nature of the maintenance support for both hardware and software acquired?

b)   What is the ability to recover in case of unforeseen delays and minor calamities   (circumstances)

```
    @ 3, 68 SAY 'EXIT'
    SET COLO TO R+
    @3, 6 SAY 'N'
    @3, 20 SAY 'V'
    @3, 30 SAY 'T'
    @ 3, 47 SAY 'R'
    @ 3, 60 SAY 'U'
    @ 3, 68 SAY 'E'
    *do while .t.
    STORE ' ' TO CHOICE
    @13, 40 GET CHOICE PICT '!'
    READ
    DO CASE
      CASE CHOICE = 'N'
            DO PASS1
      CASE CHOICE = 'V'
            DO VIEW
      CASE CHOICE = 'T'
            DO PASS2
      CASE CHOICE = 'R'
            DO PASS6
      CASE CHOICE = 'U'
            DO UPDATE
      CASE CHOICE = 'E'
      @ 10,15 SAY "PRESS ANY OF THE HIGHLIGHTED LETTERS FROM THE MENU ABOVE"
      WAIT
    ENDCASE
ENDDO
RETURN


************ PROGRAM TO OPEN NEW LEDGER ACCOUNT ***********
'SELE A
USE LEDGER INDEX LEDGER
SELE B
USE CUSTREC INDEX CUSTREC
SELE A
NEWACT = .T.
DO WHILE NEWACT
  ENTR = ''
  STORE SPACE(15) TO SURNAME,OTHERS,MACCOUNT,MOCCUP,MPOS,MINATION
  STORE SPACE(40) TO MADDRESS,MPAD,MADDP
  MLOAN=O
  MLOANP= '   '
  MINSURE = O  '
  MPHONE = '
  MSTATUS = '  '
  MAG=O
  STORE CTOD (' / / ') TO MDATEPAY
  MMONTH =O
  MINT=3
  STORE CTOD (' / / ' )TO MDATE,MDATEDIS
  STORE SPACE(10) TO MREF
  MDEBIT = 10
  MCREDIT = 10
  MARREARS =10
```

```
MBALANCE=10
MAGE=3
IF .NOT. EOF ()

  GO BOTT
ENDIF
MACCOUNT =ACCT_NO + 1
CLEA
DO WHILE .T.
  DO FOMAT
  READ
  @ 23,20
  SET COLO TO G/B+
  WAIT SPACE (25) + 'ENTRY CONFIRMED? (Y/N) ' TO ENTR
  SET COLO TO W/B
  IF UPPER (ENTR) = 'N'
       LOOP
  ELSE
  IF UPPER (ENTR) = 'Y'
  ENDIF
  ENDIF
  EXIT
ENDDO
APPEN BLANK
REPL L_NAME WITH SURNAME, F_NAME WITH OTHERS,ADDRESS WITH MADSRESS
REPL ACCT_NO WITH MACCOUNT, LOAN WITH.DATE_REPAY WITH MDATEPAY
REPL MONTH_REP WITH MMONTH,INT_RATE WITH MINT,DATE WITH MDATE
REPL REFENCE WITH MREF,DEBIT WITH MDEBIT,LAST_PAY WITH MCREDIT
REPL ARREARS WITH MARREARS,BALANCE WITH MBALANCE,AGE WITH MAGE
REPL DATE_DISB WITH MDATEDIS
*CLOSE DATABASES
EXIT
ENDDO
DO CUSTREC

************* FORMAT FILE NEW LEDGER RECORD********
CLEA
SET COLO TO W/B+
@ 3, 8 TO 22,72 DOUB
@ 5, 34 SAY 'LEDGER'
@ 6, 34 TO 6,39 DOUB
@ 7, 10 SAY 'SURNAME' GET SURNAME PICT '@A'
@ 7, 36 SAY' OTHER NAMES' GET OTHERS PICT '@A'
@ 9,10 SAY 'ADDRESS' GET MADDREE
@ 11,10 SAY 'ACCOUNT NO'
@ 11,21 SAY MACCOUNT
@ 11,37 SAY 'DATE PLACED ON REPAYMENT' GET MDATEPAY
@ 13,10 SAY 'AMMOUNT OF LOAN' GET MLOAN PICT '99999999.99'
@ 13,38 SAY 'MONTHLY REPAYMENT' GET MMONTH PICT '9999.99'
@ 15,10 SAY 'RATE OF INTEREST' GET MINT PICT '99'
@ 15,38 SAY 'LIST DATE OF TRANSACTION' GET MDATE
@ 17,10 SAY 'REFERENCE' GET MREF PICT '@A'
@ 17 36 SAY 'DEBIT ' GET MDEBIT PICT '99999999.99'
@ 19,10 SAY 'CREDIT' GET MCREDIT PICT '99999999.99'
@ 19 35 SAY 'ARREARS' GET MARREARS PICT '9999999.99'
```

```
IF UPPER(ENTR) = 'Y'
EXIT
ENDIF
ENDIF
ENDD
APPE BLANK
REPL TO_WHOM WITH MWHOM,L_NAME WITH SONAME,F NAME WITH
MORRE,RES_AD WITH;
 MBUSADD,REL_APPL    WITH    MREL_APP,DAT_BIRT    WITH
MDATEB,EMPLOYER WITH MEMPL.;
 OCCUPATION WITH MOCCUPA,EMP_DURA WITH MEMPL_DU,NET_IN
CLOSE DATABASES
ENDD
RETURN
*********** FORMAT PROGRAM'S RECORD ********
CLEA
SET COLO TO W/B+
@ 1,5 TO 23,72 DOUB
@ 2,28 SAY "GUARANTOR'S RECORD"
@ 3,28 TO 3,46 DOUB
@ 3,49 SAY 'ACCOUNT NO:' ,' ', LTRIM (STR(MACCOUNT))
@ 4,8 SAY 'SURNAME' GET SONAME
@ 4,35 SAY 'OTHER NAMES' GET MORRE
@ 6,8 SAY 'RESIDETIAL ADDRESS' GET MRESADD
@ 8,8 SAY BUSINESS ADDRESS' GET MBUSADD
@ 10,8 SAY 'RELATIONSHIP TO APPLICANT' GET MREL_APP
@ 11,8 SAY 'OCCUPATION' GET MOCCUPA
@ 11,40 SAY 'DURATION OF EMPL.' GET MEMPL_DU
@ 12,48 SAY 'DATE OF BIRTH' GET MDATEE
@ 12,8 SAY 'EMPLOYER' GET MEMPL
@ 13,8 SAY 'NET MONTHLY INCOME'
@ 14,10 GET MNETIN
@ 13,30 SAY 'TOTAL MONTHLY INCOME'
@ 14,35 GET MTOT
@ 13,52 SAY 'ACCOUNT NO'
@ 14,52 GET MBANACCT
@ 16,8 SAY 'BANK ADDRESS' GET MBANADD
@ 18,8 SAY 'PARTICULARS OF PROPERTY' GET MADDSEC
@ 20,8 SAY 'FINANCIAL COMITMENTS' GET MOTH_COM
@ 22,8 SAY 'OTHER INFORMATION' GET MOTH_INF
****** PROGRAM  TO OPEN NEW LEDGER ACCOUNT**********
SELE A
USE LEDGER INDEX LEDGER
SELE B
USE CUSTREC INDEX CUSTREC
NEWACT = .T.
DO WHILE NEWACT
ENTR = ''
S T O R E S P A C E ( 1 5 ) T O
SURNAME, OTHERS, MACCOUNT, MOCCUP, MLOAONP
STORE SPACE(40) TO MADDRESS, MPAD, MADDP
MAGE=O
STORE SPACE(12) TO MNATION, MPHONE, MSTATUS
MINSURE=O
MLOAN=O
```

```
REPL AGE_LOAN WITH MAGEL, ADD_PROP WITH MADDP, LOAN_PUR WITH MLOANP
REPL INSU_COST WITH MINSURE
*ENDD
*CLOSE DATABASES
SELE C
DO GARANTOR
\********** FORMAT  PROGRAM  FOR CUSTOMERS' RECORD
**********
SET COLO TO W/B+
@ 3,4 TO 23,72 DOUBLE
@ 4,28 SAY "CUSTOMER 'S RECORD"
@ 5,28 TO 5,44 DOUB
@ 5,48 SAY 'ACCOUNT NO:' +' '+LTRIM(MACCOUNT))
@ 6,6 SAY 'SURNAME:' GET SURNAME
@ 6,38 SAY 'OTHERNAME:' GET OTHER
@ 8,6 SAY 'RESIDENTIAL ADDRESS:' GET MADDRESS
@ 10,6 SAY 'POSTAL ADDRESS' GET MPAD
@ 12,6 SAY 'OCCUPATION ' GET MOCCUP
@ 12,34 SAY 'POSITION HELD' GET MPOS
@ 14,6 SAY 'AGE OF APPLICANT' GET MAGE PICT '999'
@ 14,28 SAY NATIONALITY' GET MNATION
@ 14,53 SAY 'PHONE' GET MPHONE
@ 16,6  SAY 'MARITAL STATUS' GET MSTATUS
@ 16,36 SAY 'LOAN REQUIRED, GET MLOAN PICT '99999999.99'
\@ 17,6  SAY 'ADDRESS OF THE PROPERTY TO BE MORTGAGED;'
@ 18,6  GET MADDP
@ 20,6  SAY 'THE PURPOSE OF LOAN ' GET MLOANP
@ 21,26 SAY 'INSURANCE COST'
@ 21,50 SAY 'AGE OF LOAN'
@ 22,26 GET MINSURE PICT '99999999.99'
@ 22,50 GET MAGEL
********* PROGRAM TO OPEN GUARANTOR'S RECORD **********
CLEA
KOUNT=O
*GARANT= .T.
ENTR = "
STORE SPACE(1) TO MORE
STORE    SPACE(15)    TO
SONAME, MORE, MWHOM, MORRE, MEMPL-DU,MBANACCT
STORE    SPACE   (40)TO
MRESADD,MEMPL,MBUSADD,MBANADD,MADDSEC,MOTH_INF
STORE SPACE(25) TO MEMPL
STORE SPACE(20) TO MREL_APP,MOCCUPA
STORE SPACE(40) TO MOTH_COM
MNETIN=10
MTOT=10
STORE CTOD ('/ / ')TO MDATEB
USE GUARANTOR
IF .NOT. EOF()
GO BOTT
ENDIF
DO FORMATS
READ
WAIT SPACE(26) + 'ENTRY CONFIRMED? (Y/N)' TO ENTR
SET COLO TO W/B
```

```
*DO WHILE CUSTREC
ENTR = ' '
*STORE SPACE (40) TO MADD,MPAD,MLOANP
*STORE SPACE (10) TO MPHONE,MOCCUP,MNATION,MSTATUS
*STORE SPACE (20) TO MPOS,SNAME,OTHERS
MAGEL =0
*MLOAN = 10
*MACCOUNT=10
*MAG = 3
*STORE SPACE (50) TO MADDP
*MINSURE = 0
SELE B
*USE CUSTREC INDEX CUSTREC
IF .NOT. EOF ()
GO BOTT
ENDIF
DO WHILE .T.
 DO CUSTFORM
READ
WAIT SPACE(26) + 'ENTRY CONFIRMED? (Y/N)' TO ENTR
SET COLO TO W/B
IF UPPER (ENTR) = 'N'
LOOP
ELSE
IF UPPER (ENTR) = 'Y'
EXIT
ENDIF
ENDIF
EXIT
ENDD
SELE B
APPE BLANK
REPL L_NAME WITH SURNAME
REPL F_NAME WITH OTHERS,BUS_ADD WITH MADDRESS,ACCT_NO
WITH MACCOUNT
REPL RES_ADD WITH MADDRESS, PHONE WITH MPHONE, POST_ADD
WITH MPAD
REPL AGE MAGE, OCCUPATION WITH MOCCUP, LOAN WITH MLOAN
REPL POST_HELD WITH MPOS, NATIONAL MNATION,
MAR_STATUS WITH MSTATUS
```

```
STORE CTOD (' / / ') TO MDATEPAY
STORE SPACE(10) TO MMONT
MINT=O
STORE CTOD (' / / ') TO MDATE,MDATEDIS
STORE SPACE(10) TO MREF
MDEBIT=O
MCREDIT=O
MARREARS=O
MBALANCE=O
MAGE=O
IF .NOT. EOF()
GO BOTT
ENDIF
MACCOUNT=ACCT_NO + 1
CLEA
DO WHILE .T.
DO FOMAT
READ
@ 23,20
SET COLO TO G/B+
WAIT SPACE(25) + 'ENTRY CONFIRMED? (Y/N) ' TO ENTR
SET COLO TO W/B
IF UPPER(ENTR)= 'N'
LOOP
ELSE
IF UPPER(ENTR)= 'Y'
ENDIF
ENDIF
EXIT
ENDD
SELE A
APPEND BLANK
RELP L_NAME WITH SURNAME,F_NAME WITH OTHERS,ADDRESS WITH
MADDRESS
REPL ACCT_NO WITH MACCOUNT, LOAN WITH MLOAN,DATE_REPAY
WITH MDATEPAY
REPL MONTH_REP WITH MMONTH, INT_RATE WITH MINT,DATE WITH
MDATE
REPL REFENCE WITH MREF,DEBIT WITH MDABIT,CREDIT WITH
MCREDIT
REPL ARREARS WITH MARREARS,BALANCE WITH MBALANCE,AGE WITH
MAGE
REPL DATE_DISB WITH MDATEDIS
*CLOSE DATABASES
EXIT
ENDD
SELE B
DO CUSTREC
************** PROGRAM FOR DIALY TRANSACTION *********
CLEA
ACCOUNT=O
STORE SPACE(1) TO CHECK,MORE
SELE A
USE LODGER INDEX LEDGER
SELE B
```

```
'USE TRANSACT
DO WHILE .T.
CLEA
REPAY = O
MDISBUS = O
STORE CTOD(' / /') TO MD
SET COLO TO W/B+,R
@ 12,20 TO 17,60
@ 14,22 SAY 'DAILY NHF TRANSACTION'
@ 16,22 SAY 'ENTER ACCOUNT NUMBER' GET ACCOUNT PICT '@B999'
READ
SELE A
SEEK ACCOUNT
DO WHILE .T.
CLEA
SET COLO TO W/B,G
@ 3,8 TO 21,72 DOUB
@ 5,25 SAY 'DAILY NHF TRANSACTION'
@ 6,25 TO 6,50
@ 8,10 SAY 'NAME:'
@ 8,15 SAY A-> L_NAME + LTRIM(A-> F_NAME)
@ 8,40 SAY 'ACCOUNT NUMBER: '
@ 8,58 SAY ACCOUNT PICT '@B9999'
@ 10,10 SAY 'LOAN GRANDED'
@ 10,24 SAY A->LOAN PICT '@B.99'
@ 10,40 SAY 'LOAN DISBURSED'
@ 10,60 SAY A->L_DISBURS PICT '@B99999999.99'
@ 12,10 SAY 'TOTAL CREDIT:'
@ 12,24 SAY A->CREDIT PICT '@B99999999.99'
@ 12,40 SAY 'BALANCE:'
@ 12,49 SAY A-> BALANCE PICT '@B99999999.99'
@ 14,10 SAY 'ARREARS:'
@ 14,19 SAY A-> ARREARS PICT 'B99999999.99'
@ 14,20 SAY 'AGE OF ARREARS'
@ 14,55 SAY AGE_ARREA PICT '@B'
@ 16,10 SAY 'REPAYMENT' GET REPAY PICT '99999999.99'
@ 16,40 SAY 'DISBURSMENT' GET MDISBUS PICT '99999999.99'
@ 18,10 SAY 'DATE:' GET MD
READ
@ 23,25 SAY 'ENTRY CONFIMED? (Y/N)' GET CHECK
READ
IF UPPER(CHECK) = 'Y'
EXIT
ENDIF
ENDD
SELE B
APPE BLANK
REPL ACCT_NO WITH ACCOUNT,DATE WITH MD,L_NAME WITH
A->L_NAME,;
F_NAME WITH A->FNAME,LOAN WITH A->LOAN,REPAYMENT WITH
REPAY,;
DISBURS WITH MDISBUS
SELE A
REPL DATE WITH MD
IF MDIEBUS = O
`
```

```
        UNION TROST BUILDING SOCIETY LTD.              25/03/98
   LIST OF NHF DISBURSEMENT MADE DURING THE MONTH OF :
S/NO  ACCT           NAME       DISBURS   REPAYMENT   BALANCE    ARREARS   AGE
--------------------------------------------------------------------------------
  1  201010    AD  MOHAMMED RABIU         0.   1200.00    -1200.0      4200  3
  2  201010    AD  MOHAMMED RABIU    300000.   1500.00    -1500.0      3900  2
  3  201010    AD  MOHAMMED RABIU    100000.   2000.00    -2000.0      4400  1
  4  201010    AD  MOHAMMED RABIU         0.   1300.00    -1300.0      3700  2
  5  201010    ado MOHAMMED RABI          0.      0.00        0.0      2600  0
  6  201011    OMAR GARBA   ZUNGER        0.      0.00        0.0         0  0




               REPORT OF 7     CUSTOMERS HAS BEEN PRINTED

ress any key to continue...
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LIST OF NHF DISBURSEMENT MADE DURING THE MONTH OF :

/NO	ACCT	NAME	DISBURS	REPAYMENT	BALANCE	ARREARS	AGE
1	201010	AD MOHAMMED RABIU	0.	1200.00	-1200.0	4200	3
2	201010	AD MOHAMMED RABIU	300000.	1500.00	-1500.0	3900	2
3	201010	AD MOHAMMED RABIU	100000.	2000.00	-2000.0	4400	1
4	201010	AD MOHAMMED RABIU	0.	1300.00	-1300.0	3700	2
5	201010	ado MOHAMMED RABI	0.	0.00	0.0	2600	0
6	201011	OMAR GARBA ZUNGER	0.	0.00	0.0	0	0

ress any key to continue...