COMPUTER APPROACH TO PERSONNEL MANAGEMENT INFORMATION SYSTEM IN A PUBLIC ORGANIZATION.

(A CASE STUDY OF NIGER IA EXPORT PROCESSING ZONES AUTHORITY (NEPZA), ABUJA).

BY

OBI –IBEKWE CHIKA
PGD/MCS/97/98/522

DEPARTMENT OF MATHEMATICS/ COMPUTER SCIENCE.
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SEPTEMBER, 2001

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

SEPTEMBER 2001

CERTIFICATION

This project work has been read and certified by the undersigned as meeting the requirements of the Department of Mathematics/ Computer science, Federal University of Technology Minna.

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DR. Y. AIYESIMI   DATE
PROJECT – SUPERVISOR

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DR. S.A. REJU   DATE
HEAD OF DEPARTMENT

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EXTERNAL EXAMINER   DATE

DEDICATION

This project work is dedicated to the Glory of the Lord, and my darling son- **CHINDERA.**

The little one has been part and parcel of the program. May the Lord bless you for me always.

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These benefits could be an area of special interest to the personnel department of any organisation. This is because the efficiency with which any organisation can perform will depend, to a large extent, upon how effectively its personnel can be managed and utilised. Effective personnel management requires the development of a process, which will aid the proper and required decision and policies to be formulated on the employees. The basis for proper formulation of these policies involves reliable, accurate and timely storage and retrieval of employee records.

In recognition of the above problems, and for prompt responses to requests, there is a need for the handling of information concerning members of this authority to be computerized not only to save cost but also to eliminate unnecessary bottlenecks associated with the present system.

1.1 OBJECTIVES OF THE STUDY

The main objectives of this study are to provide an in-depth analysis and the need for a computerised personnel management in Nigeria Export processing zones authority.

Specifically, its main objectives are as follows: -

(a) To study and analysis the activities of the personnel department of the organisation

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1.4 PERSONNEL RECORDS SECTION IN PERSPECTIVE

Personnel records section of any organization has a singular responsibility of furnishing the entire organization as well as outsiders with prompt, accurate and reliable information about any subject mater relating to the organization. It is also responsible for collecting; storing, retrieving and processing validated information concerning the said organization.

(i)   Respond to staff and non – staff (Government agents etc) needs effectively as possible.

(ii)   Give accurate and reliable information about any subject matter within the shorted time limit.

(iii)   Update records of staff promptly.

(iv)   Protect documents or information in staff records against unauthorized access.

(v)   Keep accurate documents of personnel and respond to changes associated with them.

1.5 THE BENEFITS OF THE NEW SYSTEM

The continued substitution of computer – based system for manual procedures has modern days become a worldwide affair. This is because it is relevant in all aspects of human endeavour. In addition to speedy retrieval of

information and security of data, computer operation allows for retrieval of readable data due to the accuracy of computers.

The special benefits that the Nigeria Export Processing Zones Authority will derive from the use of the newly designed system are as follows: -

1. It will reduce complication that might arise as a result of increase personnel records.

2. It would make for saving on clerical cost and stationery that would have been incurred to meet the rapid growth of the authority

3. It will enhance the efficient operation of the authority in order to achieve the desired objectives.

4. It will eradicate the loss of personnel information due to the obsolete equipment in storing data.

5. It would avoid data manipulation due to access to data, as data stored in computer are more secured than manual storage.

6. It will create speedy procedure for retrieving personnel information.

The Federal Government went further to set up an advisory committee, which comprises some of the country's distinguished citizens and representatives of public agencies and organised private sectors whose activities and services are bound to infringe on the functioning and generation of the EPZ.

The premier Export processing Zone at calabar has gulped about N4 billion and is about to be commissioned.

The authority responsible for the overall control and direction of the EPZ scheme is the Nigeria Export processing Zones Authority [NEPZA]. As at the time of this assignment, NEPZA has staff strength of about 110. A managing Director with four Departments-Company Secretariat, Development Services, Investor Services finance & Administration, manages it. All the departments are parallel. There are also three supporting units (Audit, planning and public Relations) reporting directly to the Managing Director. The zonal office at calabar is under the supervision of a Liaison Officer who also reports to the Managing Director.

2.1   PERSONNEL MANAGEMENT IN PERSPECTIVE

In any organisation, people are the most important resource among all the resources used in it. This is because they are needed to activate the other

that for personnel management to be effective, the manager has to enunciate a programme, which ensures the election and training of employees for the job that best suit their abilities and motivating them to exert their maximum efforts for the attainment of corporate objectives.

Different scholars have advanced various definitions of Personnel Management. For instance, Bench D. S. sees it as the activities of recruitment and employment, organisation development, wage and salary administration, health and safety (at work) benefits and service, union – management relations and personnel research.

Another scholar, Armstrong M. sees it as concerned with obtaining, organising and motivating the human resources required by the enterprise with the aim of developing an organisation climate and management style which will promote effective effort and co-operation and trust between all the people working in it, and with helping the enterprise to meet its legal obligations and its social responsibilities towards its employees with regard to the conditions of work and quality of life provided for them.

However, the Institute of personnel Management of Nigeria sees personnel Management as a responsibility of all those who manage people as well as being a description of the work of those who are employed as specialists. It is part of management, which is concerned with people at work

and with their relationships within an enterprise. It applies not only to industry and commerce, but to all fields of human endeavour.

From the above views, it could be seen that personnel Management is simple the management of people at work and covering all areas of employer-employee relationships. It aims to achieve both efficiency and justice neither of which can be pursued successfully without the other.

It seeks to provide fair terms and conditions of employment and work satisfaction for those employed.

The personnel Management functions can be described as follows:

i.) Setting general and specific management policy for employment relationships and establishing and maintaining a suitable organisation for leadership and co-operation.

ii.) Staffing and organisation funding, getting and holding prescribed types and numbers of workers.

iii.) Aiding the self-development of employees at all levels, providing opportunities for personnel development and growth as well as requisite skills and experience.

iv.) Developing and maintaining the motivation in work.

v.) Reviewing and auditing manpower and management in the organisation.

vi.)   Carrying out studies designed to explain employees' behaviours and thereby improve manpower management.

2.2   FEASIBILITY STUDY

After a problem has been defined and various approaches to the solution have been considered with a view to selecting the best. The next important and vital step is to conduct a feasibility study.

Feasibility study will among others enable one to generate important information on the following: -

(a) To ascertain why a computerized system is needed to replace the present system used in the Nigeria Export Processing Zones Authority.

(b) Identify and determine the scope of the new system.

(c) Specify data requirements.

(d) The study will also define and quantify the benefit feasible.

2.3   THE PRESENT SYSTEM

Like every other conventional system, the present filling system of staff is manually operated. In most cases, clerks are assigned to physically search and locate the cabinet storing all the files of personnel. The required files are located and the information needed retrieved. The clerk has to go through the file thoroughly before getting the required information. This in essence is time-consuming.

Data Retrieval: - The manual process in use is rather very cumbersome when information is to be retrieved. This could be seen in the attitude of those to search for the required documents or information who might have been exhausted and confused since locating the particular item in question might take him hours or even days. At times when required file is seen, the relevant document needed might not be in it again.

Data meting out: - In view of the way in which data is stored and retrieved, this aspect could be every tedious. Most times documents produced manually are subject to series of errors and corrections, which need to be reproduced several times before final acceptance. Documents produced in most cases are often sub-standard.

Records viewing: - The procedure is similar to data retrieving. The necessary files containing the documents are searched for, retrieved and the records viewed. This process takes a lot of time.

Record Updating and Deletion: - For every procedure to be achieved the files containing the necessary documents have to be located and the documents retrieved before the addition or deletion is carried out. The repetitive nature, and the promptness expected from these processes make manual records keeping inefficient, outdated, slow and very expensive.

2.4   THE COMPUTERIZED SYSTEM

In enhancing operational efficiency and effectiveness of the present manual system with a view to satisfy the growing need to the organization and to properly coordinate its administrative activities, there is the need to improve the personnel record management system.

The computer-based system is designed to provide significant advantage over the manual method in use. For instance, it would be very useful in collecting, storing, analysing and disseminating information of prospective and serving employee with a very fast speed and with a high degree of accuracy, reliability, integrity and securing.

The computerization of Personnel information management system of the Nigeria Export Processing zones Authority is therefore aimed specifically at eliminating the problems encountered in using the manual system.

2.5   FINDINGS

The existing system has the following inadequacies.

(a)   The manual system is very expensive to maintain.

(b)   Very slow access to information.

(c)   It is rather very tedious, energy sapping and uninteresting.

(3) TRAINING AND DEVELOPMENT

After establishing a manpower plan for the organisation and having also attended to the recruitment and selection procedures, personnel department now focuses its attention on training and development of the employees. Training is a short-term process of learning specific skill by both junior and intermediate staff. Development, on the other hand, is a long–term learning process designed to develop senior officers in order to acquaint them with changes in technology and management methods. Personnel department collects information in the area of training through discussions with other heads of department and through other documents in the organisation.

(4) STAFF APPRAISAL

Staff appraisal is a process of determining the success, failure, and effectiveness of all functionaries of the organisation towards the set objectives. It is, therefore, the duty of the personnel people to devise a system whereby all functionaries within an organisation could be appraised to find out if they are performing the tasks allocated to them satisfactorily, staff appraisal, when properly carried out, has advantages both to the organisation and the employees.

negotiation skill in order to safeguard the interests of the organisation at all times

(8) COMMUNICATION

This is the most difficult function for the personnel specialist. It is the. first skill the staff of personnel department should posses. They must be able to communicate effectively. It is by effective communication that conflicts in organisation can be reduced to a tolerable level.

(9) PERSONNEL RECORD MANAGEMENT

One of the major functions of the personnel department is the storage of data and information about the employees in an organisation. This involves keeping of personnel records for effective management and prompt retrieval. It is the duty of the personnel department to develop records that are simple, easy to maintain, accurate, comprehensive and also relevant to the needs of the organisation. The personnel records should not be duplicated and should be maintained and updated from time to time.

2.8 THE CONCEPT OF RECORD MANAGEMENT

Records management can be defined as the art of preserving essential records accurately in an organisation and subsequent speedy retrieval as information for decision-making. It is also a close study of modern management techniques on filling and retrieval systems, provision of modern

office equipment and machinery, accommodation and facilities as well as the organisation and management of registries.

It is quite obvious that records are as important as other resources such as manpower, finance, and material resources. Information, in other words, is the product of processed data or records. The commonest system in any organisation of maintaining, strong and retrieval of personnel records and information is the use of files in the correspondence registries. Most of these registries are usually dingy places, ill equipped, poorly staffed and poorly ventilated. In addition, some officers have no regards for record and they are aware of the importance of the registries as the nerve center and live wire of the organisation.

Although the principles and concepts of personnel Records Management are universal, each organisation or office has its specific features and problems which need to be identified before a suitable solution can be found. As observed, antiquated methods need to be modernised. The problems of records management is becoming more acute from day-to-day because of the accelerating accumulation of papers, including personnel papers which make their control ever more difficult. This can, however, be solved or simplified by the application of modern management techniques development and training, motivation, proper classification, indexing, filling and numbering of files.

2.9 ' PURPOSE OF PERSONNEL RECORDS

Personnel records are kept for a variety of reasons, depending on the objectives, functions and environment of the organisation. The following are regarded as being pertinent:

(i)   To furnish the much needed information on organisation on organisational manpower, which is useful for both internal and external management of the organisation.

(ii)   To provide accurate information on manpower planning in terms of educational qualifications, cognate experience, knowledge and skills of employees, their potentials and placement opportunities

(iii)   To generate information on human resource research. That is, necessary information is supplied to validate hiring, selection, placement and promotion criteria.

(iv)   To finish information on employee strengths and weaknesses so that appropriate training and development schemes can be designed and implemented in a systematic fashion.

(v)   To provide information on how best to conduct industrial/employee relations.

(vi)   To generate information on the capability and productive profiles of each employee. That is, manpower recognition which assist in

determining bonus payments, advancement/promotion, demotion, transfers etc.

(vii) To provide factual data as a basis for decision making in every area of personnel work, e.g., manpower forecasting and planning recruitment and selection, training and development and health and safety.

2.10. COMPUTER APPLICATION TO PERSONNEEL MANAGEMENT

Today's computer has a very wide application. The fact is that computer can be programmed to perform a variety of task that involved little or no mathematics. The computer can provide information to management for decision-making. For the staff of personnel department, it provides information required for:

i. Planning for human resources needs of an organisation.

ii. Finding and hiring employees.

iii. Training and compensating staff.

iv. Retiring employees.

In addition, the personnel department can use the computer to store the employee records for proper and reliable retrieval of information. The ability of the computer to perform these various functions is due to the availability of

application packages. An application package is a program or set of programs designed to perform a specific type of work, such as payroll, sales ledger, personnel record, etc. These packages include Databases, Word-processing and spreadsheet packages. All these have direct impact on personnel Management.

When applied to personnel, a good database management system can process personnel information in a variety of ways. For instance, it could display the information on the screen or by printing a report. Additionally, the record of all employees can be stored and retrieved as required. Its ability to sort and search data allows informations to be retrieved in an orderly manner.

Other areas of application of the computer to personnel management have to do with communications/terminal emulator packages, which allow the manager to talk to other people through the computer. This is a good device for collecting data on applicants, crosschecking with referees and sending information to short listed candidates or those offered places. Data on employees in various branches can also be transferred easily and promptly for use. As stated earlier, therefore, the aim of personnel records is, to a large extent, determined by the aims of the organisation in general, and the aims of the personnel department in particular. This is because personnel records should be seen as a subset of the personnel information systems.

CHAPTER THREE

3.0 SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION

The system analysis and design stage involves analysing the existing system in order to aid the designing of the proposed system. The analysis is considered important because the design of the new system is dependent on whatever information gathered during the analysis stage.

In recognition of the above, this chapter begins with description of the existing method as well as outlining the problems associated to it so that the new system to be designed will be able to meet the expected benefits. In addition, this chapter also analysed the approach to personnel record management and information system so as to form the basis of the new system.

3.2 THE EXISTING METHODS OF RECORDS MANAGEMENT IN NEPZA

This is an important stage of system development and it involves carrying out some findings as regards the existing procedures in an organisation. It is therefore based on the analysis made that a design will be carried out such that it will suit the present and future needs of the organisation.

3.3 PROBLEMS OF THE EXISTING METHODS

The introduction of computer in the present day world is expected to replace Manuel operations. This necessary due to increased activities in our present day life. However, in areas where manual is still in place, there exist various problems such as loss of vital information insecurity of data, late retrieval of necessary details and host of others, which lead to inefficiency in the general operations of the system. The net effect is that the organisation that faces such problems would not be able to meet up the set objectives.

Specifically, the problems associated to managing staff records in the Nigeria Export processing zones are as follows:

i. Inaccurate, incomplete and incorrect documentation.

ii. Explosive volumes of records, which is tantamount to over-creation or over generation of data and attendant duplication.

iii. Lack of safeguards on the confidentiality, accuracy and relevance of personal information.

iv. Poor and inaccurate storage facilities as manifested in accommodation and equipment infrastructures.

v. Increasing search time, which is a manifestation of poor retention and retrieval procedures.

vi. Increasing retention of useless and outdated records which is indicative of absence of regular records census.

vii. Absence of validation mechanism, which is a function of the problems originally inherent in, input data collection to ensure that it is correct, and updating to ensure its currency, reliability and verifiability.

viii. Uncontrollable access, misplacement and loss of vital documents.

ix. Low calibre staffs are put in charge of records, arising from low value attached to records, or misinformation about the value of good record keeping in organisational life.

In recognition of the above problems, the department has not been able to meet up most of its obligations.

3.4 ANALYSIS

After a thorough analysis of the existing system in operation in the organization, the information and facts obtained shows the followings: -

(a) **Misplaced/Hidden files**: - Most times files are misplaces or hidden away from the cabinet and only seen after certain personnel objectives are met.

(b) **Information accessibility**: - In most cases, timely information when needed to accomplish a task are not available and even when available are not easily accessible.

(c) **Reliability;** - The reliability of the present information system the organization is adopting is highly questionable. Some important questions that need be answered include: How can transactions be processed in respect in respect of staff whose file has been misplaced or lost?

(d) **Control-** this is the mechanism designed to check and handle the existence of unexpected events like detecting the non-existence of staff record and if possible update them. The present system has proved defective in this regard.

(e) **Economy-** the cost and benefit analysis of the new system has shown significant cost saving benefits particularly in the long term. Hence the new system can be said to be economical to the present system.

3.5 REQUIREMENT SPECIFICATION FOR THE PROPOSED NEW SYSTEM

This tend to define in clear terms what the new system is required to do

(1) **Storage**: - It is expected that the storage device will cope with large quantity of data and information in anticipation of growth in staff strength of the organization.

(2) **Reliability:** - In anticipation of increased staff strength, it is expected that the computer will provide the same result without showing any sign of tiredness or fatigue. However, the creation of additional data fields or the modification of existing ones should be made possible.

(3) **Support:** - It necessary that the hardware/software supplier of the new system should have the required resources that can provide the type of support which may be required at the three main levels of the system, that is development stage, implementation and operational stage.

(4) **Error free:** - The new system is expected to be error free in all its operation. If a mistake is identified in the information produced, it might be as a result of incorrect data entry fed into the system. GIGO- (Gabbage In Gabbage out).

(5)   **Speed**: - It is expected that the new system will have greater speed since computer can perform a task, which can take individual(s) several weeks to accomplish in seconds. The volume of complex tasks the computer can handle within a moment is enormous.

(6)   **Security:** - Only authorised person(s) should have access to the files; and this can only be done by the use of special security like PASSWORD. Without having the correct password, nobody will be able to access the files.

(7)   **Accuracy:** - Computer processes information quickly and accurately. The new system will provide information quickly and accurately as compared to the manual system, which could be full of inaccuracy.

3.6 TESTING PROJECT FEASIBILITY

The following tests were undertaken to ascertain the project feasibility.

(a)   **Operational Feasibility:** A careful analysis of the information gathered from the various tools used in conducting the feasibility study was carried out to ascertain the workability of the proposed system. It was found that both the management and the users are ready to make it work effectively.

(b)   **Technical Feasibility:** This examined the possibility of maintaining the available personnel with the new system. In this regard, the

implementation stage takes care of any shortfall by the training process involved.

(c) **Financial Feasibility:** Based on the cost and benefit analysis, it is clear that the benefits to be derived from implementing the new system are worthwhile.

The cost implications of the proposed system have been examined and are capable of financing the project.

3.7 **COST AND BENEFITS ANALYSIS THE NEW SYSTEM**

This will be shown based on the following:

(a) Development cost

(b) Operation cost

(A)	DEVELOPMENT COST	₦	K
1.	System Analysis and Design for 3 weeks	45,000.	00
2.	Software development and implementation	20, 000.	00
3.	3 PCs	240,000.	00
4.	Printer (blmodle	100, 000 .	00
5.	Installation	25, 000 .	00
6.	Stabilizer	45,000.	00
	Total	₦ 475,000.	00

(B)   OPERATION COST   N   K

1.   Program maintenance   80,000 = 00

2.   Equipment maintenance   15, 000 = 00

3.   Supplies for 1year   60, 000 = 00

4.   Utilities   50, 000 = 00

5.   3 operators at N15000 per month   100, 000 = 00

6.,   Miscellaneous Expends   50, 000 = 00
                                                                         355,000 = 00

   Grand Total = N 475, x N 355,00 = N830, 000.00

Benefits analysis

A lot of benefits could be derived from the use of computerized personnel

Management Information System.

SOME OF THE BENEFITS INCLUDE: -

(a)   Duplication of staff record is eliminated

(b)   Easy storage, retrieval and access of data.

(c)   The staff records and other relevant information can easily be stored

       and maintained more accurately and efficiently.

(d)   There is data security

(e)   Reduction in the use of paper (stationeries)

CHAPTER FOUR

4.0 PROGRAM/SOFTWARE DEVELOPMENT AND IMPLEMENTATION

4.1 INTRODUCTION

This chapter focuses more at providing the user (s) with the necessary information needed on how to install and run the system efficiently and efficiently. Indeed, all aspects of the system were operationally tested prior to their use. This thereby allows the software designed to be accepted.

4.2 CHOICE OF LANGUAGE: -

In developing this system, Dbase IV programming language was used. It is software, which is accessible to authorised managers and other personnel for administrative purposes and in decision–making process. Dbase is so powerful and flexible such that it is being used in financial, business, accounting and personnel application by management.

4.3 FEATURES OF LANGUAGE CHOSEN

(a) Data redundancy is eliminated: - This occurs in file processing system when the data cannot be arranged to suit the entire option program accessing the data. This results in the same data appearing in more than one file.

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(b) Data sharability is increased: - The sharing of compatible data by different applications allows the user to gain valuable information by picking data from right across the organization. The data are no longer "owned" by particular applications but instead all the users share them.

(c) Easier, Logical access to data: - the increasing use of telecommunication by many organisation and the conversion of many data processing mode meant that users have better access to the computer.

(d) Facilities to add new, delete and amend records: - When new set of data are added, it is often found that some of the required data ae already stored for other purposes. The data items in Dbase are linked or chained to each other so that any required relationships can be changed and new relationships can be established, hence saving a great deal of time.

(e) Data are centrally controlled: In Dbase environment, data and operations on data centrally controlled and this can lead to better management of data by enforcing standards for all the user

4.4　WORKSTATION REQUIREMENT

The system is designed to run on the personal computer.

HARDWARE REQUIREMENTS

IBM –PC or Compactable

Floppy Disk Drive (Double Sided Double density or Double Sided High density or 3.5 or 5.25)..

RAM – 8MB

One hard disk drive

Standard keyboard

- Monitor – VGA coloured

Printer – Laser jet 5L or Dot matrix

Stabilizer or UPS.

SOFTWARE REQUIREMENT

System Software MS – Dos 6. 0

Application Software – Dbase 3 +

4.5　FILE CONVERSION/ CHANGEOVER PROCEDURE

A file is a collection of data. A computer file consists of a collection of records each, which is made up of fields and the various fields consist of

groups of characters. While file conversion is the process of changing from old system to new system.

There are 4 methods changeover procedures: -

(1) **Parallel method:** - Here the old and systems are run concurrently, using the same inputs. The outputs are compared and reasons for difference resolved. Outputs from the old system continue to be distributed until the new system has proved satisfactory, after which the old system gives way to the new system.

(2) **Phased conversion:** - This is gradual system of conversion. Here components of the new system are implemented one at a time into the old system, and the old system is phased out by piece.

(3) **Direct conversion:** - Here an entire new system is installed. The old system is completely dismantled, and the new system becomes operational immediately.

(4) **Pilot conversion:** - The change- over would involve the changing over of part of the system either parallel or directly. One subsystem is chosen as the lead system and implemented before all other. Only when that subsystem is completely operational can conversion of the next system be considered.

4.6   INPUT SPECIFICATIONS

In designing a computerized personnel management system for NIGERIA EXPORT PROCESSING ZONES AUTHRITY the following input data were used: -

(a)   Person Data Record (Section

(b)   Personal Emol   t R cord   tion II)+

A. Per   ata R   l

1. Employee Code Nun   (EM   CD. No). This is particular (unique) key to each staff. T   is ever staff   a unique personal file number that used to process his/her record.

2. Name i.e. Surname First and other names.

3. Nationality

4. State of Origin

5. Local Government Area

6. Data of Birth

7. Marital Status

8. Sex

9. Department

10. Department code

11. Data of first Appointment

12. Data of last promotion

13. Qualification

14. Grade Level

15. Rank

16. Higher Institution Attended

17. Data attended higher institution

2. PERSONAL EMOLUMENT RECORD

1. Employee code Number

2. Bank

3. Account Number

4. Department Code

5. Date granted for Vehicle Advance

6. Amount granted for Vehicle Advance

7. Date vehicle loan is expected to end

8. Vehicle Advance monthly Deduction

9. Date granted for Housing Loan

10. Amount granted for Housing Loan

11. Data housing Loan is expected to end

12. Monthly Deduction for Housing Loan

13. Transport/Motor Vehicle Allowance

14. Rent Allowance

15.Residential Address

4.7   OUTPUT SPECIFICATIONS

In designing the new system the following output reports are required: -

1. General Staff List

2. Department staff List

3. Emolument Record

4. Suspension List

5. Leave Record

6. Training Record

7. Retirement Record

There appropriate medium to used for our output is a laser printer for printing reports referred to as "hard copy" and a visual display unit (VDU) or monitor for on line viewing. Our personnel management system therefore should be able to displaying information via printed sheets and visual display unit (VDU).

The content of the output, that is the specific data fields, with their maximum width, the format of the output i.e. the layout of the hard copy/ screen is specified in the program listings (for details see appendix)

4.8   FILE SPECIFICATION

File Creation: - This management department deals with personnel of different categories whose records must be processed for effective administration, Record of these staff are grouped together in files, each file holding records of the same type. The functions of a file in a data processing system depends on the role of its records within the optional environment and also on the possible inter–relationships of the file with other file in the system.

In developing this system, a master file is created.

Master File: - This is the file containing records vital to the running of the system. It uses the information in personal data form to create our master file.

This file can be updated and maintained from time thus ensuring that accuracy of the ate in the file is achieved. The operation of changing a master file to reflect the latest information contained in the database is called updating of master of a master file.

Data files are created, in order to facilitate data input, process, and output. In this system the database file created is the master file called "PERSONNEL DATA BASE" The file contains the different fields and width for data entry, process and output. For proper storage and easy accessibility, the data are organised as follows: -

1. Field Number: - The number of the field in the database

2. Field Name: - Names of the field in the database

3. Field Type: - Character, Numeric, Data. Logical and Memo

4. Field Width: - Length of each field in database

5. Field Decimal: - Number of decimal places for numeric.

The master file structure for database, which is like a reference file that contains all the details of all the employees in the authority at any point in time.

Its structure is a stated below: -

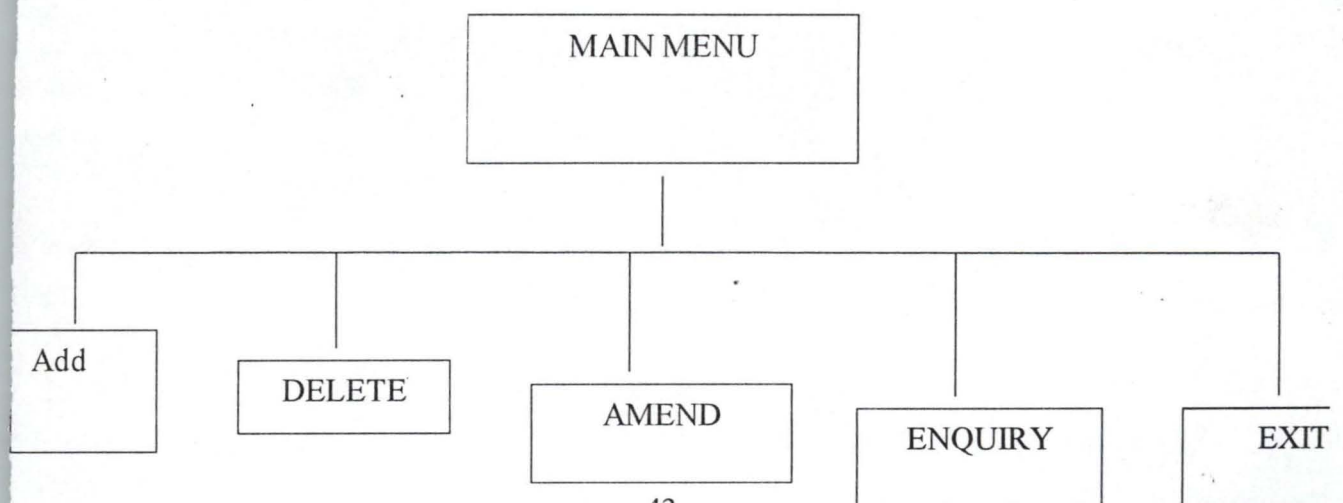| S/No	Field name	Field Description	Field Type	width
1	FN	Staff File No	Character	6
2	Surname	Surname	Character	15
3	F Name	First Name	Character	20
4	Oname	Other Names	-	20
5	DOB	Date of Birth	Date	8
6	Pob	Place of Birth	Character	15
7	Origin	State of Origin	-	12
8	LGA	Local Govt. Area	-	15
9	Town	Town of Origin	-	15
10	Sex	Sex	-	1
11	Age	Age	-	2
12	HADDR	Home Address	-	30
13	PADDR	Postal Address	-	30
14	PQUAL	Present Qualification	-	20
15	PEXRR	Previous Experience	-	20
16	DOA	Date of Appointment	Date	8
17	RCODE	Rank Code	Character	2
18	NKIN	Name of Next of Kin	-	20

4.9   PROCESSING SPECIFICATION

The new computer system will allow the use of interactive processing, users a directly interact with the computer system through computer terminals. The computer and the user respond to each other in a real time mode, which means within a matter of seconds or minute. This type of processing brings new opportunities for good and effective design.

A menu of command files is also designed. A user simply selects the option that indicates what she/he wants to do. The main menu is made up of four options, including an avenue for getting out of the system application environment if one wishes to stop work with the system for the time being.

4.10   THE MAIN MENU

The main menu in the new system is made up of five options namely: - Add record. Delete Record, Amend Existing Record, and Enquiry about staff and Exit.

```
                    ┌──────────────┐
                    │  MAIN MENU   │
                    │              │
                    └──────┬───────┘
                           │
   ┌──────┬────────┬───────┴──────┬──────────┬─────────┐
┌──┴──┐ ┌─┴────┐ ┌─┴────┐      ┌──┴─────┐ ┌──┴──┐
│ Add │ │DELETE│ │AMEND │      │ENQUIRY │ │EXIT │
└─────┘ └──────┘ └──────┘      └────────┘ └─────┘
```

4.11 STARTING THE SYSTEM

To operate the system written in Dbase IV, it could be accessed as follows: -

(1)   Type Dbase at the prompt to display the control centre

(2)   Press Esc key to take you to the Dos prompt

(3)   At the Dos prompt: -

CD/ Dbase IV press ENTER

This is to change the directory to the Dbase IV directly, when the

following appears: -

C:/ Dbase IV then type

. DO PERSONNEL then press ENTER

A screen appears with message on how to process the PERSONNEL

PROGRAM.

PERSONNEL INFORMATION

These options allow the users to maintain the personnel details of the

organisation in terms of entering new personnel details, modifying the existing

personnel details, viewing as well as removing personnel information.

(1)   **ADD RECORD:** - This is a submenu, which will afford the

user a chance to add all the required information about new

personnel data into the system.

(2)   **MODIFY:** - This process allows for change to be performed

on the personnel details of an employee

(3)	**ENQUIRY:** - nformation about individual in the authority can be received n required. e can also view an existing or require for nnel a and this is done by first entering the file er of t mployee.

(4)	**DELET** This is use to ge id of a particular record when no longer uired.

(5)	**EXIT/ QUIT:** - Once this option is chosen the user is taken back to the main menu. The user is taken back to Dos prompt.

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```
***********************MAIN MENU***********************

SET TALK OFF
SET BELL OFF
SET STATUS OFF
SET SCOREBOARD OFF
SET TITLE OFF
SET HEADING OFF
SET CURSOR OFF
SET PROC TO PERS
LELL=0
OLDDIR="        "
NEWDIR="        "
MLEVEL=0
MMENU=.T.
SET COLOR TO W+/B
CLEAR
ITEM1="ADDING NEW STAFF          "
ITEM2="DELETE STAFF RECORD        "
ITEM3="AMEND EXISTING STAFF RECORD "
ITEM4="ENQUIRY ABOUT STAFF        "
ITEM5="EXIT TO DBASE         "

TEMPITEM=ITEM1
@5,35 SAY "[ MAIN MENU ]"
@6,25 TO 18,60 DOUBLE
@8,30 SAY ITEM1
@10,30 SAY ITEM2
@12,30 SAY ITEM3
@14,30 SAY ITEM4
@16,30 SAY ITEM5

SET COLOR TO W+/GR
@8,30 SAY ITEM1
TEMPY=8
TEMPITEM=ITEM1
REALY=8
DO WHILE MMENU
AA=INKEY()
IF AA=13
SET COLOR TO W+/B
set cursor on
IF REALY=16
STORE .F. TO MMENU
ENDIF

IF REALY=8
DO INSERT1
ENDIF
IF REALY=10
```

```
DO DELETE1
ENDIF
IF REALY=12
DO AMMEND1
ENDIF
IF REALY=14
DO REPORT1
ENDIF

set cursor off
SET COLOR TO W+/B
CLEAR
ITEM1="ADDING NEW STAFF           "
ITEM2="DELETE STAFF RECORD        "
ITEM3="AMEND EXISTING STAFF RECORD "
ITEM4="ENQUIRY ABOUT STAFF        "
ITEM5="EXIT TO DBASE          "


TEMPITEM=ITEM1
@5,35 SAY "[ MAIN MENU ]"
@6,25 TO 18,60 DOUBLE
@8,30 SAY ITEM1
@10,30 SAY ITEM2
@12,30 SAY ITEM3
@14,30 SAY ITEM4
@16,30 SAY ITEM5

SET COLOR TO W+/GR
@8,30 SAY ITEM1
TEMPY=8
TEMPITEM=ITEM1
REALY=8



ENDIF


IF AA=24
REALY=REALY+2
IF REALY>16
REALY=8
ENDIF

IF REALY=8
REALITEM=ITEM1
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
```

```
@8,30 SAY REALITEM
TEMPITEM=ITEM1
TEMPY=8
ENDIF

IF REALY=10
REALITEM=ITEM2
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@10,30 SAY REALITEM
TEMPITEM=ITEM2
TEMPY=10
ENDIF

IF REALY=12
REALITEM=ITEM3
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@12,30 SAY REALITEM
TEMPITEM=ITEM3
TEMPY=12
ENDIF

IF REALY=14
REALITEM=ITEM4
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@14,30 SAY REALITEM
TEMPITEM=ITEM4
TEMPY=14
ENDIF

IF REALY=16
REALITEM=ITEM5
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@16,30 SAY REALITEM
TEMPITEM=ITEM5
TEMPY=16
ENDIF

ENDIF

IF AA=5
REALY=REALY-2
```

```
IF REALY<8
REALY=16
ENDIF

IF REALY=8
REALITEM=ITEM1
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@8,30 SAY REALITEM
TEMPITEM=ITEM1
TEMPY=8
ENDIF

IF REALY=10
REALITEM=ITEM2
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@10,30 SAY REALITEM
TEMPITEM=ITEM2
TEMPY=10
ENDIF

IF REALY=12
REALITEM=ITEM3
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@12,30 SAY REALITEM
TEMPITEM=ITEM3
TEMPY=12
ENDIF

IF REALY=14
REALITEM=ITEM4
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@14,30 SAY REALITEM
TEMPITEM=ITEM4
TEMPY=14
ENDIF

IF REALY=16
REALITEM=ITEM5
SET COLOR TO W+/B
@TEMPY,30 SAY TEMPITEM
SET COLOR TO W+/GR
@16,30 SAY REALITEM
```

```
TEMPITEM=ITEM5
TEMPY=16
ENDIF
ENDIF

ENDDO

set color to w+/b
clear
SET CURSOR ON
SET TALK ON
SET BELL ON
SET STATUS ON
SET SCOREBOARD ON
SET TITLE ON
SET HEADING ON




************************PROCEDURES************************

PROCEDURE INSERT1
Use PERS.dbf
RR1=.T.
Do while RR1
Store space (10) to tempno
Store space (1) to YesNo
Clear
@0,30 SAY "STAFF REGISTRATION DATA ENTRY FORM"
@1,30 SAY "===================================="
@3,0 SAY "STAFF IDENTITY NO." Get tempno
Read
tempno=upper(tempno)
tempno=rtrim(tempno)
tempno=ltrim(tempno)
go top
Locate for STAFFID = tempno
IF .not. EOF()
@15,20 SAY "Record already exists"
else
@4,0 SAY "STAFF NAME:" Get STAFFNAME
@5,0 SAY "STAFF ADDRESS:" Get STAFFADD
@6,0 SAY "MARITAL STATUS(SINGLE/DOUBLE):" Get MARITA
@7,0 SAY "DATE OF BIRTH:" Get DATEBIRTH
@8,0 SAY "EMPLOYMENT DATE:" Get EMPDATE
@9,0 SAY "ANNUAL SALARY:" Get ANNUALS
@10,0 SAY "DEPARTMENT:" Get DEPART
@11,0 SAY "LEVEL:" Get STAFFLEVEL
@12,0 SAY "QUALIFICATION:" Get STAFFQUA
@13,0 SAY "NEXT OF KIN (NAME):" Get NEXTKIN
```

```
@14,0 SAY "ADDRESS: " Get NEXTKINADD
Append blank
read
Replace STAFFID with tempno
Endif
@22,20 SAY "More records to add (Y/N)?" Get YesNo
Read
If upper(YesNo)<>"Y"
Store .F. to RR1
Endif
Enddo
RETURN


PROCEDURE AMMEND1
USE PERS.DBF
RR2=.T.
Do while RR2
Store space (10) to tempno
Store space (1) to YesNo
Store space (1) to YesNo2
set color to w+/b
CLEAR
@1,30 SAY "STAFF REGISTRATION DATA AMMENDMENT FORM"
@2,30 SAY "=============================================="
@4,0 SAY "Registration number" Get tempno
READ
tempno=upper(tempno)
tempno=rtrim(tempno)
tempno=ltrim(tempno)


Go top
Locate for STAFFID=tempno
If EOF()
@15,20 SAY "Record not found"
Else
@4,0 SAY "STAFF NAME:"
@5,0 SAY "STAFF ADDRESS:"
@6,0 SAY "MARITAL STATUS(SINGLE/DOUBLE):"
@7,0 SAY "DATE OF BIRTH:"
@8,0 SAY  "EMPLOYMENT DATE:"
@9,0 SAY "ANNUAL SALARY:"
@10,0 SAY "DEPARTMENT:"
@11,0 SAY "LEVEL:"
@12,0 SAY "QUALIFICATION:"
@13,0 SAY "NEXT OF KIN (NAME):"
@14,0 SAY "ADDRESS: "
SET COLOR TO GR+/B
@4,25 SAY STAFFNAME
@5,25 SAY STAFFADD
@6,35 SAY MARITA
```

```
@7,25 SAY DATEBIRTH
@8,25 SAY EMPDATE
@9,25 SAY  ANNUALS
@10,25 SAY DEPART
@11,25 SAY STAFFLEVEL
@12,25 SAY STAFFQUA
@13,25 SAY  NEXTKIN
@14,25 SAY NEXTKINADD


set color to w+/b
@22,40 SAY "Ammend (Y/N)?" Get YesNo2
Read
If upper(YesNo2)="Y"
Clear
@0,30 SAY "STAFF REGISTRATION AMENDMENT FORM"
@1,30 SAY "======================================" .
@3,0 SAY "STAFF IDENTITY NO." Get STAFFID
@4,0 SAY "STAFF NAME:" Get STAFFNAME
@5,0 SAY "STAFF ADDRESS:" Get STAFFADD
@6,0 SAY "MARITAL STATUS(SINGLE/DOUBLE):" Get MARITA
@7,0 SAY "DATE OF BIRTH:" Get DATEBIRTH
@8,0 SAY  "EMPLOYMENT DATE:" Get EMPDATE
@9,0 SAY "ANNUAL SALARY:" Get ANNUALS
@10,0 SAY "DEPARTMENT:" Get DEPART
@11,0 SAY "LEVEL:" Get STAFFLEVEL
@12,0 SAY "QUALIFICATION:" Get STAFFQUA
@13,0 SAY "NEXT OF KIN (NAME):" Get NEXTKIN
@14,0 SAY "ADDRESS: " Get NEXTKINADD
read
@16,20 SAY "RECORD AMMENDED SUCCESSFULLY"
Endif

Endif && if eof
@23,30 SAY "More Ammendment (Y/N)" Get YesNo2
Read
If upper(YesNo2) <> "Y"
RR2=.F.
Endif
Endif
Enddo
RETURN


PROCEDURE delete1
USE pers.DBF
RR22=.T.
Do while RR22
Store space (10) to tempno
Store space (1) to YesNo
```

```
Store space (1) to YesNo2
set color to w+/b
CLEAR
@0,30 SAY "STAFF REGISTRATION DATA DELETION FORM"
@1,30 SAY "========================================="
@2,0 SAY "Registration number" Get tempno
READ
tempno=upper(tempno)
tempno=rtrim(tempno)
tempno=ltrim(tempno)

Go top
Locate for STAFFID=tempno
If EOF()
@15,20 SAY "Record not found"
Else
@4,0 SAY "STAFF NAME:"
@5,0 SAY "STAFF ADDRESS:"
@6,0 SAY "MARITAL STATUS(SINGLE/DOUBLE):"
@7,0 SAY "DATE OF BIRTH:"
@8,0 SAY  "EMPLOYMENT DATE:"
@9,0 SAY "ANNUAL SALARY:"
@10,0 SAY "DEPARTMENT:"
@11,0 SAY "LEVEL:"
@12,0 SAY "QUALIFICATION:"
@13,0 SAY "NEXT OF KIN (NAME):"
@14,0 SAY "ADDRESS: "
SET COLOR TO GR+/B
@4,25 SAY STAFFNAME
@5,25 SAY STAFFADD
@6,35 SAY MARITA
@7,25 SAY DATEBIRTH
@8,25 SAY EMPDATE
@9,25 SAY  ANNUALS
@10,25 SAY DEPART
@11,25 SAY STAFFLEVEL
@12,25 SAY STAFFQUA
@13,25 SAY  NEXTKIN
@14,25 SAY NEXTKINADD


set color to w+/b
@22,40 SAY "DELETE (Y/N)?" Get YesNo2
Read
If upper(YesNo2)="Y"
delete
@23,50 say "record successfully deleted"
Endif

Endif && if eof
```

```
@23,10 SAY "MORE DELETION (Y/N)" Get YesNo2
Read
If upper(YesNo2) <> "Y"
RR22=.F.
Endif
Enddo
pack
RETURN

PROCEDURE report1
USE PERS.DBF
RR222=.T.
Do while RR222
Store space (10) to tempno
Store space (1) to YesNo
Store space (1) to YesNo2
set color to w+/b
YY2='N'
CLEAR
@0,30 SAY "STAFF REGISTRATION ENQUIRY FORM"
@1,30 SAY "================================="
@3,0 SAY "Registration number" Get tempno
READ
tempno=upper(tempno)
tempno=rtrim(tempno)
tempno=ltrim(tempno)

Go top
Locate for STAFFID=tempno
If EOF()
@15,20 SAY "Record not found"
Else
@4,0 SAY "STAFF NAME:"
@5,0 SAY "STAFF ADDRESS:"
@6,0 SAY "MARITAL STATUS(SINGLE/DOUBLE):"
@7,0 SAY "DATE OF BIRTH:"
@8,0 SAY  "EMPLOYMENT DATE:"
@9,0 SAY "ANNUAL SALARY:"
@10,0 SAY "DEPARTMENT:"
@11,0 SAY "LEVEL:"
@12,0 SAY "QUALIFICATION:"
@13,0 SAY "NEXT OF KIN (NAME):"
@14,0 SAY "ADDRESS: "
SET COLOR TO GR+/B
@4,25 SAY STAFFNAME
@5,25 SAY STAFFADD
@6,35 SAY MARITA
@7,25 SAY DATEBIRTH
@8,25 SAY EMPDATE
@9,25 SAY  ANNUALS
```

```
@10,25 SAY DEPART
@11,25 SAY STAFFLEVEL
@12,25 SAY STAFFQUA
@13,25 SAY  NEXTKIN
@14,25 SAY NEXTKINADD

set color to w+/b
Endif && if eof
@23,30 SAY "MORE ENQUIRY (Y/N)" Get YesNo2
Read
If upper(YesNo2) <> "Y"
RR222=.F.
Endif
Enddo
pack
RETURN
```

STAFF ID.	STAFF AME	STAFF LEVEL	DPRATMENT	EMP. DATE	ANNUAL SALARY
OJI234	BROWN O.J	10	ACCOUNTS	10/12/2000	150,000.00
GT00112	MR.AIDEE B.	12	QUALITY CONTROL	11/01/99	300,000.00
KJI289	MR ALPHONS ORINYA	14	COMPUTER	03/01/2001	350,000.00
53463JA	MR ADEBAYO I.S	15	PERSONNEL	08/01/99	400,000.00
2423YU	MR. OYEWOLE GEORGE	17	COMPUTER	04/01/2000	550,000.00

STAFF ID.	STAFF AME	STAFF LEVEL	DPRATMENT	EMP. DATE	ANNUAL SALARY