COMPUTERISED CONTROL OF THE PROJECT ACTIVITIES OF AN ENGINEERING ORGANISATION (A CASE STUDY OF)

NIGER STATE HOUSING CORPORATION (N.S.H.C) MINNA.

BY

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APPROVAL SHEET

This project has been examine and found acceptable in partial fulfilment of requirement for the P.G.D in computer science of Federal University of Technology Minna.

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DEDICATION

The project is dedicated to my beloved wife and daughter, Mrs Aishat

Alhassan Musa Danladi and Asmau Alhassan Musa Danladi.

ACKNOWLEDGEMENT

Thanks to Allah Ta'ala, the most merciful the beneficent and most provider.

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Allah bless Ameen.

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ABSTRACT.

Niger State Housing Corporation was established by an edit with aim of improving the living standard and condition of people in Niger State and Nigeria as a nation.

The corporation as a system is made up of units, which are Planning, Engineering, Estate Surveyors, Architecture and Quantity Surveyors, which are functionally involved in consultancy and consultancy and contractual services.

However, to ensure effective monitoring and control of performance of the corporation which is the project execution or accomplishment there is need for smooth flow of plane of the project activities thus improvement on information flow with aid of computer application involvement into the control of the project activities which will, as a result, aid in effective decision to tackle both complex and simple projects by easy flow of information within the units in the corporation derived from more available quality records and data in the computer.

In view of the above the concept of computer in the case study, only small area in the corporation, is however instituted with computer application.

Nevertheless, for reliable footing on technological advancement of computer ▮▮▮▮▮▮ in the corporation, could take the corporation to a tremendous high of success on a rapid process.

Further more, urgent implementation of aforemention concepts of computer literacy could relay the knowledge of reducing delay in retrieval and flow of records and data.

Thus the research is divided in to five chapters; Chapter one deals with the insight of the work tool of the study, while chapter two is enlightening about the case study internal units background, chapter three states the existing activity control analysis and consequential computer application, while chapter four elaborates about proper execution of computerised system environment to change over and steps of interacting with the new system. Finally, chapter five states the summary, conclusion and recommendations.

CHAPTER ONE.

1.1. INTRODUCTION

The productivity of any nation is substantively influenced by provision of good housing to its elite or employees.

Viewing housing socially, a house that is good improve the living condition of the citizen of any nation in that it provide individual honour, privacy and an avenue to do what he like, hence increase his zeal to serve at his place of work which influence good productivity of work which give less capacity of absenteeism and rise of work force. And economically the employer has generate employment to employee and therefore get profit as income which serve both directly to the employee and employer, and further indirectly links other sector of economic.

House is an investment, good and capable of generating income and also a tool goal of a development policy, also a very good fovaourable investment climate for shelter.

Essentially there are many housing policies with thrust of assuring house functions adequately comfortable to meet social economic needs of the country and to provide an effective instrument of national development policy.

In Nigeria as a developing nation mode of houses are changing gradually from muddy thatched houses to modern blocks or bricks houses with Galvanise iron roof, Aluminum roofs and roofing tiles. Further more the people from rural to urban has cause the idea of different types of houses to be innovated which could be of low cost and high cost houses, G.R.A houses, Satellite town and estate serving house with regard to category of needs.

By an large incorporation of land development policies and town planning policies during the design is essential as lack of continuity in ruling regime gives the difficulty of aim and objective achievement in that inflation and indiscriminate granting of contract lead to abundance of projects, which effect low earners most especially government civil servants who leave in depilated houses end up spending their earning on patching the houses. Thus principal problems of housing includes;

a. Lack of service renovation of the houses.

b. Increase in building material cost.

c. Involvement of polity in construction policies

d. In adequate statistical base of people leaving in standard houses.

e. Lack of long term policy exercises.

Thus housing organisations require planning and control in order to achieve the targeted objectives. Its in this consideration the effective of computer application is needed to monitor and control the housing production activities.

1.2. HOUSING ORGANISATION

This is a set up system to bring the problematic accommodation prevailing over the under developing countries like Nigeria.

Thus the establishment of the housing organisation by private and Government sectors, effectively accepted in to the development policy of the nation is highly appreciative.

On these write up the concept based on engineering is generally viewed in design of the house to attain maximum comfortability of the house at affordable price deposited the location.

An housing organisation could come in different forms of operation such as;

a. Proprietorship.

b. Partnership

c. Corporation

Above different categories of housing providers satisfied different types of buyers or renters of which could be sited in different location like, cities, town, rural or urban, satellite areas or wherever the organisation is called to serve.

However the housing organisation need the concept of engineering to innovate a durable building material which could be used in constructing some buildings to achieve tremendous success of satisfaction of the owner in that cheap material could be made with early materials locally like traditionally used burnt bricks, roofing tiles manufactured with little or less chemicals.

Further view on housing organisation ideally oriented in Engineering perspective needs the housing project to be planned for execution in less time to achieve, less direct and indirect cost estimated cost to be abide-by also project program set-up to achieve shortest project time and cost.

1:3. HOUSING SERVICES AND TYPES

For an individual cover, privacy, honour and provision of avenue for one to do what he like he must have a house" called up from 'Housing today publication.

An housing organisation needs above as one its ethics, thus need different schemes to provide its elite's with houses witting it reach, further more types of structure that could be affordable by buyer's statue socially and economically should be

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innovated and modes of acquiring the houses contract service from government and private sector areas follows:

a. Consultancy services; Professional services to interested member are provided in field of housing development, planning and engineering.

b. Project contractual services; undertaking of contracting of construction of market, secretariat conversion of building to desired types etc.

c. Estate services; wide services on requested;-

    i.   Rental or owner occupier

    ii.   Estate surveying services on costing of an existing structure or house, mortgage paying of houses.

    iii.   Site and Services;- Development required land for needed on request.

However the house services and type are always considered in respect of its engineering feasibility before accepted from the client.

1:4. OBJECTIVES OF THE STUDY

The computerisation of an organisation was ideally meant to study the existing procedural function of the organisation towards the actuation of the objectives of the study which is very purposely to the organisation.

Thus the objectives are:

i.   To analyse the existing function and problems of its execution.

ii.   To implement economic and managerial measures towards achieving comfort and cheap housing.

iii.   To stimulate the need for computerised project activities's execution aimed at replacing the existing processes control.

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iv.   To design a computerised project activities by interacting each unit of the

corporation's control of its activities.

1:5   SCOPE

The computerisation of the case study is a large task and money consuming

never-the-less its of good to be on technological advancement side for ease of retrieval

and flow of information from each unit, therefore undertaken and implementing the

study outcome could be of modesties technological improvement to Niger State housing

corporation. To achieve include.

a. Desk researches; where lecture notes, library and public action and journal

were used.

b. Observation; physically observation of the daily movement of the organisation

happening and participating in the execution of the activities.

c. Acquisition of Information; This is an interviewing staffs about the nature of

job and how he feel about doing it and how he want it to be.

CHAPTER TWO.

2:1 PROJECT PROCEDURE AND CONTROL.

The success of any project is to see that good completed at a stipulated time with good adherence to the standards and specifications, conformation to land use code of practice and engineering concept of stability, durability and easthetichreas.

As project implies planning to accomplish an object is procedurally actuated when an agreement has been reached with the head of an organisation. A file is open in the name of the project with indication whether the project is new or renovation.

If the project is new all the system units are involved but if its just renovation or extension some of the units are only selected to undertake the job needed to be done.

More over the job file is then send to the director of works for controlling the activities where he assign each unit head to open file for the said project and to produce its statements.

However the planning unit professionals visit the land or area, for topography access area, survey and sketch the layout. The arch section put the idea into plan for the engineering electrical, structural and mechanical designs and sketches which are manually done and tediously laboured on and costly in material wise.

To achieve various operation on timeliness and qualitative information for purposeful control and decision making, computer provision to aid in undertaking this task is highly appreciative to each unit operators.

2:2. PROJECT ACTIVITIES AND PROBLEMS

In view of the above subject the activities of project development in respect to each unit are event which are undertaken in respective order of programmed activities as tabled below.

S/NO	UNIT	EVENT	ACTIVITIES
1.	Administration	Project file	Site take over
2.	Planning	Survey sketches	Layout and setting out
3.	Qualitative survey	Costing project	Building bill of quantities
4.	Architecture	Building plan	Building plan, paint schedule
5.	Civil/Building	Civil/Structure design	Project construction
6.	Electrical/Mech.	Electrical Design	Conducting and fittings
7.	Estate survey	Project records of completed project.	Hand over of projects.

The above table illustrates the activities and events due to each unit which are construction programme of a project from inception to finish and hand over of the project.

PROBLEM. The problems in each unit are peculiar to one another in that.

i.   The sketches are manually prepared, which are very much exposed to lost and chemical effect thus worn out.

ii.   The mode of storage of the sketches is in secured that they can be stolen or sold out, hence call for new ones.

iii.   Unease of retrieval when in need for check or correction after long time of storage.

iv.   Careless of handling of Bill of Quantities lead to lost of some pages which create delay in dealing with arise problem.

v.   Delay in project progress report as all unit must be consulted before final compilation, hence cause delay of the report presentation.

vi.   Lack of accurate number of materials used on each project due to frauding.

All above cause mental retardation and cause the organisation money, labour and time, hence spirit of progress is highly reduced.

2:3 NIGER STATE HOUSING CORPORATION

The case study of this project is Niger State housing Corporation was established in 1979 by an edict with an aim of bringing and end to problematic accommodation issue in the state capital and the nation in general, and to improve the living condition of the people within rural urban and state capital by providing affordable houses for different category of earners in both public and private sectors.

However housing corporation have innovated a lot of durable building materials which have been applied in some building projects, like traditional low cast, with tremendous success and satisfaction.

Housing Corporation has units with its team of professionals qualified and experienced in the system. These units undertakes activity, out of a stated project from inception to finish, the units are Administration, planning, Quantity Surveyor, Architectural unit, Civil/building electrical, Mechanical Engineering and Estate Survey Sections.

In view of these the corporation undertake consultancy services, project contractual services and estate survey services which give it legal Wright and

responsibility in commercial field to serve the public, private and Government sectors in tendering and carrying out of a single undertaken or several alike in nature contracts.

To compliment the corporation success, the application of computer service in to the procedural activities of its project could yield a tremendous achievement.

2:4 ORGANISATION CHART

The organisation charts of the corporation enlighten its staff the order lines and hierarchy of working together to accomplish a common goal. Head directs each unit is directed by Head of Departments, who is controlled by director who is further along given directive by the General Manager, to bear and undertake any assign job of the stake project. As could be deduced from the chart below.

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                        ┌─────────────────────┐
                        │  GENERAL MANAGER    │
                        └──────────┬──────────┘
                                   │
                        ┌─────────────────────┐
                        │ DIRECTOR PERSONNEL, │
                        │    MANAGEMENT       │
                        └──────────┬──────────┘
                                   │
  ┌────────────────┐               │                    ┌──────────────────┐
  │ NEL ASSISTANT  │───────────────┼────────────────────│ INTERNAL AUDIT   │
  └────────────────┘               │                    └──────────────────┘

  ┌──────┐   ┌──────────────┐  ┌──────────────┐  ┌───────────┐
  │ MGT  │───│ FIN & SUP.   │──│ DIRECTOR     │──│ PLANING   │──┌─────────────┐
  │ PT.  │   │ DEPT.        │  │ WORKS        │  │ DEPT.     │  │ ESTATE DEPT │
  └──┬───┘   └──────┬───────┘  └──────────────┘  └─────┬─────┘  └──────┬──────┘

 ┌──────┐ ┌──────┐ ┌───────┐        ┌────────┐ ┌─────────┐ ┌─────────┐ ┌──────────┐
 │P.R.O │ │ CPT  │ │ STORE │        │ LAND   │ │ TOWN    │ │SECURITY │ │ CATERING │
 └──────┘ └──────┘ └───────┘        │ SURVEY │ │PLANNING │ └─────────┘ └──────────┘
                                    └────────┘ └─────────┘

 ┌──────────────┐      ┌──────────────┐      ┌────────────┐
 │ ARC SECTION  │      │ EGN. G       │      │ QUANTITY   │
 └──────────────┘      │ CIVIL BUILD  │      │ SURVEY     │
                       │ ELECTRICAL   │      └────────────┘
                       └──────────────┘
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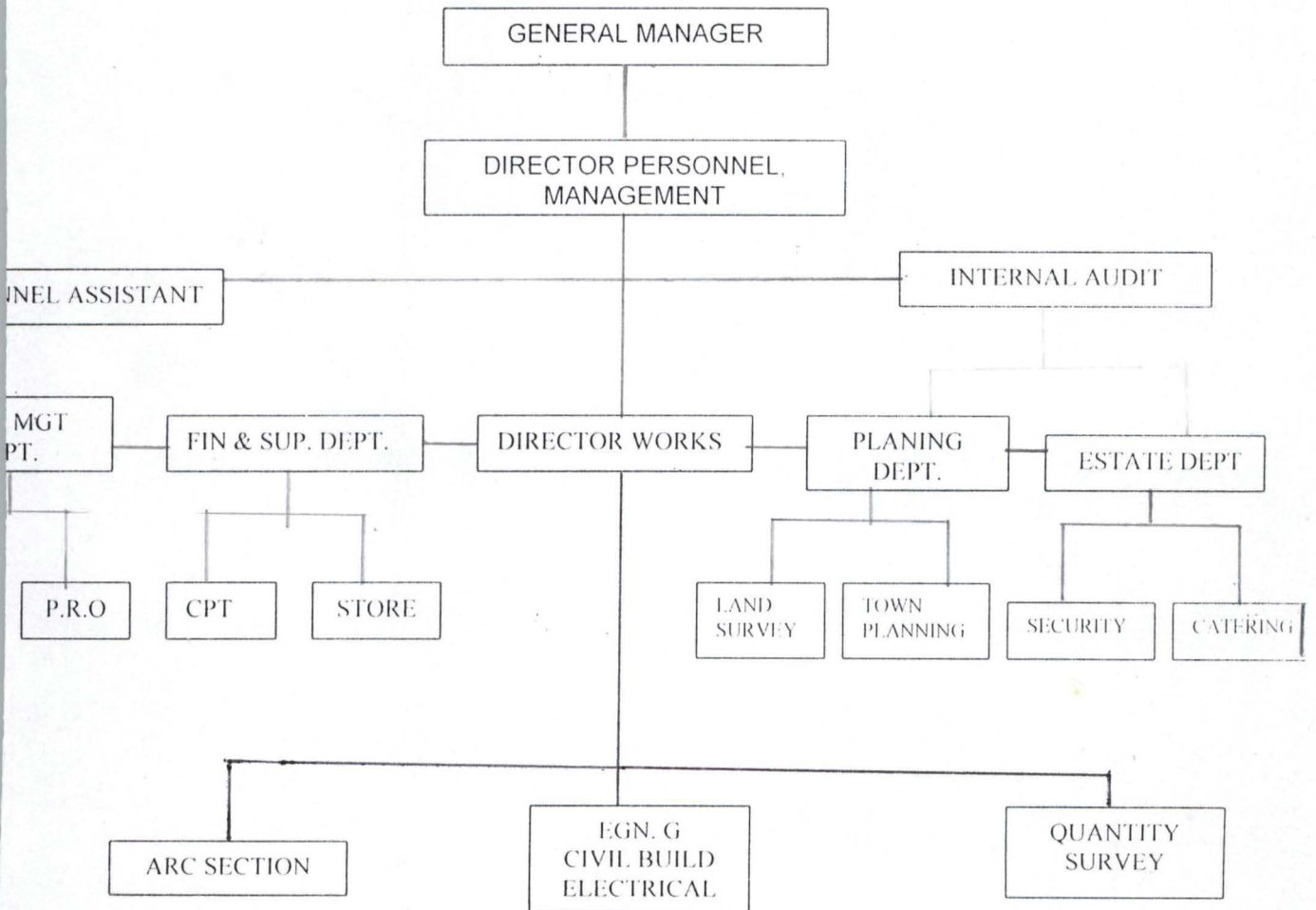
3:1. INTRODUCTION

The Niger State housing Corporation has been operating. Since 1979 when it was established its contractual or operational activities have been carried out manually, thus in these write-up chapter its current activities procedure and its association problems in order to aid, in the design of an alternated system, a design suitable for the system in terms of in put and out put form of specification data base file design and suites of program that will execute the required task are carried out.

3;2. EXISTING METHOD AND PROBLEMS

In the areas where manual operations are still in practice there exist a lot and various problems such as lost of vital information. In security of information data, lost of building plan drawings and lateness of sketches retrieval for amendment and reprinting, hence lead to line efficiency in general operations of the organisation which result to net effect of not meeting up the objectives.

Specifically the Niger State housing corporation is faced with major problems peculiar with non-computerised organisation as out lined below:

i.   Time wastage in preparation of project site layout sketches.

ii. Time wastage in Architectural electrical, and Civil Engineering design and sketches.

iii. Lack of proper storage medium for building bill of qualities and also its timely preparation.

iv. Lack of proper accounts record storage and security for project financial analysis.

v. Poor store records of issued stocks or remains project materials, consumables and vehicle parts.

vi. Lack of proper vehicle maintenance and movement record.

vii. Unreliable records of information and data of the corporation system.

3:3. CURRENT METHOD OF OPERATION.

These stage of system development involves the assessing, the existing procedure in the organisation, thus it's base on the analysis that could be applied, practically to suite the future needs of the organisation.

At present the whole activities of the organisation are performed manually. Information about projects on construction, renovation, those on preliminary design, building bills of qualities, building materials, vehicle movement and those on repair, staff lists are all recorded and processed manually on file jackets which are obviously insecure, more over the delay in retrieving new and old records and data lead to inefficiency and difficult in meeting up the set up goals of the organisation.

3:4 PROPOSED SYSTEM.

In view of the problems enlisted earlier its of paramount to design a system that could eliminate all the problems identified on course of the research and in addition to ear mark the software packages suitable for each activities for smooth operation of each unit in the system.

It is intended to be designed in form of many driver where users could properly select from main menu, submenu, sub-submenu and further, which implies that all facilities of the new system would be presented in a menu structure and others, to ease access to users and programmers of the computers within the corporation.

3:5   COST BENEFIT

The cost benefit of the proposed system in socio-economic view would bring the organisation to modern technological level of operation of worthy consideration thus in term of cost is the financial implication which the benefit could be on the respected reach of performance and result of the system positive achievement hence the cost and benefit analysed below.

3:5:1 COST ANALYSIS

In order to analytically determine the cost of operation under the existing system its necessary to recognise the various way in which cost may be incurred thus are categories as follows.

A.   Development cost.

    i.   Computer Hardware;

        5 No of IBM compatible at N140,000.00 =   N700,000.00

    ii.   Uninterrupted Power Supply (UPS)

        5 No of UPS (600 Volts) at N15,000.00   =   N75,000.00

    iii.   Printer;

        a. i. 3 LaserJet printer at N42,900.00 each   N128,700.00

        ii. 2 Epson Printer at N64,000.00 each N129,800.00

        b. Cost of software development   N120,000.00
        c. Installation cost   N25,000.000
        d. Personnel training   N20,000.00
        Total   =   **N1,198,500.00**

B.   **SYSTEM OPERATING COST**

i.   Program maintenance.

	1 programmer at N8000;00 quarterly	=	N32,000:00
ii.	Installation of Air Conditioner		
	5 No. of Air Conditioners	=	N225,000.00
iii.	Utilities (lights)	=	N10,000.00
iv.	Computer papers and consumables	=	N200.000.00
v.	Miscellaneous expenses	=	N50,000.00
	TOTAL	=	**N517,500.00**

Grand Total Cost of development and system operating cost **N1,715,500.00**

3:5:2 BENEFIT OF THE PROPOSE SYSTEM

Specifically the organisation could derive a lot of benefit from the newly design system which include:-

i. Efficient operating the corporation produce.

ii. Avoidance of existing system problems.

iii. Automated project activity procedure and control

iv. Maintenance of data security.

v. Efficiency and improvement of retrieval and storage of information.

3:6. CHOICE OF LANGUAGE.

The propose system is written using data function management system (software package) which function with its strategies of creating, retrieving, maintaining and organising information from a database where the corporations related information or data are stored.

However the choice of DBMS is in the convenience of its function as followed below:

a. Retrieves data from database.

b. Update information from database.

c. Consistence and integrity maintenance of data.

d. Organise and shear data within users.

e. Create and populate a database.

However D.B.M.S. comes in various types which includes dbase, paradox, oracle, FoxBASE, Informix. Specifically the new system is developed in dBaseIV.

3:7:1 HARDWARE REQUIREMENT.

The new system is design to work on standard micro computerise system should include a micro described with capacity of each below;

COMPUTER HARDWARE. A micro computer with micro processor of about pentium 166MHZ and a minimum RAM of 16MB and floppy disk drive unit providing for 3.5 inches diskette all to satisfy the feature of the proposed micro computer to ensure speedy retrieval of information and future needs of the cooperation.

PRINTER – A neat letter qualify feature and speed of about 1200 lines per minutes and maximum width of 132 characters per line is recommended, for hard copies of the organisation necessary reports, specifically. EPSON printer, LQR170 and a LaserJet printer (LaserJet6L) for production of text and reports.

U.PS. (Uninterrupted Power Supply) is a facility with capability for automatic provision of power incase of power failure, thus ensures constant supply of power to the computer and its environs for continuity of Job.

3:7:2 SOFTWARE REQUIREMENT.

Introduction of computer application to Niger State Housing Corporation should be used to facilitate the activities of all main units in the corporation which are in text preparation. Engineering designs, Architectural designs, Graphic design and other forms of data processing.

As a new system, packages with ready-made programs are ease mostly required for set of units as they have advantages of flexibleness relatively cheap and ease to use. Therefore the dBase IV, Word Perfect 6.0 (Word processing package) Lotus 1-2-3 (spreadsheet Package), Lotus (Graphic Package), and Auto Card could be picked for suitability functioning, in respect of the unit use.

3:8:1 SYSTEM INPUT SPECIFICATION.

As the saying goes that computer is a "Dummy" it performs the task of processing data imputed in to the computer system with a specified source and type of data that need to be supplied in to the system.

Due to the fact of computer balance which states "Garbage in Garbage out" (GIGO) gives that "information given-in is correct to information given out.

With this recognition the inputs of the new propose system is designed to produce a cost effective method, achieve highest level of accuracy and ensure that the input is acceptable and understandable by users programmes:-

Thence for the propose system three forms of point for data supplying in to the system are; New projects, Projects on extension and renovation and on going projects.

3:8:2. SYSTEM OUT PUT SPECIFICATION.

It's expected of a task to be internally performed and the computer user. However, out puts are results and information generated by a system which are result primarily required to communicate the processed result to users, other systems, and permanent copy for consultation.

3:9. DATA BASE FILE DESIGN.

In order to reduce data duplication, in consistence and to increase share-ability, privacy and also ease access to data. The data base file design is desirable to be able to save the files and update information on transaction also to aid in management views of the organisation by the database management system.

The design therefore defines the description of all files that could be use in the proposed system and their menu table content.

Further more, the proposed system units are designed to use suitable packages and bear on personal computer data base files as follows: -

ADMIN. DBF. Is a file with records and formation on contracts, personnel assistance works and project records.

FIN/STORE DBF. Is a file with records and informations an Accounting, Auditing, store, contract financing record.

QUANTITY SURVEY DBF:- Is a file with records and information on billed projects, estimates of contracts or projects and bill of quantity preparation.

ARC/PLANNING DBF: Is a file with records and information on building plans drawings, area survey and land topography layouts.

ENGINEERING DBF: Is a file with record and information on civil, Electrical

design.

ESTATE SURVEY DBF: Is a file with records and informations on complete

project, rental monthly payment records, information on client and tenants.

3.9. SOURCE PROGRAM SPECIFICATION.

The design of the computer software is important to ensure that the actual

program produced perform all intended task of decision making and feature modification

to be performed efficiently with minimum bug to the designed system. Thus the menu of

project activity program is used as the source program with documentation listed in

'appendix II.

4:0 SYSTEMS IMPLEMENTATION.

4:1 INTRODUCTION.

The systems implementation and application is a stage required to effect the newly designed system in to the existing organisation environment, conducive for efficient working of the system. This chapter emphasis on description of menu screen choice, testing of the system, its starting and effecting the change over of old by the new system finally implementation review to check effectiveness, durability of the propose system.

4:2: DESCRIPTION OF MENU

The menu structure is the point of discussion using the figures represented on the screen designed for the proposed system.

Specifically the new system has three option in the first level menu which lead to others and shown on figure 1 in the appendix 1 which are contractual projects consultancy projects and abandoned projects.

However, each 1 level menu formats are descriptively represented on the figures in appendix 1.

REPORT GENERATION: This is an option used to generate the hard copy result of the processing.

EXIT: Once the user is through with the system at any time the system exit option is accessed for exiting the software properly.

4:3. <u>SYSTEM TESTING AND DOCUMENTATION.</u>

To ensure system works accurately and efficiency before live operation commences the system need be tested, also the local and physical design be thoroughly and continually examine on paper to confirm the correctness of the system by user before implementation.

However, if the proposed system was fully tested and ensured could work as required, and as carefully selected tested data were used to enter into the system. Thus the results were used in comparison with result obtained from previous run and were found to be the same.

In view of this, its then concluded that the newly development system is working accordingly.

Further more in view of above description of how these systems work and better understanding of the system by the user when problem arises there is need for documenting the propose system as stated earlier in the menu description.

4:4: STARTING THE SYSTEM.

As the new system is developed using dBase IV which should be installed on the computer to be procured, after which the program would start by typing "DO MAIN" which lead into the firs level of menu and the user would further select from the choice available.

4:5: <u>CONVERSION AND CHANGE OVER</u>

The file conversion of old (existing) system files to the format and content required by the new system and setting up the converted files in to the computer were

'all process which when finished, (the change over), where the full replacement of all the old procedures by the new ones are done.

For more enlightening change over could be effected to the newly system by either chosen one of the following.

i.   parallel change over

ii.   Direct change over

iii.   Pilot change over.

Where parallel change over is a type of method where old and new system are concurrently run and, Direct change over is where new one take over the old one and pilot change over is changing the old by new on piece meal bases.

The above all are good for system change over but for the newly propose system a parallel change over method is recommended. As parallel suite the back ground of the conservation where file conversion and file set up can be performed at the same time with adherence within the period of change over. The storage activities and retrieval activities of data and information are not in any way affected.

4:6 POST IMPLEMENTATION REVIEW

When the completion of the implementation and conversion are made there is need for the system review which has to do with maintenance against environmental changes which might effect the computer hardware or the base system. These, also, will lead to the improvement of the system, function and ease on correcting arise fault during the operating of the system.

The review is objectively needed to:

I.   Determine the objective and aim of the system

II.   Determine if unexpected limitation of the system needs attention.

III.   Determine service requirement in reduction of errors and cost.

IV.   Determine if personnel procedures, operative activities and other controls have been improved.

How ever users call for amendment directly and also expected to identify problem areas or external requirement of the system. Thus base on these the system is redesign to meet the requirement whenever the users agree for the system inefficiency or amendment.

5:1. SUMMARY.

Niger State Housing Corporation Minna is an Engineering corporation under ministry of Environment established to implement the housing policy in providing houses to the people within and outside the state. These objectives were adhered to by provision of houses on rentals, ownership scheme. Site and services contractual projects and many more like renovation and conversion on extension of building structures.

However with increase in population and economic activities there is call for efficient control and management of provision of affordable accommodation for the populace.

For good foundation of computer base system it analysis the background and objectives of the organisation, the existing departmental units as well as the organisation chart.

In line with these the designing was done given due consideration to the procedural operation and problems peculiar to the respective units were highlighted.

The design was solely base on logical and physical designed By-an-large the logical issue were base on input and output forming specification and database files required by the system while the physically design contains in the menu program codes.

On the hand of implementation of the new system the software, system conversion and change over were given due consideration.

Finally, in conclusion of the project necessary recommendations were highlighted in order for the major objectives of setting Niger State Housing Corporation on good computerisation part.

5:2: RECOMMENDATION

Housing is indispensable in all socio-economic activities of our human life. House is an avenue for one to do what he likes, have protection against likes, ill health, and self-prestige and also good investment climate for shelter.

Nigeria as developing nation, it has become clear that manual operation and control of the organisation could not meet up with the requirement of efficient and timeliness execution of its project, mainly of offices and houses, it therefore become imperative for most organisation as Niger states housing corporation to unequivocally accept the concept of computerisation in rendering services to customers and client.

Thus the highlighted problems and anticipated ones could be solved the computer base system of the organisation.

5:3. CONCLUSION.

The purpose system installation is to ensure maximum benefit thus for immense benefit following recommendations are for adoption.

MANPOWER:- The requirement of manpower reviewing is needed most especially the present manpower. The typist who are not computer literate needs be trained to use word processor and some staffs need be employed like in-house programmer with basic knowledge of Data base management system and dBase IV program. This is to ensure feature modification suit programs that constitute this propose system.

PERSONNEL TRAINING:- The need for training of each unit designed system staff with respect to type of packages of the proposed system before installing the designed system.

SECURITY:- Securities of any computer room should be orderly stated to avoid both logical and physical problems hence should be applied to both staffs and outsiders of the corporation.

COMPUTER ENVIRONMENT:- The good system should be goodly treated for efficient durable function of the computer itself. Therefore the normal air conditioning needed to keep the room cool at all times for the durability and maximization of the importance of a computer base system.

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│                                                         │
│      NIGER STATE HOUSING CORPORATION, MINNA             │
│                   NIGER STATE                           │
│                                                         │
│   COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM        │
│  ─────────────────────────────────────────────────────  │
│                                                         │
│          [A]   CONTRACTUAL PROJECTS                     │
│                                                         │
│          [B]   CONSULTANCY PROJECTS                     │
│                                                         │
│          [C]   ABANDONED PROJECTS                       │
│                                                         │
│          [Q]   E X I T                                  │
│                                                         │
│          Enter your choice.                             │
│                                                         │
└─────────────────────────────────────────────────────────┘
```

DEVELOPED BY:- ALHASSAN MUSA DANLADI (PGD/MCS/98/99/803)

```
┌─────────────────────────────────────────────────────────┐
│                                                         │
│      NIGER STATE HOUSING CORPORATION, MINNA             │
│   COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM        │
│                                                         │
│          CONTRACTUAL PROJECTS MENU                      │
│  ─────────────────────────────────────────────────────  │
│          [A]   ADD NEW PROJECTS                         │
│                                                         │
│          [B]   UPDATE ON-GOING PROJECTS                 │
│                                                         │
│          [C]   VIEW PROJECTS                            │
│                                                         │
│          [D]   PRINT REPORT                             │
│                                                         │
│          [Q]   E X I T                                  │
│                                                         │
└─────────────────────────────────────────────────────────┘
```

Enter your choice.

I

```
+-------------------------------------------------------------+
|                                                             |
|        NIGER STATE HOUSING CORPORATION, MINNA               |
|    COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM           |
|                                                             |
|          CONSULTANCY PROJECTS MENU                          |
|  ---------------------------------------------------------  |
|                                                             |
|          [A]   ADD NEW PROJECTS                             |
|                                                             |
|          [B]   UPDATE ON-GOING PROJECTS                     |
|                                                             |
|          [C]   VIEW PROJECTS                                |
|                                                             |
|          [D]   PRINT REPORT                                 |
|                                                             |
|          [Q]   E X I T                                      |
|                                                             |
+-------------------------------------------------------------+

          Enter your choice.


+-------------------------------------------------------------+
|                                                             |
|        NIGER STATE HOUSING CORPORATION, MINNA               |
|    COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM           |
|                                                             |
|          ABANDONED PROJECTS MENU                            |
|  ---------------------------------------------------------  |
|                                                             |
|          [A]   ABANDON A PROJECT                            |
|                                                             |
|          [B]   UPDATE/RESTORE PROJECT                       |
|                                                             |
|          [C]   VIEW PROJECTS                                |
|                                                             |
|          [D]   PRINT REPORT                                 |
|                                                             |
|          [Q]   RETURN TO MAINMENU                           |
|                                                             |
+-------------------------------------------------------------+

          Enter your choice.
```

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

        NEW CONTRACTUAL PROJECTS DATA

PROJECT TYPE [E=EXTENSION; F=FRESH; R=RENOVATION Or X=Exit  [F]
    PROJECT ID.NO  [    21]
                                              ─PAGE-1─────
    Land Acquisition          [   3]
    Survey Sketches           [   2]
    Architectural Design      [   5]
    Civil/Building Design     [   3]
    Electrical Design         [   2]
    Bill of Quantity          [   2]
    Estate                    [2    ]
```

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

        NEW CONTRACTUAL PROJECTS DATA

PROJECT TYPE [E=EXTENSION; F=FRESH; R=RENOVATION Or X=Exit   [R]
    PROJECT ID.NO  [    13]
                                              ─PAGE-1─────
    Project Description   [RENOVATION OF HOSPITAL        ]
    Contract No:          [099/2933   ]
    House type            [2 BLOCKS (WARDS)      ]
    Location of the house [GEN. HOSPITAL,MINNA ]
    Contract sum (Naira)  [    1,029,302.00]
    Date started          [06/04/2000]
    Expected date of completion  [01/02/99   ]
```

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

NEW CONSULTANCY PROJECTS DATA
```

```
PROJECT TYPE [E=EXTENSION; F=FRESH; R=RENOVATION Or X=Exit   [F]
      PROJECT ID.NO  [    16]
                                              ----------PAGE-2----------
      Project Description    [CONSTRUCTION OF NEW EXTENSION ]
      Contract No:           [394/23      ]
      House type             [OFFICE                 ]
      Location of the house  [BOSSO ESTATE           ]
      Contract sum (Naira)   [    74,877,743.00]
      Date started           [01/01/1999]
      Expected date of completion  [  /  /     ]
```

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

NEW CONSULTANCY PROJECTS DATA
```

```
                                              ----------PAGE-3----------
      Site clearance          [   2]
      Setting out             [   1]
      Excavation              [   1]
      Substructure            [   1]
      Superstructure          [   1]
      Roofing                 [   2]
      Doors and Windows       [   2]
      Conduit Wiring          [   1]
      Plastering              [   2]
      Painting                [   3]
      Hand over               [1   ]
```

```
+----------------------------------------------------------------------+
|        NIGER STATE HOUSING CORPORATION, MINNA                        |
|     COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM                   |
|                                                                      |
|        UPDATING CONTRACTUAL PROJECTS ACTIVITIES                      |
|----------------------------------------------------------------------|
| PROJECT TYPE [E=EXTENSION; F=FRESH; R=RENOVATION Or X=Exit   [F]     |
|      PROJECT ID.NO  [    22]                                         |
|----------------------------------------------------PAGE-1------------|
|        Land Acquisition         [   2]                              |
|        Survey Sketches          [   3]                              |
|        Architectural Design     [   3]                              |
|        Civil/Building Design    [   2]                              |
|        Electrical Design        [   2]                              |
|        Bill of Quantity         [   2]                              |
|        Estate                   [   1]                              |
|                                                                      |
+----------------------------------------------------------------------+


+----------------------------------------------------------------------+
|        NIGER STATE HOUSING CORPORATION, MINNA                        |
|     COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM                   |
|                                                                      |
|        UPDATING CONTRACTUAL PROJECTS ACTIVITIES                      |
|----------------------------------------------------------------------|
| PROJECT TYPE [E=EXTENSION; F=FRESH; R=RENOVATION Or X=Exit   [F]     |
|      PROJECT ID.NO  [    22]                                         |
|----------------------------------------------------PAGE-2------------|
|     Project Description     [CONSTRUCTION OF HOUSE          ]        |
|     Contract No:            [45/304/98 ]                             |
|     House type              [2 BEDROOM FLAT       ]                  |
|     Location of the house   [KAITA RD. MINNA      ]                  |
|     Contract sum (Naira)    [    1,233,232.00]                       |
|     Date started            [01/02/1999]                            |
|     Expected date of completion  [12/01/2001]                       |
|                                                                      |
+----------------------------------------------------------------------+
```

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```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

  VIEWING CONTRACTUAL PROJECTS ACTIVITIES


PROJECT TYPE    [F]
PROJECT ID.NO   [    4]
                                          PAGE-1
Land Acquisition         [   5]
Survey Sketches          [   2]
Architectural Design     [   3]
Civil/Building Design    [   4]
Electrical Design        [   3]
Bill of Quantity         [   2]
Estate                   [   1]
```

Strike any key to proceed

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

  VIEWING CONTRACTUAL PROJECTS ACTIVITIES


PROJECT TYPE    [F]
PROJECT ID.NO   [    4]
                                          PAGE-2
Project Description   [RENOVATION OF HOSPITAL        ]
Contract No:          [34-9/99    ]
House type            [OFFICES              ]
Location of the house [MINNA                ]
Contract sum (Naira)  [       877,837.50]
Date started          [12/11/1999]
Expected date of completion  [30/10/2000]
```

Strike any key to proceed

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

      VIEWING ABANDONED PROJECTS DATA


PROJECT TYPE    [E]
PROJECT ID.NO  [     7]
                                          ──────PAGE-1──────
Project Description    [RENOVATION OF HOUSE            ]
Contract No:           [3/0233      ]
House type             [                    ]
Location of the house  [TYPE B QTRS        ]
Contract sum (Naira)   [        46,743.00]
Date started           [  /  /    ]
Expected date of completion  [  /  /     ]
```

Strike any key to proceed

```
NIGER STATE HOUSING CORPORATION, MINNA
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM

      VIEWING ABANDONED PROJECTS DATA

                                          ──────PAGE-2──────
Site clearance        [   0]
Setting out           [   0]
Excavation            [   0]
Substructure          [   0]
Superstructure        [   0]
Roofing               [   0]
Doors and Windows     [   0]
Conduit Wiring        [   0]
Plastering            [   0]
Painting              [   0]
Hand over             [   0]
```

Strike any key to proceed or   [Q]=quit. [ ]

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NIGER STATE HOUSING CORPORATION, MINNA
NIGER STATE
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM
CONTRACTUAL PROJECTS REPORT

02/03/01   PAGE 1

D	PROJECT DESCRIPTION	LOCATION	CONT.SUM
/99	CONSTRUCTION OF ONE FLAT	NASKO RD, MINNA	4885493.00
99	CONSTRUCTION OFBUNGALOW	NO.2 AKE RD. KADUNA	837494.81
4	GENERAL RENOVATION	13, AJAY CRESCENT	498848.00
9	RENOVATION OF HOSPITAL	MINNA	877837.50
	REHABILITATION OF OFFICE	GOVT HOUSE, MINNA	567775.00
	CONSTRUCTION OF GARDEN	GOVT. HOUSE, MINNA	345322.00
9	CONSTRUCTION OF A 2 B/R FLAT	NO.3 KAITA RD. MINNA	4857753.00
33	RENOVATION OF HOSPITAL	GEN. HOSPITAL,MINNA	1029302.00

T O T A L   13899825.31

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NIGER STATE HOUSING CORPORATION, MINNA
NIGER STATE
COMPUTERISED PROJECT ACTIVITIES CONTROL SYSTEM
CONSULTANCY PROJECTS REPORT

O	PROJECT DESCRIPTION	LOCATION	CONT.SUM(
99	CONSTRUCTION OF NEW BUILDING	BOSSO ESTATE	763899.00
3	EXTENSION OF CHARLET	PRESIDENTIAL LODGE	665433.00
	GENERA RENOVATION OF HOUSE	COMMISSIONERS' QTRS	57744.00
	OFFICE EXTENSION	GEN.HOSP. MINNA	3874334.00
	CONSTRUCTION OF NEW EXTENSION	BOSSO ESTATE	74877743.00

| | | T O T A L | 80239153.00 |

9

: 02/03/01   PAGE 1

NO   PROJECT DESCRIPTION   LOCATION   CONT.SUM
----
3   RENOVATION OF HOUSE   TYPE B QTRS   46743.00
5   CONSTRUCTION OF 2BEDROOM   ODUOYE ESTATE   478211.89
4/98   CONSTRUCTION OF HOUSE   KAITA RD. MINNA   1233232.00

                                        T O T A L   1758186.89

10

```
***************************************************************
****
***** PROGRAM :    COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM
***** CASE STUDY: NIGER STATE HOUSING CORPORATION
***** ADDRESS :    MINNA, NIGER STATE
***** BY       :    ALHASSAN MUSA DANLADI
***** REG.NO. :    PGD/MCS/98/99/803
***** DEPT.    :    MATHEMATICS/COMPUTER SCIENCE
***** DATE     :    MARCH, 20001
***************************************************************
****

***** PROJECT ACTIVITIES MAIN PROGRAM
* SET UP ENVIRONMENT
SET TALK OFF
SET ECHO OFF
SET STAT OFF
SET INTE OFF
SET DELI ON
SET DELI TO "[]"
*SET *
PUBLIC I

DO WHILE .T.
CLEAR
@ 2,9 TO 19,65 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                    NIGER STATE"
@ 7,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 8,10 TO 8,64
@ 10,24 SAY "[A]   CONTRACTUAL PROJECTS"
@ 12,24 SAY "[B]   CONSULTANCY PROJECTS"
@ 14,24 SAY "[C]   ABANDONED PROJECTS"
@ 16,24 SAY "[Q]   E X I T"
SET COLO TO RG+
@ 20,10 SAY "DEVELOPED BY:- ALHASSAN MUSA DANLADI
(PGD/MCS/98/99/803)"
SET COLO TO R+
@ 10,25 SAY "A"
@ 12,25 SAY "B"
@ 14,25 SAY "C"
@ 16,25 SAY "Q"
SET COLOR TO W+
@ 18,25 SAY "Enter your choice."
SET COLOR TO
I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "ABCQ"
   EXIT
ENDIF
```

```
      I=0
ENDDO
DO CASE
   CASE UPPER(CHR(I)) $ "A"
     DO CONTRMEN
   CASE UPPER(CHR(I)) $ "B"
     DO CONSLMEN
   CASE UPPER(CHR(I)) $ "C"
     DO ABANDMEN
   CASE UPPER(CHR(I)) $ "Q"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN



***** NEW ABANDONED PROJECTS MODULE ******
        SELECT 1
        USE PROJECT
        SELECT 2
        USE FRESHPRJ
        DO WHILE .T.
        CLEAR
        SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "     NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                    NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "           ADDING ABANDONED PROJECTS"

        STORE SPACE(10) TO CNO
        STORE SPACE(15) TO CTYPE
        STORE 0 TO CSUM,PID
        STORE SPACE (1) TO PTYPE
@9,10 TO 9,74

@11,15 SAY "PROJECT ID.NO or [0]=QUIT " GET PID PICT
"99999"
READ
        IF PID = 0
               EXIT
          ENDIF
        LOCATE FOR PROJ_ID =   PID
        IF EOF()
           @22,1 SAY ""
           ? CHR(7)
   WAIT+"              PROJECT ID. DOES NOT EXIST !
PRESS ANY KEY."
           @23,15 SAY SPACE(50)
           LOOP
```

```
          ENDIF

       SELECT 1
       @12,10 TO 12,74
                @12,58 SAY "PAGE-1"
          @13,10 CLEA TO 19,74
          @13,15 SAY "Project Description    " GET P_DESC
PICT "@!"
          @14,15 SAY "Contract No:           " GET CONT_NO
PICT "@!"
          @15,15 SAY "House type             " GET HT PICT
"@!"
          @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
          @17,15 SAY "Contract sum (Naira)   " GET CON_SUM
PICT "9,999,999,999.99"
          @18,15 SAY "Date started           " GET DTS PICT
"99/99/9999"
          @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
            CLEAR GETS
          K=SPACE(1)
@23,15 SAY "  [A]bandon this project  or [Q]uit " GET K
PICT "!"
          READ

          IF K = "Q"
             EXIT
          ENDIF
          IF K="A"
                REPL STATUS WITH "0"
          ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN


***** ABANDONED PROJECTS MENU ******

*****

DO WHILE .T.
CLEAR
@ 2,9 TO 19,65 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                     NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "            ABANDONED PROJECTS MENU "

@ 8,10 TO 8,64
@ 09,24 SAY "[A]  ABANDON A PROJECT"
@ 11,24 SAY "[B]  UPDATE/RESTORE PROJECT"
```

```
@ 13,24 SAY "[C]   VIEW PROJECTS"
@ 15,24 SAY "[D]   PRINT REPORT"
@ 17,24 SAY "[Q]   RETURN TO MAINMENU"

SET COLO TO W+
@ 09,25 SAY "A"
@ 11,25 SAY "B"
@ 13,25 SAY "C"
@ 15,25 SAY "D"
@ 17,25 SAY "Q"

@ 20,24 SAY "Enter your choice."
SET COLOR TO

I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "ABCDQ"
   EXIT
ENDIF
I=0
ENDDO

DO CASE
   CASE UPPER(CHR(I)) $ "A"
      DO ABANDADD
   CASE UPPER(CHR(I)) $ "B"
     DO ABANDRES
   CASE UPPER(CHR(I)) $ "C"
     DO ABANDVIW
   CASE UPPER(CHR(I)) $ "D"
     DO ABANDREP
   CASE UPPER(CHR(I)) $ "Q"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN

********** ABANDONED PROJECTS REPORT MODULE ********

        CLEAR
        STORE 0 TO TOTSUM,L,P
        STORE 60 TO L
        SELE 1
        USE PROJECT
        SELE 2
        USE FRESHPRJ
        SET DEVICE TO PRINT
        SELE 1
                SET FILT TO STATUS = "0"
        GO TOP
```

```
DO WHILE .NOT. EOF()
         IF L > 22
         P=P+1
@ 1,15 SAY "       NIGER STATE HOUSING CORPORATION, MINNA"
@ 2,15 SAY "                        NIGER STATE"
@ 3,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 4,15 SAY "              ABANDONED PROJECTS REPORT"
         @5,01 SAY "DATE :"
         @5,08 SAY DATE()
@5,70 SAY "PAGE "+LTRIM(STR(P))
@6,01 SAY REPL('-',79)
@7,01 SAY "CONT.NO"
@7,12 SAY "PROJECT DESCRIPTION"
*@7,25 SAY "HOUSE TYPE"
@7,47 SAY "LOCATION"
@7,69 SAY "CONT.SUM"
@8,01 SAY REPL('-',79)
ENDIF

         @L,01 SAY CONT_NO
         @L,12 SAY P_DESC
         @L,47 SAY LOCATION
         @L,66 SAY CON_SUM
                 L=L+1
                 TOTSUM=TOTSUM+CON_SUM
         SKIP
ENDDO
         @L,1 SAY REPL('-',79)
         @L+1,47 SAY "T O T A L"
         @L+1,65 SAY TOTSUM
         SET FILT TO
         CLOSE DATABASE
         EJECT
SET DEVICE TO SCREEN
RETURN


***** ABANDONED PROJECTS RESTORING/COMPLETION MODULE ******
         SELECT 1
         USE PROJECT
         SELECT 2
         USE FRESHPRJ
         DO WHILE .T.
         CLEAR
         SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                     NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "     UPDATING/RESTORING ABANDONED PROJECTS"
```

5

```
        STORE SPACE(10) TO CNO
        STORE SPACE(15) TO CTYPE
        STORE 0 TO CSUM,PID
        STORE SPACE (1) TO PTYPE
@9,10 TO 9,74
@11,15 SAY "PROJECT ID.NO [0]=QUIT " GET PID PICT "99999"
READ

        IF PID = 0
          EXIT
        ENDIF
        LOCATE FOR PROJ_ID =  PID
        IF EOF()
          @22,1 SAY ""
          ? CHR(7)
   WAIT+"                 PROJECT ID. DOES NOT EXIST !
PRESS ANY KEY."
          @23,15 SAY SPACE(50)
          LOOP
        ENDIF
        IF STATUS <> "0"
          @22,1 SAY ""
            WAIT+"                 NOT AN ABANDONED
PROJECT, PRESS ANY KEY."
          @23,15 SAY SPACE(50)
            LOOP
         ENDIF

        @12,10 TO 12,74
              @12,58 SAY "PAGE-1"
         @13,10 CLEA TO 19,74
        @13,15 SAY "Project Description    " GET P_DESC
PICT "@!"
        @14,15 SAY "Contract No:          " GET CONT_NO
PICT "@!"
        @15,15 SAY "House type            " GET HT PICT
"@!"
        @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
        @17,15 SAY "Contract sum (Naira)  " GET CON_SUM
PICT "9,999,999,999.99"
        @18,15 SAY "Date started          " GET DTS PICT
"99/99/9999"
        @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
        CLEA GETS

        K=SPACE(1)
@23,15 SAY "RESTORE AS   [1=Contractual,  2=Consultancy or
[Q]uit " GET K PICT "!"
        READ

        IF K = "Q"
```

```
                EXIT
            ENDIF
            IF K="1"
                    REPL STATUS WITH "1"
             ENDIF
              IF K="2"
                    REPL STATUS WITH "2"
             ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN


***** VIEW ABANDONED PROJECTS DATA *********

***** ABANDONED PROJECTS MODULE ******
          SELECT 1
          USE PROJECT
          SELECT 2
          USE FRESHPRJ
            SELE 1
                  SET FILT TO STATUS="0"
          GO TOP             .
          DO WHILE .NOT. EOF()
          CLEAR
          SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                    NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL  .
SYSTEM"
@ 7,15 SAY "        VIEWING ABANDONED PROJECTS DATA"

          STORE SPACE(10) TO CNO
          STORE SPACE(15) TO CTYPE
          STORE 0 TO CSUM,PID
          STORE SPACE (1) TO PTYPE
@9,10 TO 9,74
*O WHILE .T.
@10,15 SAY "PROJECT TYPE  " GET TYPE PICT "!"
@11,15 SAY "PROJECT ID.NO " GET PROJ_ID PICT "99999"
CLEA GETS
 PTYPE = TYPE
 IF PTYPE='F'
          PID=PROJ_ID
         SELECT 2
            LOCA FOR PROJ_ID = PID
          @12,10 TO 12,74
          @12,58 SAY "PAGE-1"
          @13,15 SAY "Land Acquisition      " GET LAND PICT
"999"
```

```
            @14,15 SAY "Survey Sketches          " GET SURVEY
PICT "999"
            @15,15 SAY "Architectural Design  " GET ARC PICT
"999"
            @16,15 SAY "Civil/Building Design " GET CIVIL PICT
"999"
            @17,15 SAY "Electrical Design     " GET ELEC PICT
"999"
            @18,15 SAY "Bill of Quantity      " GET BOQ PICT
"999"
            @19,15 SAY "Estate                " GET ESTATE
PICT "999"
          CLEAR GETS
          @22,0 SAY ""
          WAIT + "            Strike any key to proceed"
            @23,10 SAY SPACE(60)
     ENDIF

          SELECT 1
          @12,10 TO 12,74
          IF PTYPE='F'
                  @12,58 SAY "PAGE-2"
          ELSE
                  @12,58 SAY "PAGE-1"
          ENDIF
            @13,10 CLEA TO 19,74
            @13,15 SAY "Project Description    " GET P_DESC
PICT "@!"
            @14,15 SAY "Contract No:          " GET CONT_NO
PICT "@!"
            @15,15 SAY "House type            " GET HT PICT
"@!"
            @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
            @17,15 SAY "Contract sum (Naira)  " GET CON_SUM
PICT "9,999,999,999.99"
            @18,15 SAY "Date started          " GET DTS PICT
"99/99/9999"
            @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
            CLEAR GETS
            @22,0 SAY ""
            WAIT + "            Strike any key to proceed"
              @23,10 SAY SPACE(60)
            IF PTYPE='F'
                    @09,58 SAY "PAGE-3"
            ELSE
                    @09,58 SAY "PAGE-2"
            ENDIF
              @10,10 CLEA TO 19,74
              @10,15 SAY "Site clearance        " GET S_C PICT
"999"
```

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```
        @11,15 SAY "Setting out           " GET S_O PICT
"999"
        @12,15 SAY "Excavation            " GET EXC PICT
"999"
        @13,15 SAY "Substructure          " GET SUB_S PICT
"999"
        @14,15 SAY "Superstructure        " GET SUP_S PICT
"999"
        @15,15 SAY "Roofing               " GET RF PICT
"999"
        @16,15 SAY "Doors and Windows     " GET DW PICT
"999"
        @17,15 SAY "Conduit Wiring        " GET CW PICT
"999"
        @18,15 SAY "Plastering            " GET PB PICT
"999"
        @19,15 SAY "Painting              " GET PT PICT
"999"
        @20,15 SAY "Hand over             " GET HO PICT
"999"
        CLEAR GETS

     K=SPACE(1)
@23,15 SAY "      Strike any key to proceed or  [Q]=quit."
GET K PICT "!"
        READ

        IF K = "Q"
           EXIT
        ENDIF
     SELE 1
   SKIP
ENDDO
CLEAR
SET FILT TO
CLOSE DATABASE
RETURN



***** NEW CONSULTANCY PROJECTS MODULE ******

        SELECT 1
        USE PROJECT
        SELECT 2
        USE FRESHPRJ
        DO WHILE .T.
        CLEAR
        SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                    NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
```

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```
@ 7,15 SAY "          NEW CONSULTANCY PROJECTS DATA"

        STORE SPACE(10) TO CNO
        STORE SPACE(15) TO CTYPE
        STORE 0 TO CSUM,PID
        STORE SPACE (1) TO PTYPE
@9,10 TO 9,74
DO WHILE .T.
@10,12 SAY "PROJECT TYPE [E=EXTENSION; F=FRESH;
R=RENOVATION Or X=Exit " GET PTYPE PICT "!"
READ
IF PTYPE='X' .OR. PTYPE='E' .OR. PTYPE='F' .OR. PTYPE='R'
   EXIT
ENDIF
ENDDO
        IF PTYPE  =   'X'
           EXIT
        ENDIF
        IF PTYPE='F'
           CTYPE='FRESH'
        ENDIF
        IF PTYPE='E'
           CTYPE='EXTENSION'
        ENDIF
        IF PTYPE='R'
           CTYPE='RENOVATION'
        ENDIF
@11,15 SAY "PROJECT ID.NO " GET PID PICT "99999"
READ


        LOCATE FOR PROJ_ID =  PID
        IF .NOT. EOF()
           @22,1 SAY ""
           ? CHR(7)
   WAIT+"              PROJECT ID. NO ALREADY EXISTS!
PRESS ANY KEY."
           @23,15 SAY SPACE(50)
           LOOP
        ENDIF
 IF PTYPE='F'

        SELECT 2
         APPEND BLANK
         @12,10 TO 12,74
         @12,58 SAY "PAGE-1"
         @13,15 SAY "Land Acquisition       " GET LAND
PICT"999"
         @14,15 SAY "Survey Sketches        " GET SURVEY
PICT "999"
         @15,15 SAY "Architectural Design   " GET ARC PICT
"999"
```

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```
            @16,15 SAY "Civil/Building Design " GET CIVIL PICT
"999"
            @17,15 SAY "Electrical Design    " GET ELEC PICT
"999"
            @18,15 SAY "Bill of Quantity     " GET BOQ PICT
"999"
            @19,15 SAY "Estate               " GET ESTATE
PICT "999"
            READ
            REPL PROJ_ID WITH PID
     ENDIF

          SELECT 1
          @12,10 TO 12,74
          IF PTYPE='F'
                  @12,58 SAY "PAGE-2"
          ELSE
                  @12,58 SAY "PAGE-1"
          ENDIF
            @13,10 CLEA TO 19,74
      APPEND BLANK
          @13,15 SAY "Project Description   " GET P_DESC
PICT "@!"
          @14,15 SAY "Contract No:          " GET CONT_NO
PICT "@!"
          @15,15 SAY "House type            " GET HT PICT
"@!"
          @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
          @17,15 SAY "Contract sum (Naira)  " GET CON_SUM
PICT "9,999,999,999.99"
          @18,15 SAY "Date started          " GET DTS PICT
"99/99/9999"
          @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
          READ
          REPL PROJ_ID WITH PID, TYPE WITH CTYPE, STATUS
WITH "2"

          IF PTYPE='F'
                  @09,58 SAY "PAGE-3"
          ELSE
                  @09,58 SAY "PAGE-2"
          ENDIF
            @10,10 CLEA TO 19,74
          @10,15 SAY "Site clearance        " GET S_C PICT
"999"
          @11,15 SAY "Setting out           " GET S_O PICT
"999"
          @12,15 SAY "Excavation            " GET EXC PICT
"999"
          @13,15 SAY "Substructure          " GET SUB_S PICT
"999"
```

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```
          @14,15 SAY "Superstructure        " GET SUP_S PICT
"999"
          @15,15 SAY "Roofing               " GET RF PICT
"999"
          @16,15 SAY "Doors and Windows     " GET DW PICT
"999"
          @17,15 SAY "Conduit Wiring        " GET CW PICT
"999"
          @18,15 SAY "Plastering            " GET PB PICT
"999"
          @19,15 SAY "Painting              " GET PT PICT
"999"
          @20,15 SAY "Hand over             " GET HO PICT
"999"
          READ

       K=SPACE(1)
@23,15 SAY "      [M]ore projects       [Q]uit " GET K PICT
"!"
          READ

          IF K = "Q"
             EXIT
          ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN


***** CONSULTANCY PROJECTS MENU ******

DO WHILE .T.
CLEAR
@ 2,9 TO 19,65 DOUBLE
@ 4,15 SAY "     NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                    NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "          CONSULTANCY PROJECTS MENU "

@ 8,10 TO 8,64
@ 09,24 SAY "[A]   ADD NEW PROJECTS"
@ 11,24 SAY "[B]   UPDATE ON-GOING PROJECTS"
@ 13,24 SAY "[C]   VIEW PROJECTS"
@ 15,24 SAY "[D]   PRINT REPORT"
@ 17,24 SAY "[Q]   E X I T"

SET COLO TO W+
@ 09,25 SAY "A"
@ 11,25 SAY "B"
@ 13,25 SAY "C"
@ 15,25 SAY "D"
@ 17,25 SAY "Q"
```

```
@ 20,24 SAY "Enter your choice."
SET COLOR TO

I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "ABCDQ"
   EXIT
ENDIF
I=0
ENDDO

DO CASE
   CASE UPPER(CHR(I)) $ "A"
     DO CONSLADD
   CASE UPPER(CHR(I)) $ "B"
     DO CONSLUPD
   CASE UPPER(CHR(I)) $ "C"
     DO CONSLVIW
   CASE UPPER(CHR(I)) $ "D"
     DO CONSREPT
   CASE UPPER(CHR(I)) $ "Q"
     EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN



***** CONSULTANCY PROJECTS ACTIVITY UPDATE MODULE ******

*****
        SELECT 1
        USE PROJECT
        SELECT 2
        USE FRESHPRJ
        DO WHILE .T.
        CLEAR
        SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "     NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                 NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "    UPDATING CONSULTANCY PROJECTS ACTIVITIES"

        STORE SPACE(10) TO CNO
        STORE SPACE(15) TO CTYPE
        STORE 0 TO CSUM,PID
        STORE SPACE (1) TO PTYPE
@9,10 TO 9,74
```

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```
DO WHILE .T.
@10,12 SAY "PROJECT TYPE [E=EXTENSION; F=FRESH;
R=RENOVATION Or X=Exit " GET PTYPE PICT "!"
READ
IF PTYPE='X' .OR. PTYPE='E' .OR. PTYPE='F' .OR. PTYPE='R'
   EXIT
ENDIF
ENDDO
         IF PTYPE  =   'X'
            EXIT
         ENDIF
         IF PTYPE='F'
            CTYPE='FRESH'
         ENDIF
         IF PTYPE='E'
            CTYPE='EXTENSION'
         ENDIF
         IF PTYPE='R'
            CTYPE='RENOVATION'
         ENDIF
@11,15 SAY "PROJECT ID.NO " GET PID PICT "99999"
READ


         LOCATE FOR PROJ_ID =  PID
         IF EOF()
            @22,1 SAY ""
            ? CHR(7)
  WAIT+"                   PROJECT ID. DOES NOT EXIST !
PRESS ANY KEY."
            @23,15 SAY SPACE(50)
            LOOP
         ENDIF
         IF STATUS <> "2"
            @22,1 SAY ""
               WAIT+"                  NOT A CONSULTANCY
PROJECT, PRESS ANY KEY."
            @23,15 SAY SPACE(50)
              LOOP
          ENDIF

 IF PTYPE='F'
         SELECT 2
            LOCA FOR PROJ_ID = PID
         @12,10 TO 12,74
         @12,58 SAY "PAGE-1"
         @13,15 SAY "Land Acquisition      " GET LAND
PICT"999"
         @14,15 SAY "Survey Sketches       " GET SURVEY
PICT "999"
         @15,15 SAY "Architectural Design  " GET ARC PICT
"999"
```

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```
          @16,15 SAY "Civil/Building Design " GET CIVIL PICT
"999"
          @17,15 SAY "Electrical Design     " GET ELEC PICT
"999"
          @18,15 SAY "Bill of Quantity      " GET BOQ PICT
"999"
          @19,15 SAY "Estate                " GET ESTATE
PICT "999"
          READ
    ENDIF

        SELECT 1
        @12,10 TO 12,74
        IF PTYPE='F'
                @12,58 SAY "PAGE-2"
        ELSE
                @12,58 SAY "PAGE-1"
        ENDIF
          @13,10 CLEA TO 19,74
          @13,15 SAY "Project Description   " GET P_DESC
PICT "@!"
          @14,15 SAY "Contract No:          " GET CONT_NO
PICT "@!"
          @15,15 SAY "House type            " GET HT PICT
"@!"
          @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
          @17,15 SAY "Contract sum (Naira)  " GET CON_SUM
PICT "9,999,999,999.99"
          @18,15 SAY "Date started          " GET DTS PICT
"99/99/9999"
          @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
          READ
          REPL TYPE WITH CTYPE

        IF PTYPE='F'
                @09,58 SAY "PAGE-3"
        ELSE
                @09,58 SAY "PAGE-2"
        ENDIF
          @10,10 CLEA TO 19,74
          @10,15 SAY "Site clearance        " GET S_C PICT
"999"
          @11,15 SAY "Setting out           " GET S_O PICT
"999"
          @12,15 SAY "Excavation            " GET EXC PICT
"999"
          @13,15 SAY "Substructure          " GET SUB_S PICT
"999"
          @14,15 SAY "Superstructure        " GET SUP_S PICT
"999"
```

```
        @15,15 SAY "Roofing                  " GET RF PICT
"999"
        @16,15 SAY "Doors and Windows        " GET DW PICT
"999"
        @17,15 SAY "Conduit Wiring           " GET CW PICT
"999"
        @18,15 SAY "Plastering               " GET PB PICT
"999"
        @19,15 SAY "Painting                 " GET PT PICT
"999"
        @20,15 SAY "Hand over                " GET HO PICT
"999"
        READ

     K=SPACE(1)
@23,15 SAY "      [M]ore projects     [Q]uit " GET K PICT
"!"
        READ

        IF K = "Q"
           EXIT
        ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN




********** CONSULTANCY PROJECTS REPORT MODULE ********

        .CLEAR
        STORE 0 TO TOTSUM,L,P
        STORE 60 TO L
        SELE 1
        USE PROJECT
        SELE 2
        USE FRESHPRJ
        SET DEVICE TO PRINT
        SELE 1
             SET FILT TO STATUS = "2"
        GO TOP
DO WHILE .NOT. EOF()
        IF L > 22
        P=P+1
@ 1,15 SAY "     NIGER STATE HOUSING CORPORATION, MINNA"
@ 2,15 SAY "              NIGER STATE"
@ 3,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 4,15 SAY "        CONSULTANCY PROJECTS REPORT"
        @5,01 SAY "DATE :"
        @5,08 SAY DATE()
@5,70 SAY "PAGE "+LTRIM(STR(P))
```

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```
@6,01 SAY REPL('-',79)
@7,01 SAY "CONT.NO"
@7,12 SAY "PROJECT DESCRIPTION"
*@7,25 SAY "HOUSE TYPE"
@7,47 SAY "LOCATION"
@7,69 SAY "CONT.SUM(N)"
@8,01 SAY REPL('-',79)
L=9
ENDIF

        @L,01 SAY CONT_NO
        @L,12 SAY P_DESC
        *@L,32 SAY HT
        @L,47 SAY LOCATION
        @L,66 SAY CON_SUM
                L=L+1
                TOTSUM=TOTSUM+CON_SUM
        SKIP
ENDDO
        @L,1 SAY REPL('-',79)
        @L+1,47 SAY "T O T A L"
        @L+1,65 SAY TOTSUM
        SET FILT TO
        CLOSE DATABASE
        EJECT
SET DEVICE TO SCREEN
RETURN



***** NEW CONTRACTUAL PROJECTS MODULE ******

*****
        SELECT 1
        USE PROJECT
        SELECT 2
        USE FRESHPRJ
        DO WHILE .T.
        CLEAR
        SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "     NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "               NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "        NEW CONTRACTUAL PROJECTS DATA"

        STORE SPACE(10) TO CNO
        STORE SPACE(15) TO CTYPE
        STORE 0 TO CSUM,PID
        STORE SPACE (1) TO PTYPE
@9,10 TO 9,74
DO WHILE .T.
```

```
@10,12 SAY "PROJECT TYPE [E=EXTENSION; F=FRESH;
R=RENOVATION Or X=Exit " GET PTYPE PICT "!"
READ
IF PTYPE='X' .OR. PTYPE='E' .OR. PTYPE='F' .OR. PTYPE='R'
   EXIT
ENDIF
ENDDO
        IF PTYPE  =  'X'
           EXIT
        ENDIF
        IF PTYPE='F'
           CTYPE='FRESH'
        ENDIF
        IF PTYPE='E'
           CTYPE='EXTENSION'
        ENDIF
        IF PTYPE='R'
           CTYPE='RENOVATION'
        ENDIF
@11,15 SAY "PROJECT ID.NO " GET PID PICT "99999"
READ


        LOCATE FOR PROJ_ID =  PID
        IF .NOT. EOF()
           @22,1 SAY ""
           ? CHR(7)
   WAIT+"                      PROJECT ID. NO ALREADY EXISTS!
PRESS ANY KEY."
           @23,15 SAY SPACE(50)
           LOOP
        ENDIF
 IF PTYPE='F'

        SELECT 2
         APPEND BLANK
         @12,10 TO 12,74
         @12,58 SAY "PAGE-1"
         @13,15 SAY "Land Acquisition      " GET LAND
PICT"999"
         @14,15 SAY "Survey Sketches       " GET SURVEY
PICT "999"
         @15,15 SAY "Architectural Design  " GET ARC PICT
"999"
         @16,15 SAY "Civil/Building Design " GET CIVIL PICT
"999"
         @17,15 SAY "Electrical Design     " GET ELEC PICT
"999"
         @18,15 SAY "Bill of Quantity      " GET BOQ PICT
"999"
         @19,15 SAY "Estate                " GET ESTATE
PICT "999"
         READ
```

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```
                REPL PROJ_ID WITH PID
     ENDIF

          SELECT 1
          @12,10 TO 12,74
          IF PTYPE='F'
                   @12,58 SAY "PAGE-2"
          ELSE
                   @12,58 SAY "PAGE-1"
          ENDIF
            @13,10 CLEA TO 19,74
      APPEND BLANK
          @13,15 SAY "Project Description    " GET P_DESC
PICT "@!"
          @14,15 SAY "Contract No:           " GET CONT_NO
PICT "@!"
          @15,15 SAY "House type             " GET HT PICT
"@!"
          @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
          @17,15 SAY "Contract sum (Naira)   " GET CON_SUM
PICT "9,999,999,999.99"
          @18,15 SAY "Date started           " GET DTS PICT
"99/99/9999"
          @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
          READ
          REPL PROJ_ID WITH PID, TYPE WITH CTYPE, STATUS
WITH "1"

          IF PTYPE='F'
                   @09,58 SAY "PAGE-3"
          ELSE
                   @09,58 SAY "PAGE-2"
          ENDIF
            @10,10 CLEA TO 19,74
          @10,15 SAY "Site clearance         " GET S_C PICT
"999"
          @11,15 SAY "Setting out            " GET S_O PICT
"999"
          @12,15 SAY "Excavation             " GET EXC PICT
"999"
          @13,15 SAY "Substructure           " GET SUB_S PICT
"999"
          @14,15 SAY "Superstructure         " GET SUP_S PICT
"999"
          @15,15 SAY "Roofing                " GET RF PICT
"999"
          @16,15 SAY "Doors and Windows      " GET DW PICT
"999"
          @17,15 SAY "Conduit Wiring         " GET CW PICT
"999"
```

```
           @18,15 SAY "Plastering             " GET PB PICT
"999"
           @19,15 SAY "Painting              " GET PT PICT
"999"
           @20,15 SAY "Hand over             " GET HO PICT
"999"
           READ

        K=SPACE(1)
@23,15 SAY "      [M]ore projects      [Q]uit " GET K PICT
"!"
           READ

           IF K = "Q"
              EXIT
           ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN


***** CONTRACTUAL PROJECTS ACTIVITY UPDATE MODULE ******

           SELECT 1
           USE PROJECT
           SELECT 2
           USE FRESHPRJ
           DO WHILE .T.
           CLEAR
           SELECT 1
@ 2,9 TO 22,75 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "               NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "    UPDATING CONTRACTUAL PROJECTS ACTIVITIES"

           STORE SPACE(10) TO CNO
           STORE SPACE(15) TO CTYPE
           STORE 0 TO CSUM,PID
           STORE SPACE (1) TO PTYPE
@9,10 TO 9,74
DO WHILE .T.
@10,12 SAY "PROJECT TYPE [E=EXTENSION; F=FRESH;
R=RENOVATION Or X=Exit " GET PTYPE PICT "!"
READ
IF PTYPE='X' .OR. PTYPE='E' .OR. PTYPE='F' .OR. PTYPE='R'
   EXIT
ENDIF
ENDDO
           IF PTYPE = 'X'
              EXIT
```

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```
        ENDIF
        IF PTYPE='F'
            CTYPE='FRESH'
        ENDIF
        IF PTYPE='E'
            CTYPE='EXTENSION'
        ENDIF
        IF PTYPE='R'
            CTYPE='RENOVATION'
        ENDIF
@11,15 SAY "PROJECT ID.NO " GET PID PICT "99999"
READ


        LOCATE FOR PROJ_ID =  PID
        IF EOF()
            @22,1 SAY ""
            ? CHR(7)
   WAIT+"                     PROJECT ID. DOES NOT EXIST !
PRESS ANY KEY."
            @23,15 SAY SPACE(50)
            LOOP
        ENDIF
        IF STATUS <> "1"
            @22,1 SAY ""
              WAIT+"                    NOT A CONTRACTUAL
PROJECT, PRESS ANY KEY."
            @23,15 SAY SPACE(50)
              LOOP
          ENDIF

 IF PTYPE='F'
        SELECT 2
           LOCA FOR PROJ_ID = PID
        @12,10 TO 12,74
        @12,58 SAY "PAGE-1"
        @13,15 SAY "Land Acquisition      " GET LAND
PICT"999"
        @14,15 SAY "Survey Sketches       " GET SURVEY
PICT "999"
        @15,15 SAY "Architectural Design  " GET ARC PICT
"999"
        @16,15 SAY "Civil/Building Design " GET CIVIL PICT
"999"
        @17,15 SAY "Electrical Design     " GET ELEC PICT
"999"
        @18,15 SAY "Bill of Quantity      " GET BOQ PICT
"999"
        @19,15 SAY "Estate                " GET ESTATE
PICT "999"
        READ
   ENDIF
```

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```
          SELECT 1
          @12,10 TO 12,74
          IF PTYPE='F'
                    @12,58 SAY "PAGE-2"
          ELSE
                    @12,58 SAY "PAGE-1"
          ENDIF
            @13,10 CLEA TO 19,74
            @13,15 SAY "Project Description    " GET P_DESC
PICT "@!"
            @14,15 SAY "Contract No:           " GET CONT_NO
PICT "@!"
            @15,15 SAY "House type             " GET HT PICT
"@!"
            @16,15 SAY "Location of the house " GET LOCATION
PICT "@!"
            @17,15 SAY "Contract sum (Naira)   " GET CON_SUM
PICT "9,999,999,999.99"
            @18,15 SAY "Date started           " GET DTS PICT
"99/99/9999"
            @19,15 SAY "Expected date of completion "GET DTC
PICT "99/99/9999"
          READ
          REPL TYPE WITH CTYPE

          IF PTYPE='F'
                    @09,58 SAY "PAGE-3"
          ELSE
                    @09,58 SAY "PAGE-2"
          ENDIF
            @10,10 CLEA TO 19,74
            @10,15 SAY "Site clearance         " GET S_C PICT
"999"
            @11,15 SAY "Setting out            " GET S_O PICT
"999"
            @12,15 SAY "Excavation             " GET EXC PICT
"999"
            @13,15 SAY "Substructure           " GET SUB_S PICT
"999"
            @14,15 SAY "Superstructure         " GET SUP_S PICT
"999"
            @15,15 SAY "Roofing                " GET RF PICT
"999"
            @16,15 SAY "Doors and Windows      " GET DW PICT
"999"
            @17,15 SAY "Conduit Wiring         " GET CW PICT
"999"
            @18,15 SAY "Plastering             " GET PB PICT
"999"
            @19,15 SAY "Painting               " GET PT PICT
"999"
            @20,15 SAY "Hand over              " GET HO PICT
"999"
```

22

```
            READ

        K=SPACE(1)
@23,15 SAY "        [M]ore projects        [Q]uit " GET K PICT
"!"
        READ

        IF K = "Q"
            EXIT
        ENDIF
ENDDO
CLEAR
CLOSE DATABASE
RETURN


**********   CONTRACTUAL PROJECTS REPORT MODULE ********

        CLEAR
        STORE 0 TO TOTSUM,L,P
        STORE 60 TO L
        SELE 1
        USE PROJECT
        SELE 2
        USE FRESHPRJ
        SET DEVICE TO PRINT
        SELE 1
                SET FILT TO STATUS = "1"
        GO TOP
DO WHILE .NOT. EOF()
        IF L > 22
        P=P+1
@ 1,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 2,15 SAY "                   NIGER STATE"
@ 3,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 4,15 SAY "             CONTRACTUAL PROJECTS REPORT"
        @5,01 SAY "DATE :"
        @5,08 SAY DATE()
@5,70 SAY "PAGE "+LTRIM(STR(P))
@6,01 SAY REPL('-',79)
@7,01 SAY "CONT.NO"
@7,12 SAY "PROJECT DESCRIPTION"
*@7,25 SAY "HOUSE TYPE"
@7,47 SAY "LOCATION"
@7,69 SAY "CONT.SUM"
@8,01 SAY REPL('-',79)
ENDIF

        @L,01 SAY CONT_NO
        @L,12 SAY P_DESC
        *@L,32 SAY HT
        @L,47 SAY LOCATION
```

```
          @L,66 SAY CON_SUM
                 L=L+1
                 TOTSUM=TOTSUM+CON_SUM
          SKIP
ENDDO
          @L,1 SAY REPL('-',79)
          @L+1,47 SAY "T O T A L"
          @L+1,65 SAY TOTSUM
          SET FILT TO
          CLOSE DATABASE
          EJECT
SET DEVICE TO SCREEN
RETURN


***** CONTRACTUAL PROJECTS MENU ******


*****


DO WHILE .T.
CLEAR
@ 2,9 TO 19,65 DOUBLE
@ 4,15 SAY "      NIGER STATE HOUSING CORPORATION, MINNA"
@ 5,15 SAY "                    NIGER STATE"
@ 5,15 SAY " COMPUTERISED PROJECT ACTIVITIES CONTROL
SYSTEM"
@ 7,15 SAY "           CONTRACTUAL PROJECTS MENU "

@ 8,10 TO 8,64
@ 09,24 SAY "[A]   ADD NEW PROJECTS"
@ 11,24 SAY "[B]   UPDATE ON-GOING PROJECTS"
@ 13,24 SAY "[C]   VIEW PROJECTS"
@ 15,24 SAY "[D]   PRINT REPORT"
@ 17,24 SAY "[Q]   E X I T"

SET COLO TO W+
@ 09,25 SAY "A"
@ 11,25 SAY "B"
@ 13,25 SAY "C"
@ 15,25 SAY "D"
@ 17,25 SAY "Q"

@ 20,24 SAY "Enter your choice."
SET COLOR TO

I=0
DO WHILE I=0
I=INKEY()
IF UPPER(CHR(I)) $ "ABCDQ"
   EXIT
ENDIF
I=0
ENDDO
```

```
DO CASE
   CASE UPPER(CHR(I)) $ "A"
      DO CONTRADD
   CASE UPPER(CHR(I)) $ "B"
      DO CONTRUPD
   CASE UPPER(CHR(I)) $ "C"
      DO CONTRVIW
   CASE UPPER(CHR(I)) $ "D"
      DO CONTREPT
   CASE UPPER(CHR(I)) $ "Q"
      EXIT
ENDCASE
ENDDO
CLEAR
CLEAR ALL
RETURN
```