COMPUTERIZATION OF HOUSING ALLOCATION SYSTEM:

A CASE STUDY OF HOUSING UNIT MINISTRY OF FEDERAL CAPITAL TERRITORY ABUJA.

By

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APPROVAL

This project has been examined and found acceptable in fulfillment of the requirement for the award of post - graduate diploma in Computer Science, Federal University of Technology, Minna.

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CERTIFICATION

I hereby certify that this project work was carried out by Osiyi Sunday David to meet the requirement for the award of post Graduate Diploma in Computer Science of Federal University of Technology, Minna.

DEDICATION

This project is dedicated to my late parents.

ABSTRACT

Housing is one of the essential needs of man. Therefore, it's adequate provision (quantitatively and qualitatively) should not be left entirely in the hands of individuals and private estate developers. Government at all levels are expected to contribute to this end. One of the fundamental functions practised by housing managers is the allocation of public housing units. The means and methods used in this regard by the housing unit, Ministry of Federal Capital Territory, Abuja form the basis of this project. Among the topics presented in the write - up are introductory and conceptual issues, research methodology, statement of problems aims and objectives, relevant literature and a review of the existing manual system. Based on the findings of the analysis, a new (Computer-based) system has been designed for promoting efficiency in housing allocation and record keeping in the study area. Programs written in dbase iv language are presented to help mitigate the drudgery and inefficiency that characterized the old system. It is hoped that the proposals made will be useful to organizations that perform similar functions.

OSIYI S. D. 2000

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GENERAL INTRODUCTION

1.1 *Introduction.*

No doubt, information technology stands out as the greatest technological feat achieved by man in the 20th Century. Today, especially in developed countries, Computer Technology is applied in virtually all spheres of human endeavour. A computer may be described as an electronic device which works under the control of a stored program, automatically accepting and processing data to produce information which is the result of that processing (French, 1989). The resulting information (output) is useful for decision making in an Organization.

In developing nations like Nigeria, much effort are currently being made by the public and private sectors to fully take advantage of the tremendous uses of Computers in their day to day business. Though these efforts are commendable, it is pertinent to note that many demanding activities, particularly in the public sector are yet to experience the wonders of this new technology.

Information relating to public housing management is one of such issues requiring the services of computer in the country. Housing management involves various, but interrelated functions. Prominent among these functions is the allocation of available housing stock to persons in need. Public housing in Nigeria are scarce commodities, which need to be rationally shared among an avalanche of people in housing need. To ensure fairness and ease of access of applicants to such accommodation, adequate information on available housing stock and their conditions, existing beneficiaries and new applicants are indispensable to housing managers.

The Federal Capital City of Nigeria, Abuja, presents a typical scenario where housing supply has grossly failed to meet the ever-increasing demand. Available housing units in the private sector attract very exorbitant rents, which are unaffordable

by civil servants. The situation is further compounded by the continuous influx of people into the city. In response to this acute shortage, the Federal Government through the Ministry of Federal Capital Territory (MFCT) has been providing housing units for civil servants. The extents to which these efforts have lessen the housing problems of civil servants deserve some critical evaluation. This study, however, focuses on the means and methods for generating and maintaining records pertaining to housing units and their allocation to the target group.

The allocation and management of MFCT housing units are presently done manually. Data concerning applicants and tenants are kept in paper files. Comprehensive and up to date information on the occupancy status of existing housing units are hardly kept, thereby making it difficult to know houses that are vacant or illegally occupied at any given time in different parts of the city. More so, the manual process of housing allocation poses a lot of difficulties to housing managers and civil servants in housing need. These problems and a host of others can be solved by computerising the public housing allocation and management systems in the capital city.

1.2 *Statement of Problem*

In most Nigerian cities, public housing units are very limited in supply when compared with the ever-increasing demand for them. Thus, their management and allocation are becoming more and more complex to deal with. In Abuja, the allocation and management of public housing units under the Ministry of Federal Capital Territory are presently done manually. This manual operation is fraught with a lot of problems. Broadly, the problems may be classified into three types; Each of these main problems has its sub-problems.

1). Poor information system on the housing units, and allotees.

2). Cumbersome Housing allocation procedure, and

3). Insecure medium of storing relevant information.

1. *Poor information system with respect to:*

a. Housing such as address, vacancy, physical condition among others.

b. Tenants (allotees) such as present employer, status/rank, date of last promotion, transfer, retirement, and withdrawal from service and decease.

c. Delayed access to files of allotees and applicants.

2. *Cumbersome Housing Allocation Procedure.* The manual method used is characterized by :

a. Waste of time and resources, which in turn delay decision-making.

b. Tedious tasks in the identification of vacant or illegally occupied housing units.

c. Unbalanced distribution of housing units among various ministries and parastatals.

d. Incidences of double allocation.

3. *Insecure and bulky medium of storing information in terms of* :

Safety, Space occupied, destruction, and loss of files.

1.3 *Aim.*

The aim of this project is to examine the present methods used in public housing allocation and information systems in the study area with a view to designing computer-based operations for the systems so as to enhance efficient performance.

1.4 Objectives:-

The specific objectives of the project are to:

i) Examine the background of the case study.

ii) Identify types of data (input) used with respect to housing, applicants and allottees.

iii) Study existing filing systems and access to files.

iv) Examine criteria used for identifying vacant housing units and selection of tenants.

v) Consider methods used in processing information and allocation of housing units.

vi) Examine the forms of processed information (output) for final approval.

vii) Examine the media used for storing information with respect to space, safety and durability management.

viii) Consider how the present system affects decision-making.

ix) Design a computer-based operation for the systems so as to enhance efficiency and security of stored information.

x) Suggest ways for improving and regularly updating information.

1.5 Scope of Study.

This study is concerned with the residential housing units owned and managed by the Ministry of Federal Capital Territory, Abuja. It considers the methods used in allocating houses to target groups as well as how relevant information pertaining to houses, applicants and tenants are stored for decision making purposes. Database programs written in dbase IV Language are produced to help execute the allocation and record keeping processes more efficiently.

1.6 Methodology.

The data for this study were obtained from two main sources – secondary source and primary source. Secondary data were got from the review of relevant literature. This review provided the theoretical basis and proper perspective for the project. Issues in housing management (such as allocation and housing record keeping), system analysis and applications of computer to housing, which are relevant to the project, were given due consideration.

Subsequently, primary data were collected through personal interview directly with officials of the housing unit, MFCT. Emphasis was placed on the method and means used for housing record keeping and present allocation procedure. In the light of this, samples of the framework and forms used for application, processing, allocation and documentation exercises were carefully examined. These forms are illustrated in appendices ii to iv.

Data collected on the existing system used in housing allocation and information systems were then presented and analyzed. The findings of the analysis provided the basis for designing a new method to be operated through the use of a computer system. It is believed that the computer machine, properly guide with efficient programs and current and valid input would help solve many of the problems associated with the manual system currently in use.

1.7 Glossary of Terms

House: A general all-inclusive term used to designate a building which is used as a residence (Macey and Baker, 1978).

Housing: The term "housing" is more encompassing than "house" because it embraces all the social services that go to make a community or neighbourhood a livable environment.

Housing Unit:- Refers to an apartment, a group of rooms or a room that constitutes "separate living quarters" (Downs, 1980).

Dwelling Unit:- is also used to describe the housing Unit or space that supplies the full complement of living facilities for cooking, eating, sleeping and relaxation. The dwelling unit, then, is the space designated to accommodate one family group regardless of the type of structure in which it is enclosed (Lawal, 1995).

Computer: - A versatile and complex electronic machine capable of storing and

processing large amounts of information and performing calculations. In preference, computers are used for doing lengthy, boring, repetitive and complicated calculations and tasks, which can be done, much faster than human brain(Baxter, 1976; Falade, 1988, 2000).

MFCT: - Ministry of Federal Capital Territory.

The Concept of "System" And "System Analysis"

A system can be regarded as a set of interacting elements responding to inputs to produce outputs. System may consist of numerous subsystems, each of which has elements, interactions and objectives. Subsystems perform specialized tasks related to the overall objectives of the total system.

On the other hand, system analysis is concerned with the methods of determining how best to use computers with other resources to perform tasks which meet the information needs of an Organization (Badmus, 1998)

Chapter Two.

LITERATURE REVIEW

2.1 Introduction

An attempt has been made to review some literature relevant to this project. This is aimed at providing the theoretical basis for the subject matter and putting it in proper perspective. Among the issues reviewed are: housing problems in Nigerian Urban Centres, role of the public sector in housing provision, concept and functions of housing management, and allocation of public housing. Other topics considered include system analysis and design as well as the use of computer technology in housing allocation process.

2.2 *Housing Problems In Nigerian Urban Centres .*

It is common knowledge that there is great shortage of housing in Nigerian towns and cities. In many cases, the inadequacy finds expression in a very high occupancy ratio, exorbitant rent charges, and inadequate facilities, utilities and services. More so, bulk of traditional houses is in dilapidated condition. These problems have been exacerbated by a number of factors – such as inadequate finance; high cost of land, building materials and labour as well as unbridled urbanization. There is therefore the need to ensure an adequate supply (qualitatively and quantitatively) of houses to match with the ever-growing demand so as to produce rents which are reasonable to meet the resources of various income groups within the community and which are equitable in terms of return to investors in housing (Onibokun, 1985).

2.3 *Role of the Public Sector in Housing*

The importance of housing and its related facilities as vital elements in determining the standard of living as integral part of the development process and the need for government to take a major share of responsibility for improving the level at which they are provided are widely recognized (Lawal, 1995)

Governments of most nations including Nigeria have accepted the fact that housing should not be left entirely to the free play of market forces. They have therefore decided to involve themselves in public housing by playing such roles as formulating health guidelines for housing, laying down of basic standards, regulation of market through subsidies and through controls of various kinds on building societies and private Landlords, and through the direct provision of housing (Stewart, 1979). This intervention is aimed at achieving an over all housing goal – that is to adequately house everybody in the society in a good housing located in a decent environment and at an affordable cost.

In Nigeria, state involvement in housing provision has grown and an increasing proportion of public expenditure has been spent in this direction. Despite this, housing remains a major problem area of social and economic policy.

2.4 *Housing Management*

Housing management is concerned with the provision and control of a residential property with its related community facilities, to ensure its proper care; its maximum use and enjoyment, its optimum benefit to the Landlord; tenant and other residents in the neighbourhood (Lawal, 1995). It has also been described by Macey and Baker (1978) as "the application of skill in caring for the property, its surroundings and amenities, and in developing a sound relationship between Landlord and tenant, and between tenants themselves; in order that the estate, as well as the individual houses, may give the fullest value to both the Landlord and tenants".

The Landlord, who may be an individual, group of individuals, estate developer, or government agency or a local authority has a responsibility to practice good property management. By so doing, the well being of the property, tenants, neighbours and the entire neighbourhood is assured. When a property lacks proper management, the rate of obsolescence is rapid; and it reduces the socio-economic and aesthetic values of such property to the city where it is situated and the nation at large. However, housing management is not just confined to routine maintenance work and collection of rents and other charges; rather it entails other several functions.

2.4.1 Functions Of Housing Management:

The various services of public housing management as identified by Macey and Baker (1975) and Lawal (1995) include the following:

a) Examination of housing conditions of the area, estimation of housing need and demand, including the requirements of special groups such as the aged, physically handicapped and the homeless, and the assessment of housing supply, including the physical conditions of existing dwellings and acquisition programme of all the agencies involved.

b) Over all responsibility for the local authority housing programme, including development of estates, slum clearance, rehabilitation, re-housing and demolition.

c) With the aid of suitable schemes, allocate housing accommodation to different categories of persons in housing needs.

d) Administering arrangements to facilitate transfers and mutual exchanges between occupiers of all types of accommodation and ensuring that the available stock of houses is utilized to the maximum possible advantage.

e) Fixing reasonable rents and mortgage repayment and preparing rebate schemes for cases of hardship where necessary. Collecting rents and mortgage repayments for the house, dealing with recovery of arrears and administering the rebate scheme as appropriate.

f) Maintenance of all housing authority properties, estates and ancillary amenities in a good state of repair; bring older houses up to modern standards; to ensure that tenants comply with the conditions of tenancy.

g) Rendering advice on the extent, nature and location of dwellings and the social, management and maintenance aspects of layout and design, taking into consideration community needs and preferences.

h) Fostering and maintaining a good relationship among tenants and promoting community activities in the neighbourhood.

The above functions are general in nature. They may however, vary among housing agencies depending on local situations and the desired objectives.

2.4.2 Annual Public Housing Budget.

Budget in terms of dwellings is made up of two aspects – income and expenditure. The "income" side contains forecast of the number, location and sizes of new dwellings expected to be completed during the year, plus a similar estimate of the number of dwellings likely to be vacated and available for re-letting (Macey and Baker, 1978). Data collected over a reasonable period will provide a useful basis for estimating the "re-lets" and provide in addition a useful guide as to whether percentage of re-lets to total housing stock is rising or falling from year to year. For instance, rising mobility usually indicates a general improvement in the housing situation.

On the other hand, the expenditure side of the budget will take the form of an allocation of these resources to various priority groups in accordance with policy decisions.

Though, no definite formula can be laid down for public housing allocation due to variations in circumstances, and objectives of the authorities involved; wise planning will ensure that resources are optimally utilized while paying heed to fairness and high priority needs.

2.4.3 Allocation Of Public Housing

Public or government-built housing is a scarce resource, in that demand for tenancies exceeds the supply of vacant houses. Agencies responsible for the management of government housing may respond to the resulting scarcity situation by imposing "rationing rules". The rationing rule first limit those eligible for consideration for tenancy and then deciding the priority of competing claims among those eligible.

In considering eligibility, public housing managers maintain a waiting list of applicants seeking for houses under their jurisdiction. Restrictions of two kinds are often applied in the rationing process of tenants' selection. These are restrictions limiting access to the list and those, which determine who, among those on the list, will be eligible for consideration for a tenancy offer (Boyce BN; 1984).

Several criteria used by housing managers in the public sector to judge eligibility for registration in the waiting list include – local residence or employment, age and marital status, tenure and housing need.

Apart from these standard eligibility requirements there are some exceptions or waivers based on equity. Examples of such special emergency cases include the homeless, deserted wives, tenants in tied properties or others facing eviction. This gives certain flexibility to a system, which might otherwise be unduly rigid and insensitive.

There are other sorts of special cases falling outside normal procedures, where eligibility of key workers or other employees of local firms are given special

consideration; and are particularly geared to economic policies and labour mobility. In addition, service tenancy is sometimes available for employees in the public sector. In all these cases, selection criteria are determined by need.

After compiling a list of eligible applicants, public housing managers then use a suitable scheme, for determining allocation priorities among those on the waiting list. Different types of scheme may be used by different agencies depending on their situations and priorities. Whatever the method followed, there is general consensus that a good scheme is one in which those in housing need are favoured in a way which is objective and fair, and sufficiently flexible to meet extreme needs.

Use of Computer in Housing Management.

A computer is a machine that follows instructions in order to process data, solve a specific problem or accomplish a particular task. Computers are increasingly becoming indispensable nowadays. Many tasks at home and in the office that were hitherto executed manually are being automated at a very fast pace worldwide.

Hence, it is becoming apparent that in whatever discipline of study or nature of employment, the computer is now an important tool for efficiency, improvement and precision of job or task execution (Fapounda, 1995). Housing management is one of such profession with complex and repetitive activities requiring the services of computers.

There is much in the records and work of public housing managers for which the use of computer can be considered where the circumstances are such that an installation can be financially viable. Macey and Baker (1978) stressed the need for a careful financial appraisal in which relevant cost, including overheads are taken into account, as well as the savings.

The computer is capable of producing statistical and other information more efficiently and faster than human beings. To justify the introduction of computers, in housing management, it is proper to show in what respect the authority's performance has hitherto been inefficient or inadequate by reason of the absence of this information. (Macey and Baker).

Chapter Three

PRESENTATION AND ANALYSIS OF EXISTING (MANUAL) SYSTEM

3.1 *Background Information of Study Area*

The housing administration department carries out the Management of housing units of the Ministry of Federal Capital Territory. This department consists of different units, which include the housing unit, rent subsidy unit, maintenance and staff rent unit.

The housing unit is responsible for processing applications and allocation of available housing units to individuals and establishments in housing needs (for residential and office purposes). This project focuses on the allocation of the residential housing unit. The housing unit has offices in all the zonal offices of the F C DA. The zonal offices are located in the existing districts of the Capital Territory; that is, Garki, Wuse, Gwagwalada, Kubwa/Gwarimpa, Asokoro/Maitama, Gudu, and Nyanya/Karu.

The Ministry of Federal Capital Territory through the housing administration department has been providing public housing services in the entire district mentioned to civil servants.

3.2 *Types of Housing*

The main types of houses provided by the ministry include one bedroom terrace bungalow (self contained) one room unit, one bedroom Flat, block of flats, detached bungalows, semidetached (Four bedroom) bungalows of three or four bedrooms with or without boys quarters.

It was difficult to get the precise stock of each housing type and their distribution over the various districts.

3.3 Guidelines and Requirements for Housing Allocation

An application for a particular housing unit must indicate the address and background of the accommodation; such as house number, block number, section and the area/zone/phase with the district name. Where the devilling unit applied for is located in a new building, the block number and district address may be sufficient.

The qualification or requirements for housing allocation include the following.

(a) The applicant must be a civil servant

(b) He/She must be working within the Federal Capital Territory

(c) Persons presently occupying government housing in the FCT or else - where are not qualified to apply

(d) Applicants must be ready to abide by all estate laws as may be stated by the authority.

(e) All rents payable shall be remitted to the authority as and when due.

(f) applicants shall promise not to lease, or rent out or sub-let any part or whole of the house to any body

3.4 Housing Registry

Housing registry is where records about applicants and allottees are kept in paper files. The office is also responsible for housing allocation activities. During the visit to the office, piles of files of applicants and allottees were seen in this section

3.5 Inputs For the Manual System

The input comprise the things or data required by the housing managers for their operations. It also includes the deliberate mechanism established by the unit to maintain proper operation of the system. Regular reviews of a system's operation to ensure that it is meeting its objectives in the most effective manner is another way that organizations feed input into a manual system. Routine updating of information used by the system is also input.

For the housing allocation, allottee's record must often be updated as changes in allottees status may be brought about by factors as promotion, change of name and transfer of service. Also some allottees may from time to time leave the service courtesy of retirement, retrenchment, withdrawal or even death

The basic input (data) for housing allocation include the following:

i. Full name
ii. Address
iii. Grade level
iv. Marital status
v. Purpose
vi. Date of appointment
vii. Date of transfer/assumption of duty
viii. Previous station
ix. If it is change of accommodation that is required, reasons should be stated
x. Application letter (stating the house number, if any)

These above inputs are contained in the application forms for housing allocation as shown in appendix ii.

3.6 *Outputs of the Manual System*

The end product of any operation is its outputs. The outputs for housing allocation are as follows:

i. Full name

ii. Address

iii. House number

iv. Date of allocation

v. Area/Zone/phase

vi. Section

vii. Street

viii. Type of Flat (house) and the block number

3.7 *Processing of Applications in the Manual System*

All applications for housing allocations are usually addressed to the permanent secretary, Ministry of Federal Capital Territory (MFCT). Each application (which may be handwritten or typed) should be passed through the head of department of the applicant to the permanent secretary. The application must indicate the number and address of the housing unit applied for. Such a house could be newly constructed or suspected to be illegally occupied.

On receipt of such application, the permanent secretary endorses it to the Assistant Director (AD), in charge of housing matters. The AD (housing) will them minute the application to the Chief Estate Surveyor (CES) or Assistant Chief Estate Officer (ACEO) as the case may be. The CES or ACEO will in turn minute it to the zonal office concerned. The zonal office is expected to verify if vacancy exist in the house in question.

3.7.1 *Verification Of Vacancy*

The head of the zonal office in the district where such a house is located will then assign an Estate inspector to verify if vacancy existsin the house in question. The inspector will carry out this assignment accordingly. At the time of the visit, if the house or flat is occupied, the inspector will interview the occupant on the legality of his/her occupation of the house. The occupant will be asked to produce the following documents:

i. The original copy of his/her employment letter
ii. Allocation letter to the house from FCDA
iii. Recent promotion letter
iv. Identification card from his organization

The above documents, if produced, will enable the estate inspector to confirm the legality of the occupant. He will then put up a situation report on the findings. If the house is vacant or illegally occupied the applicant has a chance of securing the accommodation.

3.7.2 *Onward Processing*

The situation report is then forwarded to the housing unit at the head office of FCDA for onward processing of the application. The Chief Estate Surveyor or Assistant Chief Estate Officer will then minute the situation report with the application letter back to the Assistant Director (housing).

The AD (housing) will in turn forward the report and the application to the permanent secretary for his approval. The permanent secretary will then approve the application and instruct the AD housing to allocate the said housing unit to the applicant.

The AD (housing) will allocate the house to the applicant accordingly. However, before the allocation letter is issued, the applicant will be required to

fill an application form. The form, which is shown in appendix ii, is designed in such a way that the applicant supplies the following information:

i. Full name
ii. Organization/Ministry/Department
iii. Rank/Designation
iv. Salary grade level
v. Date of appointment to the present level
vi. Date of transfer/assumption of duty
vii. Previous station
viii. If it is change of accommodation that is required, state reasons

A certification from the applicant's immediate boss about the information he supplied is also required.

3.7.3 ***Ejection Of Illegal Occupants***

If somebody illegally occupies the house in question, the zonal office will issue such a person with a quit notice. If the person refuses to quit after the expiration of the dead line in the notice, the zonal office is authorized by law to use reasonable force to eject such an occupant. This is done with the help of law enforcement agents.

3.7.4 ***Check – In of New Allottee***

The new allottee is expected to take his duly endorsed letter from the housing unit to the zonal office concerned where he will be officially checked - in by an estate inspector

A form called "inventory card" is used in checking - in of the new allottee. The form, which must be completed in triplicate, will indicate the facilities and items contained in the house as at the time of checking - in. The

new allottee is required to sign for these facilities including the keys to the house. The keys are then handed over to him and he is considered to be duly checked-in. One copy of the completed inventory card is given to the applicant; while the remaining two are kept in the zonal office and the housing unit at the head office.

After this documentation, the new allottee becomes a legal occupant of the house (or flat)

3.8 Allottee's House File

A house file is opened in respect of the allottee in the housing unit, MFCT after the allocation has been effected.

The main documents kept in the file are the application letter, completed application form and allocation letter. On issuing of the allocation letter to the new allottee, he/she is made to sign some undertakings at the estate zonal office (a sort of tenancy agreement) before moving into the house.

3.9 Problems Associated with the Manual System

The manual system of housing allocation is characterized by numerous and complex problems, which include the following:

i. Difficulty in having access to allottee's files; considering the bulky nature of the paper files kept in the housing registry.

ii. The verification of whether an applicant is presently accommodated in government house is difficult.Thus some mischievious civil servants may end up securing double allocation.

iii. Poor updating of house records and allottees records also makes it difficult to know which house has become vacant by virtue of civil

servants' transferred, retired or withdrawn from the service or those that are deceased.

iv. The use of paper files makes record keeping in secured

v. Dearth of comprehensive information on housing situation makes it difficult for the planning of annual housing budget - that is forecasting of vacancy rates and their subsequent allocation to priority groups in line with specified policy designs

Chapter Four

THE PROPOSED SYSTEM

4.1 Introduction.

The proposed system can be designed and implemented by the use of computer. This should exhibit tremendous advantages over the manual method. The new system should, among other things meet the following information requirements:

i. Automatically respond to an information request about an allottee.

ii. Automatically provide an up-to data information on the flats (housing units) occupied.

iii. Should provide a secured storage system for information and allow only authorized users to have access to data files

iv. Be capable of identifying a duplication of an Allotte's information

v. Should be able to trace a flat (or house) number and area code appearing twice.

The last two requirements will help in reducing the problem of double allocation. In a nutshell, the new system tends to simplify the procedures involved in the manual operations; thereby reducing inefficiency and complexity problems.

It is important to note, however, that all data or instructions that are to be fed (input) into the computer need to be thoroughly examined through the use of system investigation and facts validation. This is because the computer system will always provide a logical solution to a particular problem in accordance to the input data. For instance, if the input are wrong the system is bound to

produce a wrong answer. Hence the acronym "Garbage in Garbage Out, G1GO". This further explains the consistency nature of an electronic computer.

4.2 Description of the New System

4.2.1 Input Design

Data may be input into the computer via the keyboard. The input data will include occupant's full name, file number, address, area code, house (flat) number and grade level.

4.2.2 Allottee File Structure

Allottee file contains information pertaining to allottee. The file structure is as given in fig 4.1

Fig 4.1 Allottee File Structure

S/N	FIELD NAME	FIELD TYPE	WIDTH	INDEX	DESCRIPTION
1	HFNU	CHARACTER	6	Y	HOUSE FILE NO.
2	SNAME	"	20	N	SURNAME
3	FNAME	"	20	N	FIRST NAME
4	OADDR	"	30	N	OFFICE ADDRESS
5	ASEX	"	1	N	SEX
6	DAPPT	DATE	10	N	DATE OF APPOINTMENT
7	TRANS	DATE	10	N	DATE OF TRANSFER
8	ARANK	"	30	N	RANK/DESIGNATION
9	GLEVEL	NUMERIC	2	N	GRADE LEVEL
10	AMSTATUS	CHARACTER	8	N	MARITAL STATUS
11	ADTB	NUMERIC	10	N	DATE OF BIRTH

4.2.3 Housing File

This file contains details of house occupied.

The structure of the file is shown in Table 4.2

Table 4.2 : Housing file Structure

S/NO	FIELD NAME	FIELD TYPE	WIDTH	INDEX	DESCRIPTION
1	ACODE	CHARACTER	6	Y	AREA CODE
2	DIST	"	15	N	DISTRICT
3	AREA	NUMERIC	3	N	AREA NUMBER
4	SECT	"	3	N	SECTION OF THE AREA
5	STREET	CHARACTER	30	N	STREET NAME
6	BLOCK	NUMERIC	3	N	BLOCK NUMBER
7	FLAT	"	3	N	FLAT NUMBER
8	TYPE	CHARACTER	25	N	HOUSE TYPE
9	STATUS	"	1	N	HOUSE STATUS

4.2.4 Pass

The file contains the names and password of only authorized users of the system. The structure of the pass file is given in Figure 4.3

Fig 4.3: Structure of the Pass File.

S/NO	FIELD NAME	FIELD TYPE	WIDTH	DESCRIPTION
1.	USER	CHARACTER	30	NAME OF USER
2	PASS	"	6	PASSWORD OF USER

4.3 Input Formats

In designing the input format, the needs for the output were taken into consideration the format is given in table.4.4

Table: 4.4 Input format

S/NO	FIELD NAME	FIELD TYPE	WIDTH	INDEX	DESCRIPTION
1	HFNU	CHARACTER	6	Y	HOUSE FILE NO
2	SNAME	"	20	N	SURNAME
3	FNAME	"	20	N	FIRST NAME
4	OADDR	"	30	N	OFFICE ADDRESS
5	ASEX	"	1	N	SEX
6	DAPPT	DATE	10	N	DATE OF APPOINTMENT
7	DTRANS	DATE	10	N	DATE OF TRANSFER
8	ARANK	CHARACTER	30	N	RANK/DESIGNATION
9	GLEVEL	NUMERIC	3	N	GRADE LEVEL
10	AMSTATUS	CHARACTET	8	N	MARITAL STATUS
11	ADTB	DATE	10	N	DATE OF BIRTH
12	ACODE	CHARACTER	6	Y	AREA CODE
13	DIST	"	15	N	DISTRICT
14	AREA	NUMERIC	3	N	AREA NUMBER
15	SECT	"	3	N	SECTION OF THE AREA
16	STREET	CHARACTER	30	N	STREET NAME
17	BLOCK	NUMERIC	3	N	BLOCK NUMBER
18	FLAT	"	3	N	FLAT NUMBER
19	TYPE	CHARACTER	25	N	HOUSE TYPE
20	USER	"	30	N	NAME OF USER

4.4 Output formats

The end products of any system are its outputs. The form, volume and frequency of reports and documentation were taken into account in designing the input formal. The visual Display unit (VDU) and printer will serve as the output media.

S/NO	FIELD NAME	FIELD TYPE	WIDTH	INDEX	DESCRIPTION
1	HFNU	CHARACTER	6	Y	HOUSE FILE NO
2	SNAME	"	20	N	SURNAME
3	FNAME	"	20	N	FIRST NAME
4	OADDR	"	30	N	OFFICE ADDRESS
5	ASEX	"	1	N	SEX
6	DAPPT	DATE	10	N	DATA OF PPOINTMENT
7	DTRANS	DATE	10	N	DATA OF TRANSFER
8	ARANK	CHARACTER	30	N	RANK/DESIGNATION
9	GLEVEL	NUMERIC	3	N	GRADE LEVEL
10	AMSTATUS	CHARACTET	8	N	MARITAL STATUS
11	ADTB	DATE	8	N	DATA OF BIRTH
12	ACODE	CHARACTER	6	Y	AREA CODE
13	DIST	"	15	N	DISTRICT
14	AREA	NUMERIC	3	N	AREA NUMBER
15	SECT	"	3	N	SECTION OF THE AREA
16	STREET	CHARACTER	30	N	STREET NAME
17	BLOCK	NUMERIC	3	N	BLOCK NUMBER
18	FLAT	"	3	N	FLAT NUMBER
19	TYPE	CHARACTER	25	N	HOUSE TYPE
20	USER	"	30	N	NAME OF USER

4.5 Processing

The new system will process occupant's record when entered through the keyboard. First, the system will check for duplication of file numbers and area codes. If there is a duplication of any of these, an information is displayed on the screen for the user. On entering an occupant's record, there is room for the system to reject any file number or area code same as any existing one in the database.

In other words, the system keeps database of every occupant and allows the user to make enquiry on a particular occupant through the use of a query command.

Moreso, the processing include checking for duplication of occupants record. The entire concept of processing is summarized in a flowchart shown in appendix vi.Among other things, the flowchart shows:

i. Where input comes from and where it goes

ii. Various processes for the input

iii. The reports generated

Input are normally stored in a file and the file can be processed and eventually generates reports from sections or areas necessary to be produced.

4.6 Authorised Access

The design will ensure that only authorized users can have access to the systems. Such a user must enter a given password before he can access the system. This requirement prevents illegal access and also ensures safe and confidential record keeping.

4.7 Modular Structure of the New System.

The complex procedure of the manual system has been broken down into simpler modules. The modules collectively form the new system see appendix v.

4.8 Alternative Change over Designs

After analyzing the existing system and stating objectives of the new system, it is imperative to discuss various alternative designs, their advantages and disadvantages and then make a choice of the alternative that best suit the housing unit, MFCT. The common designs alternatives includes; the direct, the parallel, the pilot and the stage changeover.

4.8.1 Direct Changeover

This method is the complete replacement of the old system by the new, in one move. It is a bold move, which should be undertaken only when every one concern has confidence in the new system. When a direct change over is planned, system tests and training should be comprehensive and the change over itself planned in detail.

This method is potentially the least expensive but the most risky. However, for security reasons, the old system may be held in abeyance, including people and equipment. In the event of a major failure of the system the organization would revert to the old system.

4.8.2 Parallel Running

This means the processing of current data by both the old and the new systems to crosscheck the results. Its main attraction is that the old system is

kept alive and operational until the new system has been provided for at least one system cycle, using full life data in the real operational environment of place, people and equipment.

It allows the result of the new system to be compared with the old 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) on the time available for one.

4.8.3 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, and the new results are compared with the old.

This method is more like an extended system test, but it may be considered a more practical form of change over for organization reasons. It is not as disruptive as parallel operation, since timing is less critical.

4.8.4 Staged Change Over

This involves a series of limited-size direct change over, the new system being introduced piece-by-piece. A complete part, or logical section, is committed to the new system while the remaining parts or 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 direct change over of the whole system and enable us to learn from mistakes made as the change over progresses (Badmus, 1998).

4.8.5 The Chosen Design

Due to problem such as ignorance on the majority of housing managers on the relevance of computer in housing management. The change over that would properly work for the department is:

The staged change over

i. It enables us to learn from mistakes made as the change over progresses.

ii. There is reduction in the risk inherent in a direct change over.

iv. It is not descriptive compared to parallel operation as just a part is considered at a time.

v. Old data would not be relied upon as both method of collection and computations were scientific.

4.9 The Required Equipment for Operating the New System Include the Following: -

4.9.1 Hardware

i. Computer Server

- Pentium 300 MHz
- 64MB RAM
- 6.5gb Hard Disk
- 15" SVGA Monitor
- 2MB SVGA Card
- Windows 95 Keyboard
- Pad & Mouse Pad

ii. Standalone PC

- Pentium 166 MHz

- 16MB RAM
- 1.2GB Hard Disk
- 14" SVGA Monitor
- IMB SVGA Card
- Window's 95 Keyboard
- Pad & Mouse Pad
- Network Card

iii. Design Jet plotter

- 48 MB RAM

iv. Printer Epson DFX 8000

v. UPS (APC smart) 2 pairs

vi Data Cartridges (Sonny Brand)

vi. 3.5 HD Diskettes, and External Tape Drive.

vii. Ribbons

viii. Plotting Papers

ix. 2 Free expansion slot

x. Plain papers

More consumables as mentioned should be purchased.

4.9.2 Software

S/N	SOFTWARE	VERSION	PLATFORM
1.	ARC/INFO.SDE	2.3	WORKSTATION
II.	ARC VIEW	3.1	PC
III.	WINDOWS	95	PC
IV.	MS-OFFICE	7	PC
V.	DBASE	4	PC
VI	ORACLE	7.3	WORKSTATION.
VII.	VIRUS SCAN	7.7	SERVER & PC.

Training on minor maintenance, installation, operations should be conducted locally.

4.10 Program Identification and Description

The system is menu-driven. The program is written in dBase IV which has two different methods of processing data stored in its database file. These are interactive processing mode and Batch processing mode. The batch-processing mode is also known as the programming language mode chosen for this project due to its ability to store commands in the form of a program and is executed in a group. These commands are stored in a file known in dBase as command file.

To write the program, the dBase IV text editor was used. The text editor can be activated by typing MODIFY COMMAND followed by the file name. The command and the file name are entered at the DOS prompt and an environment to enter the program will be displayed on the computer screen. Once all the instructions have been entered, they are saved to disk by pressing CTRL and END keys at the same time. After the program has been saved to disk, it can be executed with the use of DOS COMMAND. Typing DO followed by the name of the program file also at the dot prompt does this. Dbase IV opens the program file and read each line of the file starting at the top of the file, performing each command in sequence.

4.12 *Starting the Program:*

A To start the computerized Housing Allocation system, do the following:

1. Insert program Disk in drive A.
2. Type at A:\> HASYS and press 'Enter'
3. Enter User Name.
4. Enter Password.
5. If valid password supplied, the program goes to the main menu.

B Creating Record:

Two types of records can be created viz.:

1. House information.
2. All office information.

To create record; take these steps:

1. From the program 'Main Menu' Press 'Y'
2. The 'Create Record Menu' appears, then press '1' or '2'
3. Enter new House or Allottee file Number or 'xxxxxx' to Exit.
4. If valid file Number supplied, the program displays record input form.
5. Enter House or Allotee details.
6. Press 'N' to enter next record or 'E' to terminate entry.
7. From the Create Menu, Press '3' to return to Main Menu.

C Updating Record.

In the Update Record Menu, it is possible to update House information, Allottee information; delete House information or delete Allottee information.

To Update Record, do the following:

1. From the Program
2. The program goes to the 'Update Record Menu'
3. Press '1' to Edit House Information or

4. Press '2' to Edit Allottee Information or
5. Press '3' to delete House Information or
6. Press '4' to delete Allottee Information
7. Enter valid (existing) File Number to Edit or Delete
8. When editing, the program allows modification of the information displayed on the screen.
9. Press 'N' to edit next record or 'E' to terminate the process.
10. If the user is deleting record, press 'S' to leave the displayed record intact or press 'D' to remove the displayed record from file completely.
11. From the Update Menu, press '5' to return to Main Menu.

D Inquiring

The user can enquire about either House information or Allottee Information using the Inquiry option.;

To enquire, do the following:

1. From the Main Menu, Press '3' and Inquiring Menu is displayed.
2. Press '1' to enquire about House Information.
3. Press '2' to enquire about Allottee Information.
4. Enter valid File Number and House or Allottee Information is displayed on the screen.
5. Press 'N' for next Record or 'E' to end process.
6. From the Inquiring Menu, press '3' to return to Main Menu.

E Printing Report.

The available reports produced by this system are:

a) Housing Allocation report.
b) Vacant House s report.
c) Summary by District report.

d) Summary of vacant Houses by House Type.

F To Print Report, take the following steps:

1. From the Main Menu, press '4' and the program enter the Report Menu.
2. Press '1' to produce Housing Allocation Report or
3. Press '2' to produce Vacant Houses Report or
4. Press '3' to produce Summary of Housing by District or
5. Press '4' to produce Summary of Vacant Houses by Type
6. To return to Main Menu, press '5' from the Report Menu.

4.13 Implementation of the New System

The main stages in the implementation of the new system include the following:

i. Site preparation and installation - These entail the arrangements necessary to secure suitable site as well as fixing the physical components of the computer system such as the system unit, visual display unit, mouse, printer, keyboard, UPS, stabilizer and other accessories.

ii. The training and re-training of personnel that will operate the new system

iii. Programming - This includes the installation of software such as the DBASE Packages.

iv. System testing.

v. Change over from the old to new system - This will involve the conversion of the old file data into the form required by the new system.

vi. Monitoring and review - This will allow for correction of detected faults as well as provide better understanding for future projects.

4.14 Advantages of the New System

The advantages of computerised housing allocation system over the manual system include the following:

i. Out put reliability is ensured. This is due to the fact that the computer system operate with high level of accuracy

ii. The proposed system is particularly suited for handling large amount (volume) of data and produces the desired result.

iii. The new system saves time spent in opening allottee's file. This time economy combined with the ability to access record directly from remote locations, enables it to respond very quickly to a given situation.

iv. It relieves prospective applicants the Herculean task of unguided search for vacancy. This is achieved through regular updating of database on available housing stock and their occupancy status.

v. It eliminates the problem of double allocation.

vi. It reduces money spent on salary, since fewer personnel are required in the new system.

vii. Access to and security of records are enhanced

viii. The print report is reliable and also clearer and adheres to a standard format.

4.15 Disadvantages of the Proposed System

The computerized system is relatively expensive especially with respect to cost of design, installations, maintenance, training and re-training of personnel.

This will make the system affordable to only affluent organizations.

In addition, the system will result in the reduction of workforce, since fewer hands are needed for the computer-based system. This will, therefore, add to the unemployment in the country.

Chapter Five

RECOMMENDATIONS, SUMMARY AND CONCLUSIONS.

5.1 Recommendations.

The programs written for carrying out various tasks will depend on accurate input data. In this regard, street naming and house numbering should be orderly done.

In addition, Allotees should be compelled to renew their tenancy at zonal office of the Housing Unit (MFCT) in their districts, at the end of each year. This will enable the housing managers at the Zonal offices to know which housing units have become vacant during the year as a result of transfer, retirement, retrenchment, withdrawal from service, death or voluntary termination of tenancy agreement by some Allotees. The zonal offices should also include the address of unoccupied newly constructed or purchased houses. This record updating should be complemented by periodic and regular conduct of housing surveys by the estate officers in the zonal offices. The format for this survey is presented in Appendix 3 and 4.

The summary of the vacant houses in each district should be forwarded to the head office, housing Unit, (MFCT) for updating the database on housing records. Such vacancy record will relieve prospective applicants of the burden of searching indiscriminately for vacant houses in the Federal Capital Territory; since such information will be available in the database.

Further more, the Ministry should provide adequate space for the physical components of the Computer System.

The Ministry should also send staff in the Housing Section for training and the re-training. It is also recommended that Computer analysts and programmers be employed to help operate the new system.

The staged change over method should be used in installing the new system.

Above all, the new system should be properly maintained and regularly upgraded as the situation demands.

5.2 Summary and Conclusions

This project has striven to achieve its stated aim, which is to computerize housing allocation system of the Housing Unit of Ministry of Federal Capital Territory, Abuja. This study was prompted by the problems faced by the Housing Unit and applicants in Housing need, which are experienced in the Old (Manual) System of Housing Allocation currently used. The Manual System characterized by inefficiency in terms of storing, accessing and updating of records of Allotees and Houses.

Consequently a computer – based system has been produced to replace the old system. Suitable designs for the input, output and data processing as well as the structures of the desired Files have been presented. Flowcharts and programs (written in dBase Language) for the required operations in the new system are also contained in the report. Finally, procedures for effective implementation, monitoring and review of the new system are given.

No doubt, the proposed system would be economically preferable to the manual system, in that it would reduce the cost of record keeping. In short, the computerised housing Allocation System will promote effective and efficient information handling in various operations, which would in the end produce more timely and more accurate information for decision making by management of the Organization

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Appendices

Data Dictionary

S/NO	DATABASE	SIZE	FIELD TYPE	REAL NAME
1.	HFNU	6C	CHARACTER	HOUSE FILE NUMBER
2.	SNAME	20C	"	SURNAME
3.	FNAME	20C	"	FIRST NAME
4.	OADDR	30C	"	OFFICEADDRESS
5.	ASEX	1C	"	SEX
6	DAPPT	10D	DATE	DATE OF APPOINTMENT
7	DTRANS	10D	DATE	DATA OF TRANSFER
8	ARANK	30C	CHARACTER	RANK/RESIGNATION
9	GLEVEL	2N	NUMERIC	GRADE LEVEL
10	AMSTATUS	8C	CHARACTER	MARITAL STATUS
11	ADTB	10D	NUMERIC	DATE OF BIRTH
12	ACODE	6C	"	AREA CODE
13	DIST	15C	CHARACTER	DISTRICT
14	AREA	3N	NUMBERIC	AREA/ZONE NUMBER
15	SECT	3N	"	SECTION OF THE AREA
16	STREET	30C	CHARACTER	STREET NAME
17	BLOCK	3N	CHARACTER	BLOCK NUMBER
18	FLAT	3N	NUMERIC	FLAT NUMBER
19	TYPE	25C	CHARACTER	HOUSE TYPE
20	USER	30C	"	USER NAME
21	PASS	6C	"	ACCESS TO THE SYTEM

MINISTRY OF FEDERAL CAPITAL TERRITORY

ii

APPLICATION FOR RESIDENTIAL ACCOMMODATION FORM

This form should be completed in triplicate, the triplicate copy should be kept in officer's file and the original and duplicate copies submitted to this office.

SECTION 'A'

1. Name of the applicant:.....
2. Organisation (Ministry/Department, etc.).....
3. Rank Designation:.....
4. Salary Grade Level:.....
5. Date of Appointment to the present Grade Level:.....
6. Date of transfer/Assumption of duty:.....
7. Previous Station:.....
8. If it is change of Accommodation that require, state reason:.....

.....

.....

Signature

Date:.....

SECTION 'B'

1. I certify that the information given above is to the best of my knowledge true and that the officer/ applicant is under my Unit/Division since:.....

.....

Name of Head of Unit/Division

Signature:.....

Date:.....

2. I certify that the particulars given above are to the best of my knowledge true and true and to be liable to whatever is discovered to be untrue and the officer works in my Organisation (Ministry/Department).

N.B.
Return with:
a. Letter of Appointment
b. Letter of last promotion
c. 3 Passport Photographs

.....

Name of Head of Department / Organisation

Signature:.....

Date:.....

COMPREHENSIVE HOUSING SURVEY:

1. NAME (Surname First).....

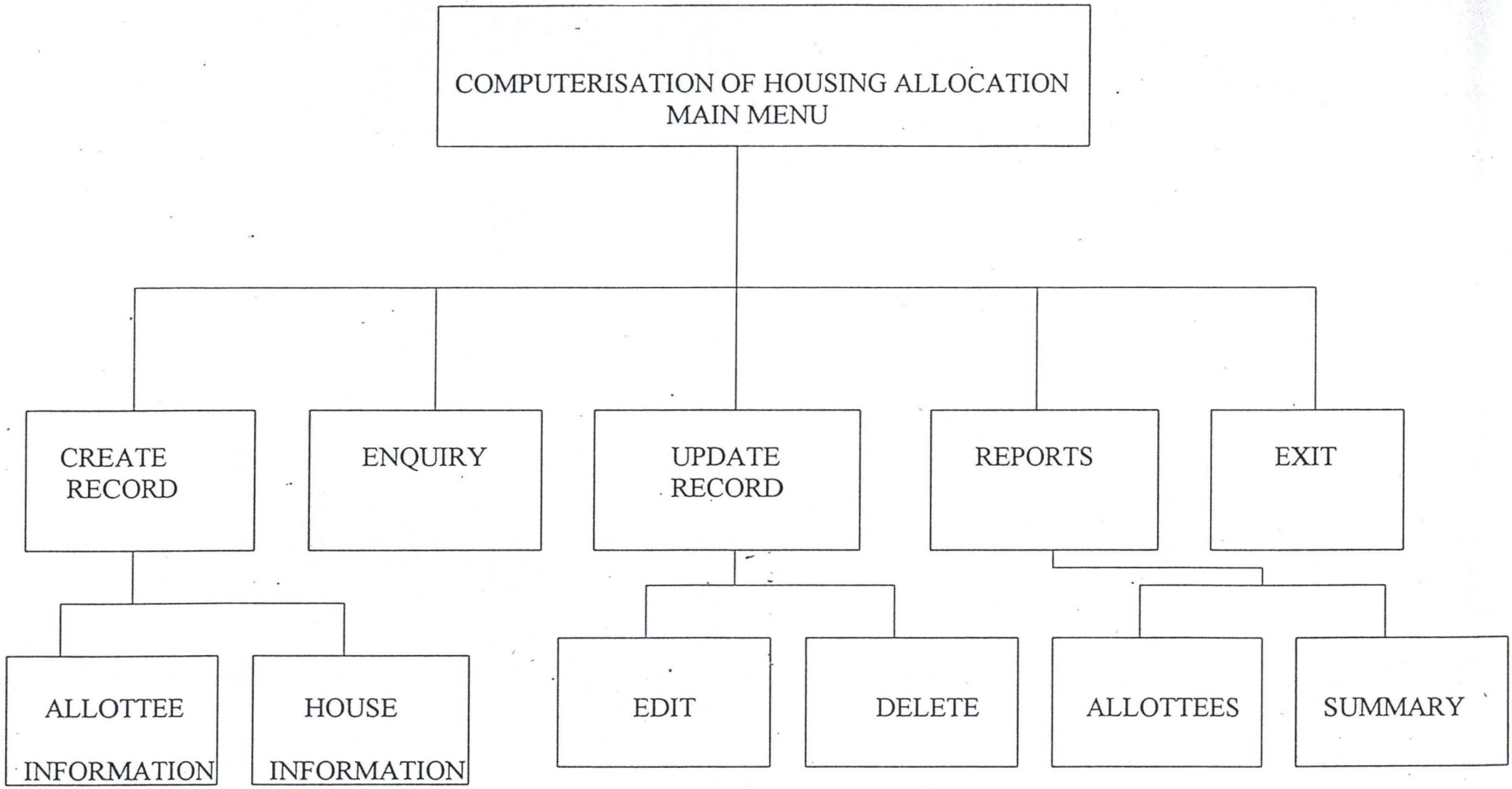
   Sex Male  Female 

2. District:.....
3. Zone/Area/Phase:.....Section/Site:.....
4. Street:.....
5. Block:.....(New No).....(Old No.).....
6. Flat:.....
7. Type: Tenement/Flat/Duplex/Bungalow:.....
8. Size of Unit:.....
9. Place of Work (Specify in detail):
   - (i) Ministry/Parastatal.....
     .....
   - (ii) Department:.....
     .....
10. Marital Status - Married/Single/Divorced/Widow
11. Place of Work of Spouse:.....
12. Allocation Authority:.....
13. Nature of Allocation (Individual/Bulk).....
14. Grade Level:.....
15. Use (Residential/Office/Guest House/Others
    Specify:.....
    .....
16. Date of Checking In:.....
17. Remarks:.....
    .....

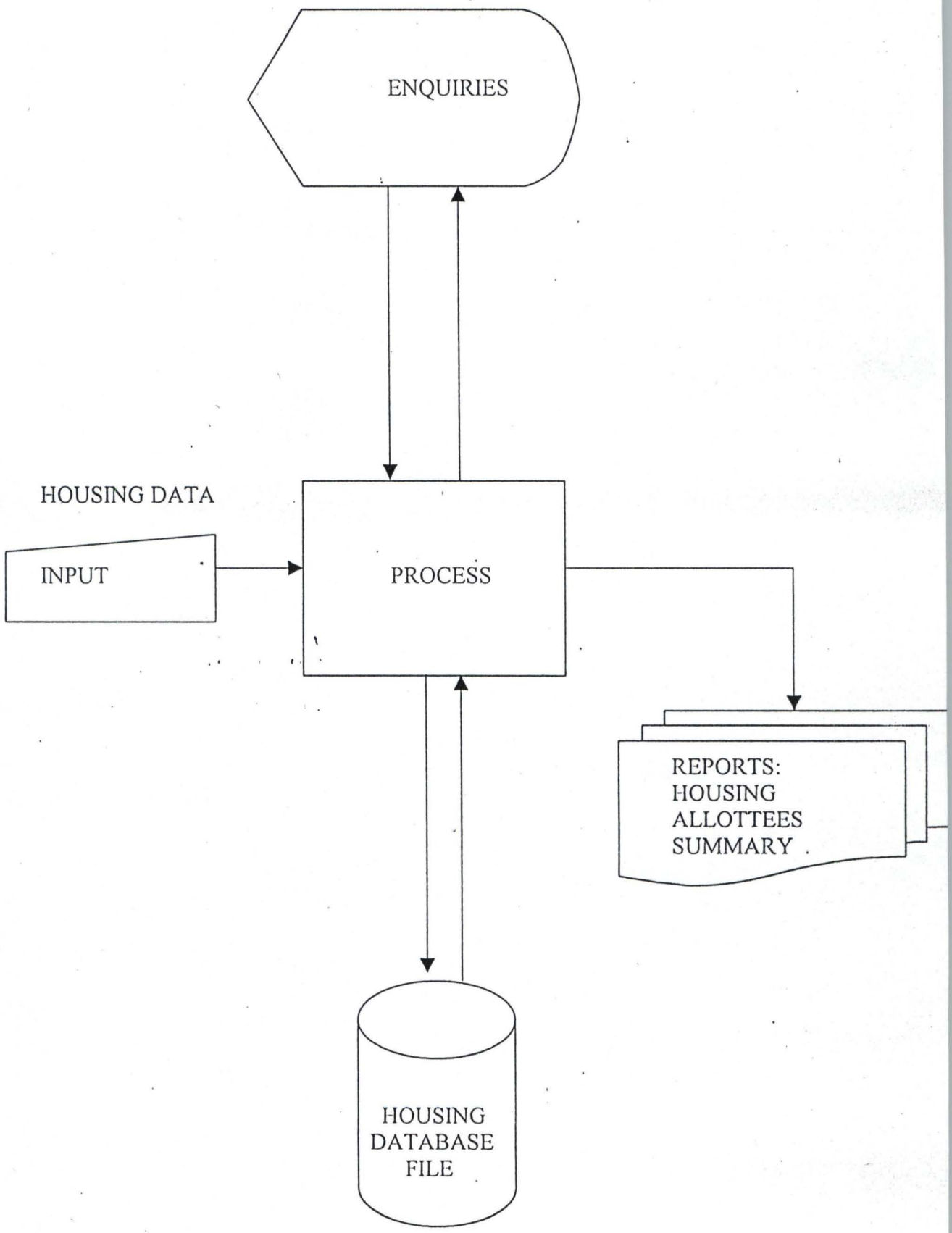
HOUSING CENSUS VERIFICATION SUMMARY

DISTRICT:.....

S/NO.	BLOCK		FLAT	STREET/CLOSE	AREA/SECT./ ZONE	TYPE OF UNIT	OCCUPANT	ADDRESS	G/L	DATE OF ALLOCATION	REMARKS
	OLD	NEW									

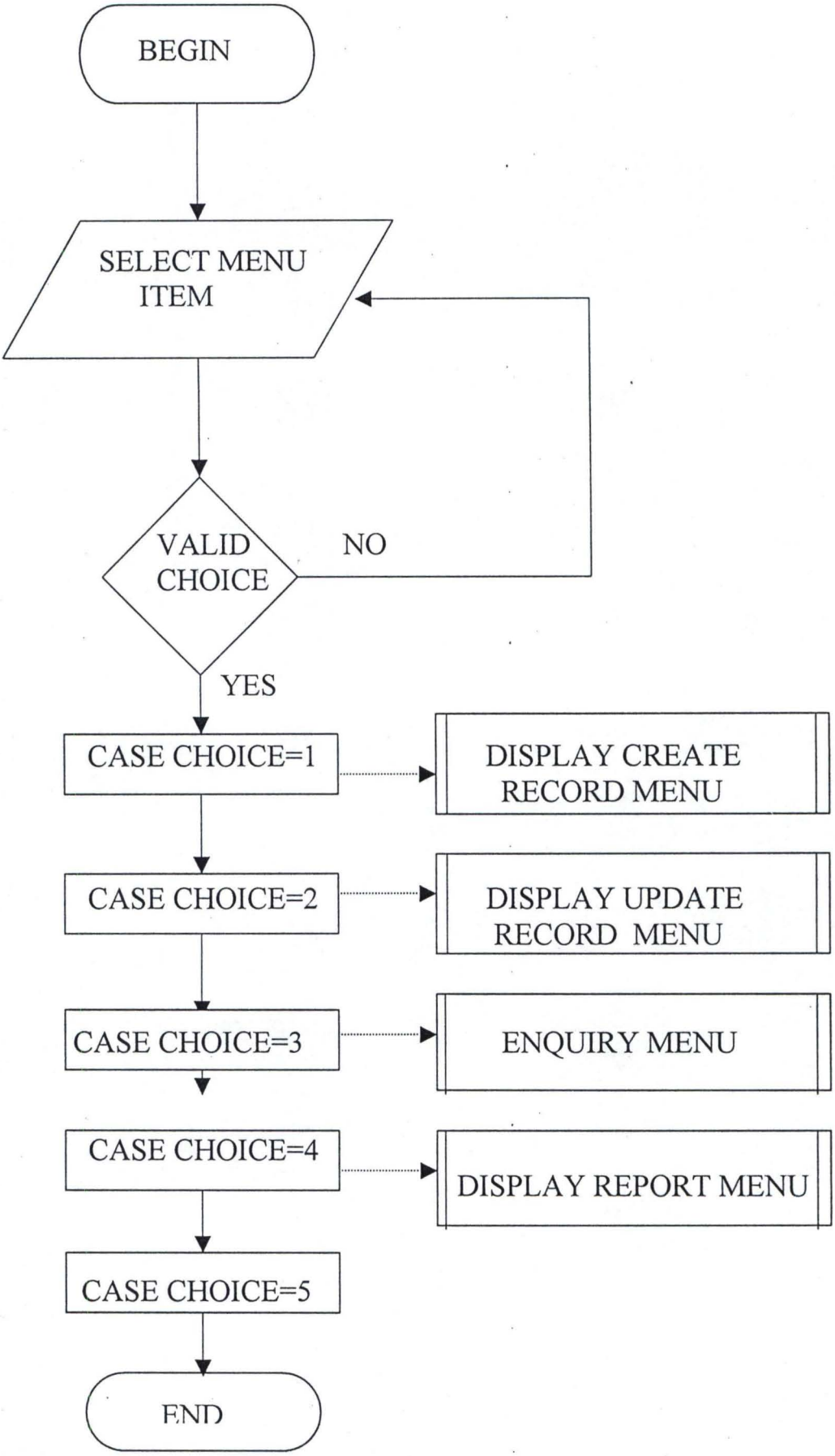


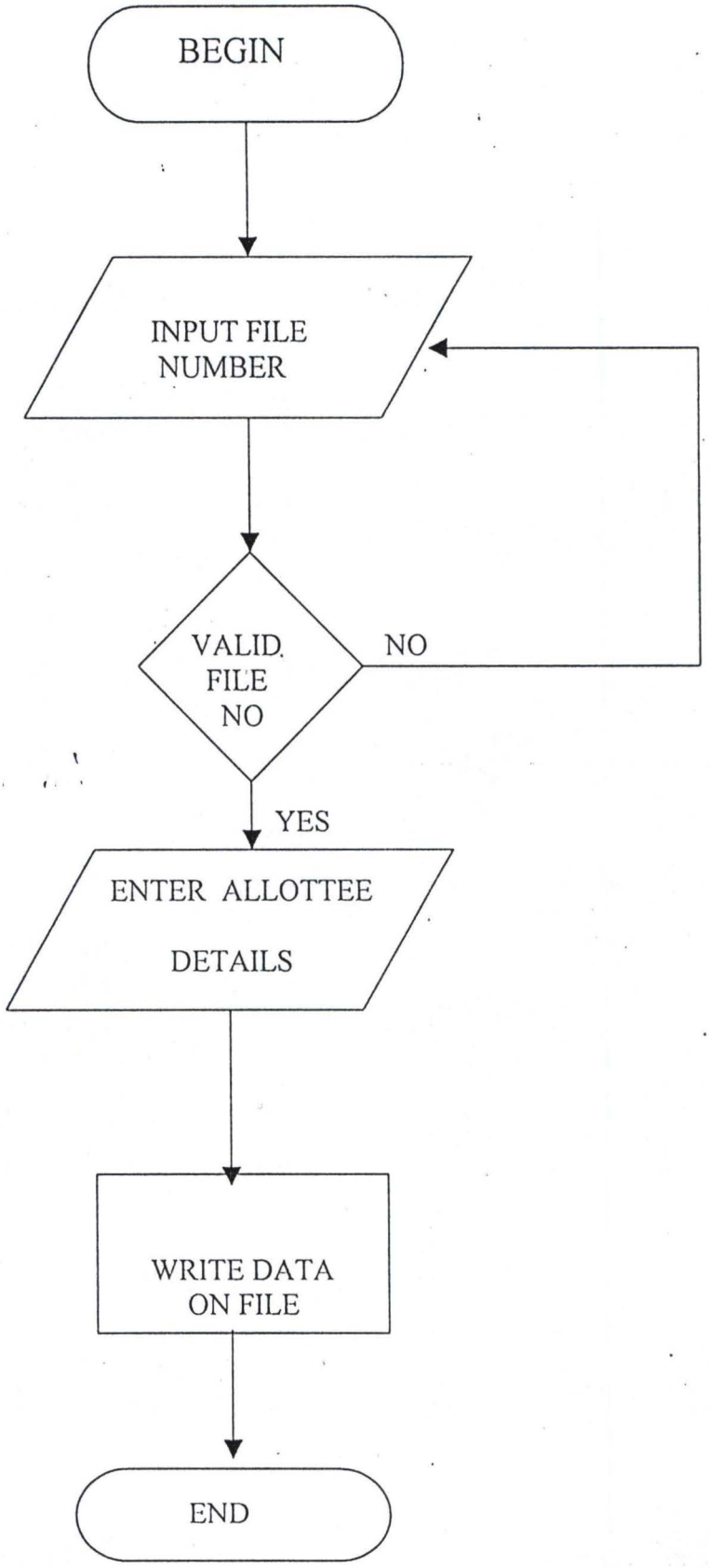
MENU BLOCK DIAGRAM



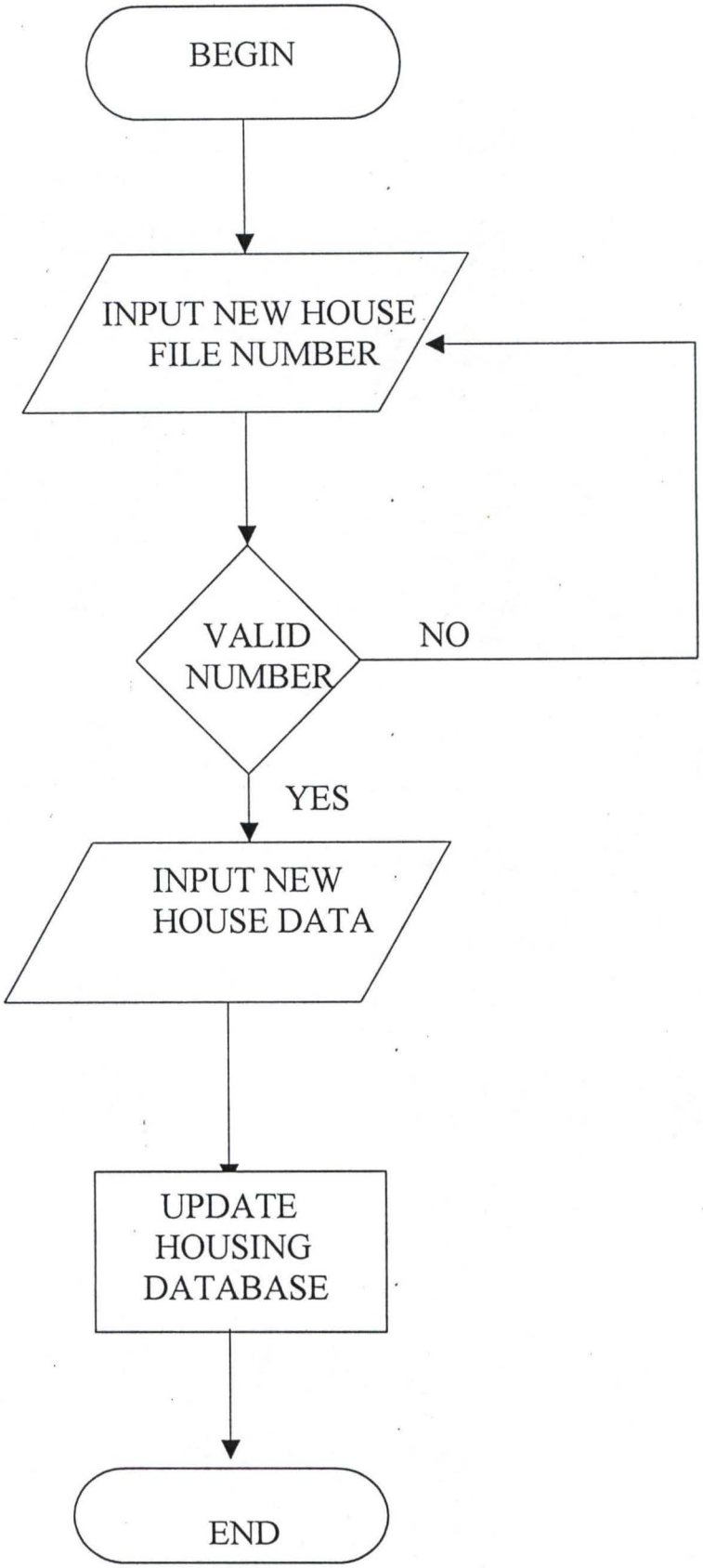
SYSTEM FLOWCHART

MAIN MENU PROGRAM FLOWCHART

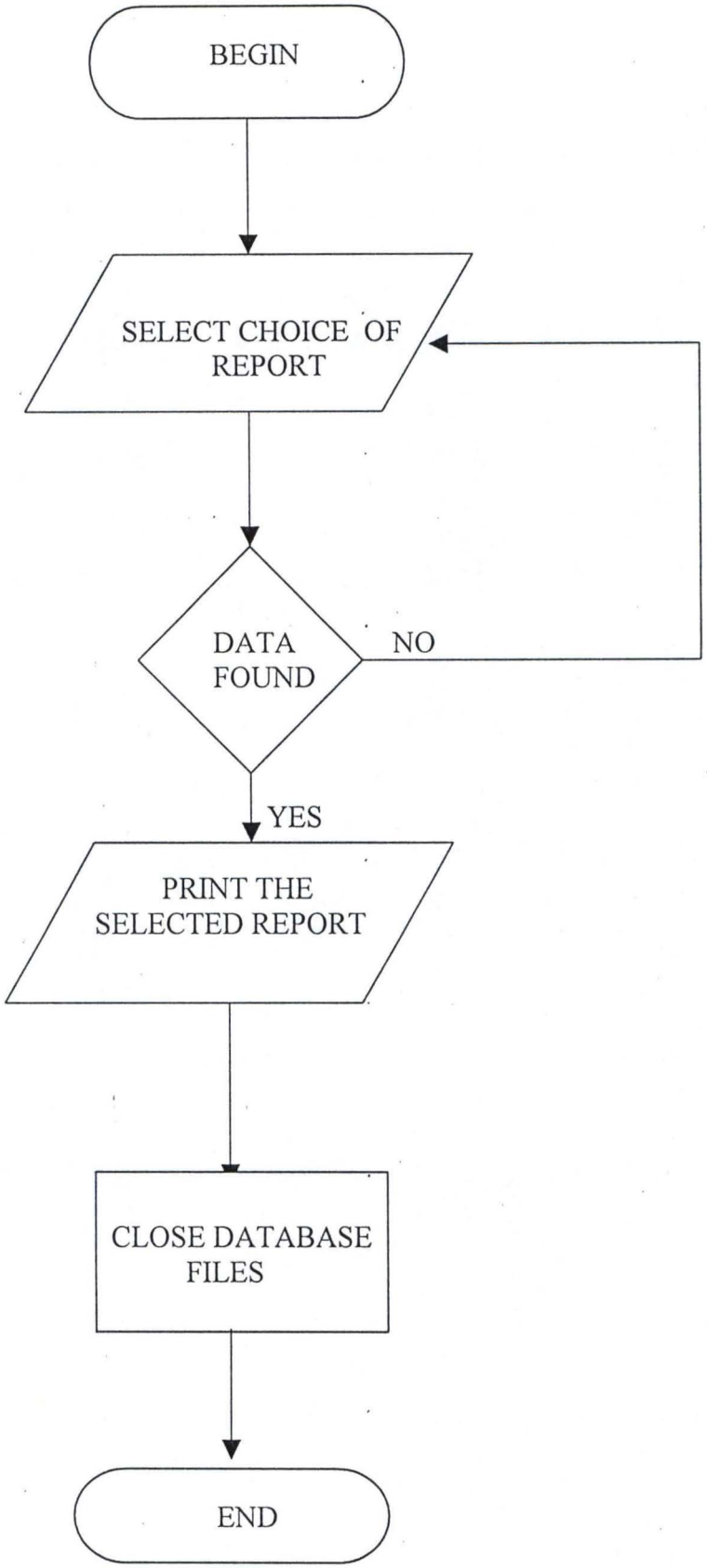




ALLOTTEE RECORD PROGRAM FLOWCHART



NEW HOUSING DATA ENTRY PROGRAM FLOWCHART



REPORT PROGRAMS FLOWCHART

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.

COMPUTERISED HOUSING ALLOCATION SYSTEM
M A I N M E N U

1 ... CREATE RECORD

2 ... UPDATE RECORD

3 ... ENQUIRY

4 ... REPORT MENU

5 ... E X I T

Enter a choice...

DEVELOPED BY:- OSIYI S. DAVID (PGD/MCS/98/99/859)

ENTER USER NAME OR [E]xit OSIYI S. DAVID

ENTER PASSWORD OSD

CLIP52\BIN\HS>

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.

COMPUTERISED HOUSING ALLOCATION SYSTEM
UPDATE RECORD M E N U

1 ... EDIT HOUSE INFORMATION

2 ... EDIT ALLOTTEE INFORMATION

3 ... DELETE HOUSE INFORMATION

4 ... DELETE ALLOTTEE INFORMATION

5 ... E X I T

Enter a choice...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.

COMPUTERISED HOUSING ALLOCATION SYSTEM
RECORD ENQUIRY MENU

1 ... HOUSE INFORMATION

2 ... ALLOTTEE INFORMATION

3 ... E X I T

Enter a choice...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.

COMPUTERISED HOUSING ALLOCATION SYSTEM
CREATE RECORD MENU

1 ... HOUSE INFORMATION

2 ... ALLOTTEE INFORMATION

3 ... E X I T

Enter a choice...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.

COMPUTERISED HOUSING ALLOCATION SYSTEM
REPORT MENU

1 ... HOUSING ALLOCATION REPORT

2 ... VACANT HOUSES REPORT

3 ... SUMMARY BY DISTRICT

4 ... SUMMARY BY HOUSE TYPE

5 ... SUMMARY BY MINISTRY/PARASTATAL

6 ... RETURN TO MAIN MENU

Enter a choice...

```
MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

ENQUIRY ON HOUSING INFORMATION

HOUSE FILE NUMBER  [XXXXXX]=Exit  [100103]

DISTRICT           :  [GARKI          ]

AREA NUMBER        :  [10 ]

SECTION OF THE AREA :  [1  ]

STREET NAME        :  [BROAD ST.                    ]

BLOCK NUMBER       :  [  4]

FLAT NUMBER        :  [  3]

HOUSE TYPE         :  [BUNGALOW                     ]

[N]ext Record  [E]nd Enquiry [ ]
```

```
MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

ENQUIRY ON HOUSING ALLOCATION INFORMATION

HOUSE FILE NUMBER  [XXXXXX]=Exit  [100105]

SURNAME   [AMBROS    ]   FIRST NAME   [PETER     ]

PLACE OF WORK    [FED.MIN.OF SCI.& TECH. ABUJA  ]

SEX    [M]                MARITAL STATUS   [SINGLE  ]

DATE OF BIRTH    [01/03/1974]

DATE OF APPT.   [10/01/1995]TRANSFER DATE [01/01/1998]

RANK/DESIGN.     [SYSTEM ANALYST                ]

GRADE LEVEL      [  9]

[N]ext Record  [E]end Enquiry [ ]
```

```
:\CLIP52\BIN\HS>
```

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

HOUSING ALLOCATION REPORT

DATE : 7 / 9 / 2000 PAGE 1

FILE NO	FULL NAME	PLACE OF WORK	DATE OF APPT G
100102	OKOYE, WILLIAMS	FED. HOUSING AUTH. ABUJA	03/01/1980
100103	JAMES, ABRAHAM	FED. MIN. OF FINANCE, ABUJA	04/01/1989
100101	EMIMARU, AHMED	DEPT.OF PETROLEUM RES. ABUJA	02/10/1990
100105	AMBROS, PETER	FED.MIN.OF SCI.& TECH. ABUJA	10/01/1995
100106	ZUBAYR, AJAYI	FED. MIN OF INTERNAL AFFAIRS	01/09/1993

Press any key to continue...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

VACANT HOUSES REPORT

DATE : 7 / 9 / 2000 PAGE 1

FILE NO	DISTRICT	AREA	SECTN	STREET	BLOCK	FLAT
100104	GARKI	7	1	MUBIN ST.	1	2
100107	WUSE	2	1	OKPARA ST.	4	4
100108	GARKI	2	1	IKARE STREET	5	2
100109	GARKI	2	2	ADISA STREET	2	1

Press any key to continue...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

SUMMARY BY DISTRICT REPORT

DATE : 7 / 9 / 2000 PAGE 1

DISTRICT	NO OCCUPIED	NO VACANT	TOTAL NO
GARKI	1	3	4

MAITAMA	2	0	2
WUSE	2	1	3
TOTALS	5	4	9

Press any key to continue...

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Press any key to continue...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

VACANT HOUSE TYPE SUMMARY

DATE : 7 / 9 / 2000 PAGE 1

DISTRICT	HOUSE TYPE	STREE	BLOCK	FLAT/UN
GARKI				
	2 BED ROOM FLAT	ADISA STREET	2	1
	BUNGALOW	IKARE STREET	5	2
	FLAT	MUBIN ST.	1	2
TOTAL VACANT UNIT(S) = 3				
WUSE				
	FLAT	OKPARA ST.	4	4
TOTAL VACANT UNIT(S) = 1				

Press any key to continue...

MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT
ABUJA, F.C.T.
COMPUTERISED HOUSING ALLOCATION SYSTEM

SUMMARY OF ALLOTTEES BY MINISTRY/PARASTALS

DATE : 15 / 9 / 2000 PAGE 1

MINISTRY/PARASTAL:	NO.OF ALLOTTEES	NO. OF HOUSING UNI
DEPT.OF PETROLEUM RES. ABUJA	1	1
FED. HOUSING AUTH. ABUJA	2	2
FED. MIN. OF FINANCE, ABUJA	2	2
FED.MIN.OF SCI.& TECH. ABUJA	1	1
TOTALS =	6	6

Press any key to continue...

C:\>

```
*********************************************************************
***** PROGRAM :   COMPUTERISED HOUSING ALLOCATION SYSTEM
***** COMPANY :   MINISTRY OF FEDERAL CAPITAL TERITORY HOUSING UNIT,
***** ADDRESS : \ ABUJA, F.C.T.
***** PROGRAMMER: OSIYI S. DAVID
***** REG.NO. :   PGD/MCS/98/99/859
***** DEPT.    :   MATHEMATICS/COMPUTER SCIENCE
***** DATE     :   MARCH 2000
*********************************************************************

***** MAIN PROGRAM

SET TALK OFF
SET ECHO OFF
SET STAT OFF
SET DELI ON
SET DELI TO "<>"
SET INTE OFF
PUBLIC I
DO WHILE .T.
CLEAR
@ 2,9 TO 21,65 DOUBLE
@ 3,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 4,15 SAY "                  ABUJA, F.C.T."
@ 6,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 7,15 SAY "               M A I N    M E N U"
@ 8,10 TO 8,64
@ 10,23 SAY "  ... CREATE RECORD"
@ 12,23 SAY "  ... UPDATE RECORD"
@ 14,23 SAY "  ... ENQUIRY"
@ 16,23 SAY "  ... REPORT MENU"
@ 18,23 SAY "  ... E X I T"
SET COLO TO G+
@ 22,13 SAY "DEVELOPED BY:- OSIYI S. DAVID (PGD/MCS/98/99/859)"
SET COLO TO GR+
@ 10,23 SAY "1"
@ 12,23 SAY "2"
@ 14,23 SAY "3"
@ 16,23 SAY "4"
@ 18,23 SAY "5"
SET COLOR TO W+
@ 20,23 SAY "Enter a choice..."
SET COLOR TO
I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "12345"
   EXIT
ENDIF
I=0
ENDDO
DO CASE
   CASE UPPER(CHR(I)) $ "1"
     DO CREATEM
   CASE UPPER(CHR(I)) $ "2"
     DO UPDATEM
   CASE UPPER(CHR(I)) $ "3"
     DO ENQUIRYM
   CASE UPPER(CHR(I)) $ "4"
     DO REPORTM
   CASE UPPER(CHR(I)) $ "5"
```

```
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN

□
```

```
*******  PASSWORD PROGRAM
USE PASS
SET INTE OFF
SET TALK OFF
SET ECHO OFF

DO WHILE .T.
CLEAR
MPASS=SPACE(6)
MUSER=SPACE(30)
@10,20 SAY "ENTER USER NAME OR [E]xit " GET MUSER PICT "@!"
READ
IF MUSER="E"
   CLOSE DATA
   RETURN
ENDIF

@12,20 SAY "ENTER PASSWORD  "
SET COLO TO N
@12,36 GET MPASS PICT "@!"
READ
SET COLO TO
LOCATE FOR USER=MUSER .AND. PASS=MPASS
IF EOF()
   @13,1
   WAIT +  "                    INVALIDE PASSWORD... PRESS ANY KEY."
   LOOP
ELSE
   EXIT
ENDIF
ENDDO
DO HAMAIN
CLEAR ALL
CLEAR
RETURN
||
```

```
***** CREATE RECORD PROGRAM MENU

DO WHILE .T.
CLEAR
@ 2,9 TO 20,65 DOUBLE
@ 3,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 4,15 SAY "                    ABUJA, F.C.T."
@ 6,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 7,15 SAY "                CREATE RECORD MENU"
@ 8,10 TO 8,64
@ 10,23 SAY "  ... HOUSE INFORMATION"
@ 12,23 SAY "  ... ALLOTTEE INFORMATION"
@ 14,23 SAY "  ... E X I T"
SET COLO TO GR+
@ 10,23 SAY "1"
@ 12,23 SAY "2"
@ 14,23 SAY "3"
SET COLOR TO W+
@ 17,23 SAY "Enter a choice..."
SET COLOR TO
I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "123"
   EXIT
ENDIF
I=0
ENDDO
DO CASE
   CASE UPPER(CHR(I)) $ "1"
     DO NEWHS
   CASE UPPER(CHR(I)) $ "2"
     DO HSALLOC
   CASE UPPER(CHR(I)) $ "3"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN
```

```
***** ENQUIRY RECORD PROGRAM MENU

DO WHILE .T.
CLEAR
@ 2,9 TO 20,65 DOUBLE
@ 3,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 4,15 SAY "                    ABUJA, F.C.T."
@ 6,15 SAY "      COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 7,15 SAY "                 RECORD ENQUIRY MENU"
@ 8,10 TO 8,64
@ 10,23 SAY "  ... HOUSE INFORMATION"
@ 12,23 SAY "  ... ALLOTTEE INFORMATION"
@ 14,23 SAY "  ... E X I T"
SET COLO TO GR+
@ 10,23 SAY "1"
@ 12,23 SAY "2"
@ 14,23 SAY "3"
SET COLOR TO W+
@ 17,23 SAY "Enter a choice..."
SET COLOR TO
I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "123"
   EXIT
ENDIF
I=0
ENDDO
DO CASE
   CASE UPPER(CHR(I)) $ "1"
     DO ENQHS
   CASE UPPER(CHR(I)) $ "2"
     DO ENQAL
   CASE UPPER(CHR(I)) $ "3"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN
```

```
***** REPORT MENU PROGRAM

DO WHILE .T.
CLEAR
@ 2,9 TO 21,65 DOUBLE
@ 3,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 4,15 SAY "                    ABUJA, F.C.T."
@ 6,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 7,15 SAY "                    REPORT MENU"
@ 8,10 TO 8,64
@ 10,23 SAY "  ... HOUSING ALLOCATION REPORT"
@ 12,23 SAY "  ... VACANT HOUSES REPORT"
@ 14,23 SAY "  ... SUMMARY BY DISTRICT"
@ 16,23 SAY "  ... SUMMARY BY HOUSE TYPE"
@ 18,23 SAY "  ... RETURN TO MAIN MENU"
SET COLO TO GR+
@ 10,23 SAY "1"
@ 12,23 SAY "2"
@ 14,23 SAY "3"
@ 16,23 SAY "4"
@ 18,23 SAY "5"
SET COLOR TO W+
@ 20,23 SAY "Enter a choice..."
SET COLOR TO
I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "12345"
   EXIT
ENDIF
I=0
ENDDO
DO CASE
   CASE UPPER(CHR(I)) $ "1"
     DO ALLOCREP
   CASE UPPER(CHR(I)) $ "2"
     DO VACREP
   CASE UPPER(CHR(I)) $ "3"
     DO STATREP
   CASE UPPER(CHR(I)) $ "4"
     DO TYPESUM
   CASE UPPER(CHR(I)) $ "5"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN
```

```
***** UPDATE RECORD PROGRAM MENU

DO WHILE .T.
CLEAR
@ 2,9 TO 21,65 DOUBLE
@ 3,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 4,15 SAY "                    ABUJA, F.C.T."
@ 6,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 7,15 SAY "              UPDATE RECORD M E N U"
@ 8,10 TO 8,64
@ 10,23 SAY "  ... EDIT HOUSE INFORMATION"
@ 12,23 SAY "  ... EDIT ALLOTTEE INFORMATION"
@ 14,23 SAY "  ... DELETE HOUSE INFORMATION"
@ 16,23 SAY "  ... DELETE ALLOTTEE INFORMATION"
@ 18,23 SAY "  ... E X I T"
SET COLO TO GR+
@ 10,23 SAY "1"
@ 12,23 SAY "2"
@ 14,23 SAY "3"
@ 16,23 SAY "4"
@ 18,23 SAY "5"
SET COLOR TO W+
@ 20,23 SAY "Enter a choice..."
SET COLOR TO
I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "12345"
   EXIT
ENDIF
I=0
ENDDO
DO CASE
   CASE UPPER(CHR(I)) $ "1"
     DO UPDATEHS
   CASE UPPER(CHR(I)) $ "2"
     DO UPDATEAL
   CASE UPPER(CHR(I)) $ "3"
     DO DELETEHS
   CASE UPPER(CHR(I)) $ "4"
     DO DELETEAL
   CASE UPPER(CHR(I)) $ "5"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN

□
```

```
***  SUMMARY BY HOUSE TYPE REPORT
CH1=SPACE(1)
STORE 0 TO P,TOCCUP,TVAC,TDIST,GTO,GTV,TGT
STORE SPACE(15) TO MDIST
CLEAR
STORE 60 TO L
USE HOUSING
SET FILT TO STATUS <> "Y"
SORT ON DIST,TYPE TO TEMP
SET FILT TO
USE TEMP
*SET DEVICE TO PRINT
GO TOP
MDIST=DIST
DO WHILE .NOT. EOF()
IF L > 22
P=P+1
@ 1,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 2,15 SAY "                    ABUJA, F.C.T."
@ 3,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 5,15 SAY "           VACANT HOUSE TYPE SUMMARY"
@6,01 SAY "DATE :"
@6,08 SAY STR(DAY(DATE()))+" /"+ STR(MONTH(DATE()))+" /"+
STR(YEAR(DATE()))
@6,70 SAY "PAGE "+LTRIM(STR(P))
@7,01 SAY REPL('-',79)
@8,01 SAY "DISTRICT"
@8,14 SAY "HOUSE TYPE"
@8,35 SAY "STREE"
@8,55 SAY "BLOCK"
@8,70 SAY "FLAT/UNIT"
@9,01 SAY REPL('-',79)
L=10
ENDIF
SET COLO TO W+
@L,01 SAY DIST
SET COLO TO
MDIST = DIST
L=L+1
TVAC=0
DO WHILE DIST = MDIST
   @L,14 SAY TYPE
   @L,35 SAY STREET
   @L,55 SAY BLOCK
   @L,70 SAY FLAT
   TVAC = TVAC + 1
   L=L+1
   SKIP
ENDDO
   @L,1 SAY "TOTAL VACANT UNIT(S) = "+LTRIM(STR(TVAC))
   L=L+2
ENDDO
   @L,1 SAY "TOTAL VACANT UNIT(S) = "+LTRIM(STR(TVAC))
CLOSE DATABASE
@L,1 SAY REPL('-',79)
CLOSE DATABASE
ERASE TEMP.DBF
WAIT
*EJECT
*SET DEVICE TO SCREEN
```

```
**** HOUSE ALLOCATION PROGRAM

SET INTE OFF
SET DELI ON
SET DELI TO "[]"
SELE 1
USE HOUSING
SELE 2
USE ALLOTTEE
DO WHILE .T.
CLEAR

@ 1,9 TO 23,70 DOUBLE
@ 2,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 3,15 SAY "                    ABUJA, F.C.T."
@ 4,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 6,15 SAY "          HOUSING ALLOCATION DATA ENTRY"
@ 7,10 TO 7,69
STORE SPACE(6) TO MFN
@8,15 SAY "HOUSE FILE NUMBER  [XXXXXX]=Exit " GET MFN PICT "@!"
READ
IF MFN =  "XXXXXX"
   EXIT
ENDIF
SELE 1
LOCATE FOR HFNU =  MFN
IF EOF()
   @23,1 SAY ""
   ? CHR(7)
   WAIT+"            FILE NUMBER NOT FOUND !  PRESS ANY KEY."
   @24,10 SAY SPACE(50)
   LOOP
ENDIF
IF STATUS = 'Y'
   K=SPACE(1)
   @24,5 SAY "HOUSE NO: "+RTRIM(MFN)+ " IS NOT VACANT, DO YOU WANT
TO RE-ALLOCATE IT ? (Y/N)" GET K PICT "!"
   READ
    IF K="N"
       LOOP
    ENDIF
    @24,5 SAY SPACE(73)
  SELE 2
    LOCATE FOR HFNU = MFN
    DELE
    PACK
ENDIF
SELE 2
APPE BLANK
@10,15 SAY "SURNAME  " GET SNAME PICT "@!"
@10,40 SAY "FIRST NAME  " GET FNAME PICT "@!"
@12,15 SAY "PLACE OF WORK   " GET OADDR PICT "@!"
@14,15 SAY "SEX   " GET ASEX PICT "@!"
@14,40 SAY "MARITAL STATUS  " GET AMSTATUS PICT "@!"
@16,15 SAY "DATE OF BIRTH   " GET ADTB PICT "99/99/9999"
@18,15 SAY "DATE OF APPT.  " GET DAPPT PICT "99/99/9999"
@18,43 SAY "TRANSFER DATE" GET DTRANS PICT "99/99/9999"
@20,15 SAY "RANK/DESIGN.    " GET ARANK PICT "@!"
@22,15 SAY "GRADE LEVEL     " GET GLEVEL PICT "999"
```

```
READ
MSN=SNAME
MFN=FNAME
MS = ASEX
MDT =ADTB
C=0
SET FILT TO SNAME=MSN .AND. FNAME = MFN .AND. ASEX = MS .AND. ADTB =
MDT
GO TOP
DO WHILE .NOT. EOF()
C=C+1
SKIP
ENDDO
SET FILT TO
IF C > 1
   @23,1 SAY ""
   ? CHR(7)
   WAIT+"          DUPLICATE RECORD NOT ALLOWED !  PRESS ANY KEY."
   @24,10 SAY SPACE(50)
   DELE
   PACK
   LOOP
ENDIF
REPL HFNU WITH MFN
K=SPACE(1)
SELE 1
REPLACE STATUS WITH "Y"
@24,15 SAY "[N]ext Entry  [E]nd Entry" GET K PICT "!"
READ
   IF K = "E"
      EXIT
   ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN
```

```
**** NEW HOUSING INFORMATION ENTRY PROGRAM

SET INTE OFF
SET DELI ON
SET DELI TO "[]"
USE HOUSING

DO WHILE .T.
CLEAR

@ 1,9 TO 23,70 DOUBLE
@ 2,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 3,15 SAY "                    ABUJA, F.C.T."
@ 4,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 6,15 SAY "          NEW HOUSING INFORMATION ENTRY"
@ 7,10 TO 7,69
STORE SPACE(6) TO MFN
@8,15 SAY "NEW HOUSE FILE NUMBER  [XXXXXX]=Exit " GET MFN PICT "@!"
READ
IF MFN =  "XXXXXX"
   EXIT
ENDIF
LOCATE FOR HFNU =  MFN
IF .NOT. EOF()
   @23,1 SAY ""
   ? CHR(7)
   WAIT+"            FILE NUMBER ALREADY EXITS !  PRESS ANY KEY."
   @24,10 SAY SPACE(50)
   LOOP
ENDIF
APPE BLANK
@10,15 SAY "DISTRICT              : " GET DIST PICT "@!"
@12,15 SAY "AREA NUMBER           : " GET AREA PICT "999"
@14,15 SAY "SECTION OF THE AREA   : " GET SECT PICT "999"
@16,15 SAY "STREET NAME           : " GET STREET PICT "@!"
@18,15 SAY "BLOCK NUMBER          : " GET BLOCK PICT "999"
@20,15 SAY "FLAT NUMBER           : " GET FLAT PICT "999"
@22,15 SAY "HOUSE TYPE            : " GET TYPE PICT "@!"
READ
REPLACE HFNU WITH MFN
K=SPACE(1)
@24,15 SAY "[N]ext Entry  [E]nd Entry" GET K PICT "!"
READ
   IF K = "E"
      EXIT
   ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN
```

```
***  HOUSING STATISTICS REPORT
CH1=SPACE(1)
STORE 0 TO P,TOCCUP,TVAC,TDIST,GTO,GTV,TGT
STORE SPACE(15) TO MDIST
CLEAR
STORE 60 TO L
USE HOUSING
SORT ON DIST TO TEMP
USE TEMP
*SET DEVICE TO PRINT
GO TOP
MDIST=DIST
DO WHILE .NOT. EOF()
IF L > 22
P=P+1
@ 1,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 2,15 SAY "                    ABUJA, F.C.T."
@ 3,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 5,15 SAY "            HOUSING STATISTICS REPORT"
@6,01 SAY "DATE :"
@6,08 SAY STR(DAY(DATE()))+" /"+ STR(MONTH(DATE()))+" /"+
STR(YEAR(DATE()))
@6,70 SAY "PAGE "+LTRIM(STR(P))
@7,01 SAY REPL('-',79)
@8,09 SAY "DISTRICT"
@8,30 SAY "NO OCCUPIED"
@8,50 SAY "NO VACANT"
@8,70 SAY "TOTAL NO"
@9,01 SAY REPL('-',79)
L=10
ENDIF
@L,09 SAY DIST
IF STATUS = "Y"
   TOCCUP=TOCCUP + 1
ELSE
   TVAC = TVAC + 1
ENDIF
SKIP
IF DIST <> MDIST
   MDIST=DIST
   TDIST=TOCCUP+TVAC
   GTO=GTO+TOCCUP
   GTV=GTV+TVAC
   @L,25 SAY TOCCUP
   @L,45 SAY TVAC
   @L,65 SAY TDIST
   L=L+1
   STORE 0 TO TOCCUP, TVAC
ENDIF
ENDDO
CLOSE DATABASE
@L,1 SAY REPL('-',79)
L=L+1
TGT=GTO+GTV
@L,09 SAY "TOTALS"
@L,25 SAY GTO
@L,45 SAY GTV
@L,65 SAY TGT
CLOSE DATABASE
ERASE TEMP.DBF
```

```
WAIT
*EJECT
*SET DEVICE TO SCREEN
RETURN
```

```
*** VACANT HOUSES REPORT
CH1=SPACE(1)
STORE 0 TO P
CLEAR
STORE 60 TO L
USE HOUSING
*SET DEVICE TO PRINT
SET FILT TO STATUS <> "Y"
GO TOP
DO WHILE .NOT. EOF()
IF L > 22
P=P+1
@ 1,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 2,15 SAY "                ABUJA, F.C.T."
@ 3,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 5,15 SAY "                VACANT HOUSES REPORT"
@6,01 SAY "DATE :"
@6,08 SAY STR(DAY(DATE()))+" /"+ STR(MONTH(DATE()))+" /"+
STR(YEAR(DATE()))
@6,70 SAY "PAGE "+LTRIM(STR(P))
@7,01 SAY REPL('-',79)
@8,01 SAY "FILE NO"
@8,09 SAY "DISTRICT"
@8,25 SAY "AREA"
@8,31 SAY "SECTN"
@8,37 SAY "STREET"
@8,67 SAY "BLOCK"
@8,74 SAY "FLAT"
@9,01 SAY REPL('-',79)
L=10
ENDIF
@L,01 SAY HFNU
@L,09 SAY DIST
@L,26 SAY AREA
@L,32 SAY SECT
@L,37 SAY STREET
@L,67 SAY BLOCK
@L,74 SAY FLAT
L=L+1
SKIP
ENDDO
SET FILT TO
CLOSE DATABASE
@L,1 SAY REPL('-',79)
CLOSE DATABASE
WAIT
*EJECT
*SET DEVICE TO SCREEN
RETURN
```

```
*** HOUSING ALLOCATION REPORT
CH1=SPACE(1)
STORE 0 TO P
CLEAR
STORE 60 TO L
USE ALLOTTEE
*SET DEVICE TO PRINT

GO TOP
DO WHILE .NOT. EOF()
IF L > 22
P=P+1
@ 1,15 SAY "MINISTY OF FEDERAL CAPITAL TERITORY HOUSING UNIT"
@ 2,15 SAY "                    ABUJA, F.C.T."
@ 3,15 SAY "     COMPUTERISED HOUSING ALLOCATION SYSTEM"
@ 5,15 SAY "          HOUSING ALLOCATION REPORT"
@6,01 SAY "DATE :"
@6,08 SAY STR(DAY(DATE()))+" /"+ STR(MONTH(DATE()))+" /"+
STR(YEAR(DATE()))
@6,70 SAY "PAGE "+LTRIM(STR(P))
@7,01 SAY REPL('-',79)
@8,01 SAY "FILE NO"
@8,09 SAY "FULL NAME"
@8,35 SAY "PLACE OF WORK"
@8,64 SAY "DATE OF APPT"
@8,77 SAY "G.L"
@9,01 SAY REPL('-',79)
L=10
ENDIF
@L,01 SAY HFNU
@L,09 SAY SNAME+", "+FNAME
@L,35 SAY OADDR
@L,65 SAY DAPPT
@L,77 SAY GLEVEL
L=L+1
SKIP
ENDDO
CLOSE DATABASE
@L,1 SAY REPL('-',79)
CLOSE DATABASE
WAIT
*EJECT
*SET DEVICE TO SCREEN
RETURN
[]
```