TITLE PAGE

COMPUTERIZATION OF PAYROLL SYSTEM

(A CASE STUDY OF ABAJI AREA COUNCIL, ABUJA)

By

SALA ZACHARIAH YISA

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CERTIFICATION

I hereby certify that this project is the original work of **MR. SALA ZACHARIAH YISA. PGD/MCS/2003/2004/1145**. Submitted for the award of POSTGRADUATE DIPLOMA IN COMPUTER SCIENCE OF FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.

_____ _____

DR. L.N. AKINWANDE DATE
PROJECT SUPERVISOR

_____ _____

MR L.N EZEAKO DATE
HEAD OF DEPARTMENT

_____ _____

EXTERNAL EXAMINER DATE

DEDICATION

This project report is dedicated to God almighty and to my beloved parents Mr & Mrs Barnabas Sala for consistent prayers, support and words of encouragement.

AKNOWLEDGEMENT

With profound gratitude and appreciation to God Almighty. I express my unreserved thanks and praises for sparing my life and seeing me through the program.

I and also indebted to my supervisor Dr. N.I. Akinwande for his numerous support and understanding, spearing time to read through this project report and for his constructive criticism. The effort of Mr. L.N Ezeako, the head of department and other member of staff of Mathematics/ Computer science department is sincerely appreciated.

I ever remain grateful to my beloved parents, brothers, sisters and friends Mr. Paul Yisa, Mr. D.N. Chechet, Mr. Enoch Yisa and Miss Grace Gana to mention but a few for their support and words of encouragement.

But for the families of MR & Dr. (Mrs.) Mundi and Mr.. & Mrs. Peter Olorunisomo who were always there for me, I wouldn't have been able to cope with the program financially, morally and otherwise. Words cannot express my appreciation to them. I only pray that the lord guide, protect and meet them at the point of their own needs.

I must not forget Mr. R.Y.Yakwo (Papa) and Mall. Abubakar both of Abaji Area Council who were instrumental to my getting information about Abaji Area Council.

My postgraduate colleagues are not left out. I sincerely appreciate the brotherly love we all enjoyed during this program. I want to believe that we are parting now to meet again.

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ABSTRACT

The main aim of the project is to introduce computers in the processing of the payroll system in an organization like Abaji Area Council where this has not yet been done. The reason being that computerized system is cost-effective and provides better information in terms of importance, speed and accuracy whenever needed.

It attempts to evaluate the manual system and the Electronic Data processing (EDP) based system. So that the most efficient, time saving and cost effective system is adopted.

Areas in which EDP systems are used in large scale organizations have also been pointed out and subsequent discussed.

It is the arm of government that is close to the grassroots as is the case in Local Government Areas of the states. It is to develop rural areas or communities by providing infrastructural facilities to the rural dwellers. Other functions of the Area council have also been mentioned to show why it is necessary to computerize its operations, more importantly its payroll system. The program for the payroll has bee written in the main objective of this program is to enable the salary section of the Abaji Area Council to produce the salary of all Abaji Area Council staff at the end of every month within the shortest time and less labour input. It has up-to-date facilities that does this at the touch of the keyboard of the computer system. It also has adequate security

through the use of personnel code as access key and protection device. This ensures strict confidentially of information on employees.

The program tries to give an accurate, more efficient less expensive and faster method of processing employees' salaries. This somehow out-weighs the manual method which is not ~~any~~ only cumbersome but also prone to a lot of errors and, in some cases, manipulations by fraudulent employees.

It is important to point out that the program has been designed with the sole needs of Abaji Area Council in mind. Extensive modifications have to be carried out if any other organization wants to adopt it.

CHAPTER ONE

GENERAL INTRODUCTION

PRELIMINARY

Modern offices are improving and steam-lining their procedures and systems by utilizing the most adequate office equipments which enable workers to process information faster and accurate thereby saving cost, time, space, labour and increase productivity

Likewise government demands and business bureaucracy requires extensive amount of paper work. In view of the above, modern office are re-examining traditional methods of carrying out office activities to find better and improved ways to capture and communicate information when and where it is needed. They seek the most efficient method to generate, record, process, file and communicate or circulate the information.

Computers are able to assist management to project and analyze the effects of various alternative methods of processing information. When computers are introduced into business information processing, this is called office automation office automation systems are computer-based to enhance the effectiveness and productivity of people who works in office. As a result of this, the need for office staff to become more conversant with modern office function and management becomes imperative. They also needs to learn new office skill and different ways of using new equipment and

procedures. Some of the skills they need to learn include the preparation of monthly salaries of workers in all the department of the organization and keeping efficient records of the movement of cash and other valuables.

In all public and business organizations, payment of salaries to workers is done through the payroll system. Although the method of processing salaries of workers differs from one organization to the other, the procedure is basically the same. It involves getting relevant information from personnel and finance departments about an employee, processing this information to get the monthly salary payable to each staff and up-dating the records accordingly. Thus, large amount of data are being handled and from time to time, new records are added, some deleted while others are completely dated.

The computerization of the Abaji Area Council (AAC) payroll system has not been fully implemented though the council has only few computers to handle this. As a result, preparation of monthly salaries of staff is being done manually. This is quite a tedious job that requires at least three or four hard working members of the account staff to handle. The time and efforts usually put in by those that perform supervisory role of checking to ensure accuracy of work done cannot be ignored. This is quite monotonous and time consuming. A lot of calculations are involved and so it is prone to mistakes too.

The personnel emolument cards and other payroll records are exposed to dust, wear and tear when messengers are conveying them from accounts departments to audit departments. Any of the cards can get lost as a result of misplacement or theft. There is also the problem of security for the data in the cards which contain details of salaries of various workers as this is easily seen.

All the above reasons necessitate the urgency of computerizing the payroll system of Abaji Area Council.

1.2 PROBLEM DEFINITION

The payroll system of the Abaji Area Council (AAC) is at present being processed manually. It involves writing out the salaried details of each and every staff and carrying out the calculations involved with hands. This is a very crude way of processing a function as important as the salaries administration.

Our problem now is that of devising a method of handling this important activity through the aid of EDP equipment so that all the draw-backs that are associated with the manual methods are eliminated or at least, drastically reduced.

The solution has been identified to be the computerizing of the payroll activities so that at the end of every month when the salaries calculations are being done, the minimal input of labour and time is expended while the

maximum achievable level of accuracy and speed is achieved. The Abaji Area Council has computers which at present are being utilized for other activities of its total function so the entire payroll computerization procedures could be achieved with minimum conversion, capital and labour cost.

1.3 RELEVANCE OF THE STUDY

1. It is positively envisaging that when completed, this study will lead to reduction in the number of staff directly involved in payroll preparation. This will consequently save some cost to the council.
2. Reduction in loss of records. When the system is fully computerized, the loss of records usually associated with handling salary cards manually will be eliminated.
3. Accuracy: The envisaged system will give more accurate result by reducing drastically the rate of error as the computer do not usually suffer from traits that lead to errors such as stress, tiredness, distractions and having too much to do with little time.
4. It will give maximum security and privacy unlike the manual system that allows anybody easy access to the personal emolument cards of an organization especially during the preparation and movement to audit unit.

5. The net effect of the great speed at which computer executes instructions will lead to drastic reduction in time it takes to prepare the monthly salary of the council.

1.4 SCOPE AND LIMITATIONS

This work focused solely on Abaji Area Council payroll processing problems and does not consider other functions of the council. Any secondary user will have to update the program to suit its environment. There was very little or no limitations as the needed information was made available by the council staff who were very co-operative.

1.5 OBJECTIVES OF THE STUDY

Certain objectives are usually aimed at when research studies are undertaken. The following are the objectives of the study:-

1. To design a fully computerized payroll system for the Abaji Area Council so that the problems associated with manual payroll can be solved
2. To determine the intelligence of the computer in solving problems in an organization where this problem can be reduced to an algorithm understandable by the computer.

3. To determine the problems associated with processing the payroll system manually and how computers can be used to solve this.
4. To device a system with universal applicability when certain minimal alterations are effected; and
5. To reduce all forms of malpractices and fraudulent manipulations that leads to inflated wage bill in the manual system.

CHAPTER TWO

LITERATURE REVIEW

2.1 THE ELECTRONIC BRAIN

The intelligent machine often referred to as the Electronic Brain has been tested by many theorists and found to be highly intelligent. Michel Boillot ***Understanding Fortran*** (2^{nd} Edition) enumerated areas where computers are being tested to know the level of their intelligence.

(a) During three-day test in the United States, in 1979, the National Airlines computerized reservation system handled over fifty million enquires with only two errors and these were detected and corrected by the system.

(b) For many years, mathematicians conjectured that four colours are sufficient to colour any map in such a way that no contiguous areas have the same colour, but no one could actually prove it. Scientist at the University Of Illinois have used a computerized approach to establish a proof of the proposition.

(c) Apple Computer Inc. manufacturers of low-cost personal computers has announced the availability of voice recognition device that makes the computer capable of understanding and responding to verbal commands. (artificial intelligence).

(d) At the 1979 computer conference held in New York city a competition was held for computer – controlled "Mice".

Participants in this contest built small self-controlled vehicles decorated to look like mice. At the conference, each "mouse" was placed in a maze, the design of which was kept secret from the contestants. The 'mouse" that ran the maze in the shortest time was declared winner.

The above mentioned computers are high – speed, internally programmed electronic computers that have become the unseen "brains" behind most of the business transactions of every day life. Computers have also had an incalculable influence on Governments, the sciences and the arts in the years since the first fledging computer was invented in the mid-1940s. Today's, computers are being applied to every conceivable problem. One has only to pick up any popular magazine to read about newer, larger and more complex problems being solved by them. The computer has become an indispensable tool in all scientific and commercial endeavour.

One of the areas of commercial application of computers is in payroll preparation. Here, the full powers and technological ingenuity that is the computing abilities of the computer are employed in ensuring that each and every staff of a computerized organization gets his/her full salary promptly at the end of the month. This ensures that all the calculations and salary

payment history for the year starting from January to December are accurately computed and maintained for the Auditor's vetting.

A computerized payroll system is the ultimate and efficient level in salaries and wages administration. With this system, the accountant and the wages personnel need not have nightmares when the salary preparation days draw near.

A payroll at the base level is the list of workers employed by an organization and the weekly or monthly pay that they earn. This is usually based on records from the personnel department of the organization involved. Payroll in the Abaji Area Council like any other organization is under the responsibility of the Finance Department.

2.2 BACKGROUND OF ABAJI AREA COUNCIL

What is today known as Abaji Area Council was partly carved out as Abaji and Yaba Development Areas from the former Kwara and Niger states in 1976 to become part of the new Federal Capital Territory as a result of the Federal Government decision to relocate the seat of government to a place that is more centrally located and easily accessible from all parts of the country. In 1973, Abaji and Yaba Development Areas were merged to become the present day Abaji Area Council following Federal Government's directive reconstituting the nine (9) Development Areas in FCT into four (4) Area Councils.

The Area Council has a population of about 21,000 inhabitants with a total land area of 1,100 square kilometer. It share common boundary with Kwali Area Council to the north and Kuje Area Council to the south-east. It is also bounded by Azza and Suleja Local Government Areas in Niger state to the south-east and Koton-karfe. Infact, Abaji is southern gateway to the Federal Capital Territory, Abuja.

There are a number of traditional rulers in the Area Council (graded and ungraded) with the Ona of Abaji (paramount ruler of Abaji) as the chairman Federal Capital Territory council of chiefs. Other traditional rulers include the Etsu Yaba, a third class chief, the Ohioduni of Paidagi, Aguma of Nuku etc.

The resident ethnic groups in Abaji Area Council include the Egbura, Ganagana, Gbagyi, Bassa, Nupe, Hausa and a cross section of Nigerian tribes that have settled in the Federal Capital territory. Also villages in the Area Council include; Nuku, Agyana, Pandagi, Rimba, Egbagi, Alu Mamagi, Gawu, Guridi etc.

The major occupations of the people of Abaji are framing, fishing, cloth weaving and petty trading with very few of the people working in Government and private establishment.

Abaji Area Council is blessed with rich and abundant mineral resources such as Barytes, Dianomite, Clay deposits, Kaolin, Marble, Glass

sand and Limestone among others, but it is observed with sad feelings that most of these resources are left untapped.

2.3 FUNCTIONS OF ABAJI AREA COUNCIL

1. The main functions of Abaji Area Council are as follows:

(a) The consideration and the making of recommendations to Ministry of Federal Capital Territory (MFCT) on economic planning or any similar body on

i. The economic development of Federal Capital Territory, particularly in so far as the areas of authority of the council and of the Federal Capital Territory are affected, and

ii. Proposals made by the said commission or body.

(b) Collection of rates, radio and television licenses;

(c) Establishment and maintenance of cemeteries, burial grounds and homes for the destitute or infirm;

(d) Licensing of bicycles, trucks (other than mechanically propelled trucks), canoes, Wheel barrows and Carts;

(e) Establishment, maintenance and regulation of slaughter houses, slaughter slabs, markets, motor park and public conveniences;

(f) Construction and maintenance of roads, streets, lightings, drains and other public highways, parks, gardens, open spaces, or such public

facilities as may be prescribed from time to time by the National Assembly;

(g) Naming of roads and streets and numbering of houses;

(h) Provision and maintenance of public conveniences, sewage and refuse disposal;

(i) Registration of all births, deaths and marriages;

(j) Assessment of privately owned houses or tenements for the purpose of levying such rates as may be prescribed by the National Assembly; and

(k) Control and regulation of:

i. Outdoor advertising

ii. Movement and keeping of pets of all description;

iii. Shops and kiosks;

iv. Restaurants, bakeries, and other places for sale of food to the public.

v. Laundries and

vi. Licensing, regulation and control of the sale of liquor.

2) The functions of Abaji Area Council includes participation of the council in the government of Federal Capital Territory as respects the following matters:

a. The provision and maintenance of primary, adult and vocational education;

b. The development of agriculture and natural resources, other than the exploitation of minerals;

c. The provision and maintenance of health services; and

d. Such other functions as will be conferred in the Area Council by the National Assembly.

2.4 ORGANISATIONAL STRUCTURE

Currently, there are six (6) Area Councils in the Federal Capital Territory with Area Council Service Commission in charge of appointment, discipline, promotion, transfer and general monitoring and supervision of staff on Grade Level 07 and above. It also has Area Council Staff Pension Board that takes care of pension and gratuity of retired staff. It Area Councils funded by the federal Government through the Ministry Federal Capital Territory (MFCT) and its minister which acts as state and governor respectively and National Assembly as the State House Of Assembly.

The Abaji Area Council which is saddled with the development of the entire area council has its headquarters in Abaji town with Yaba Development Area in Yaba and Local Educational authority (L.E.A) in Abaji that takes care of development of Yaba Area and primary schools in Abaji Area Council respectively.

The effective administration of the various functions enumerated earlier on this chapter had been a difficult task which the Abaji Area Council has been coping with mostly on monthly basis. The collection, distribution and utilization of funds for the development of the Area Council and accounting for same, the collation, analysis and storing of data on the entire Area Council had been of major concern to the council. This is addition to the problem created by the growing number of staff to work in the secretariat. The need therefore had been felt for sometime now to get the functions of Abaji Area Council completely computerized via management information system (MIS)

2.5 DEPARTMENTS OF ABAJI AREA COUNCIL

Abaji Area Council has an elected Executive Chairman as its head, and a career civil servant as the secretary (now political). For effective organization and management, the Area Council has the following departments:

Administration;

Finance and Supplies (audit inclusive);

Works;

Health;

Education; and

Agriculture

These are headed by designated Heads of Departments. Each of these departments is subdivided into divisions, sections and units headed by divisional heads, sectional heads and unit heads respectively.

CHAPTER THREE

CURRENT SYSTEM

3.1 AN OVERVIEW OF THE NEW SYSTEM

Computerization is that one look at an organization in a new way by the application of the computer system. Rather than concentrating on customers or services and products, the emphasis is on data, forms, information flows, procedures and so on. This approach is necessary because computers are subordinate parts of an information system. The effort is usually productive because a better information system that is an automated system normally improves the organizational results.

Before any case for change in any organizational set-up is presented for consideration, the motive for the changes must first be identified and fully examined critically to justify the imperative for change. Systems Analysis examines what the current system is, what it does and what is wrong with it and proffers possible solutions or remedies to correct the situation.

A system is an organized method for accomplished a business function. A formal definition of system analysis is:

The procedure used to study existing operations and costs, and to prepare a formal definition of the system in its entirety and of the major problem areas that must be eliminated.

The system analysts are the specialists responsible for analyzing current procedures and designing the most efficient and economical systems or procedures that will better accomplish given tasks within an organization.

3.2 ANALYSIS OF THE CURRENT SYSTEM

The current system of payroll administration in the Abaji Area Council is the manual hand-prepared system, even though Abaji Area Council has a number of computers that are currently being under-listed. On a monthly basis, the names of the staff are collated for amendment, deletion or addition. The files containing the payment and deductions are also amended. The loans details such as housing, vehicles, salary and touring advances are sent in from the section that handles these. All these details are entered into the personnel emolument cards which have earlier been opened for each category of staff at the following details:

Name of staff

Designation

Date of employment

Grade level and step

Annual basic salary

Allowances

Details of loan taken

- nature

- amount
- repayment period
- date taken
- amount to be deducted monthly
- overtime

OVERTIME

Monthly overtime schedules are sent in from various departments showing numbers of hours worked by each staff. After collecting all the above information, the payroll staff will then sit down to calculate how much overtime is to be added to each staff salary for the month by multiplying the hours worked by a rate that varies according to salary grade level of the staff.

The real salary calculations are then carried out by starting with the basic salary; all allowances such as overtime, transport, housing, meal, utility, etc. are added to the basic pay to get the gross pay for the period. Deductions such as tax, loans, advances, etc are then deducted from the gross pay to arrive at the net pay for each individual. The net pay is then entered into various bank schedules repeated until all the staff of the council have been treated. To get the total for the month and the year to date, all the months are summed up.

3.3 DEFECTS IN THE CURENT SYSTEM

The following defects have been identified from the analysis of the current system.

i. Generation of high volume of paper work.

ii. Possibility of errors and fraudulent manipulations.

iii. Delay in salary payments as a result of shortage of manpower

iv. Possibility of inaccurate month and year – to- date figures as a result of manual processing.

v. Mishandling of input documents from the personnel departments to the salary office.

vi. Non- confidentiality of certain information, eg the salary earned by top officers of the council.

3.4 WHY CHANGE IS NECESSARY

The above mentioned weaknesses have made it necessary for Abaji Area Council to adopt a new, faster and cost saving method of processing its payroll activities. It must be mentioned that the problems enumerated above are of a technical nature caused by the type of processing method currently being used – typewriters, manual calculators, over-loading of certain sections of the organization or exceeding the capacity of the current staff level thereby leading to late preparation of payroll slips and subsequent staff rumblings. Auditors have also frequently drawn attention of the management

to the current cumbersome system and the timely, complete and accurate reports that Abaji Area Council is to generate.

3.5 CONCLUSION

The above analysis have justified the need for Abaji Area Council to change over to an EDP system to process its payroll activities. When this is computerized as enumerated in the next chapter, there will be reduction of errors, delays and manipulations. However, it has been tested to see whether the criteria of determining a change-over are fully satisfied, that is operationally, economically and technically.

The proposed system is operationally feasible as here are enough trained staff with computer knowledge to handle the processing. Also the fact that the computers are there already little initial investment to add to computers means that it is also economically feasible. No much capital cost. Lastly, the envisaged system is technically feasible as payroll computerization is one of the most popular application of EDP to information processing.

CHAPTE FOUR

NEW SYSTEM DESIGN AND IMPLIMEMTATION

4.1 OVERVIEW

In system design, the analyst formulates exactly the procedures and sub-systems that will operate in the new and modified system. He also specifies how information and data are to be stored, retrained, processed, and reported in the system. A number of methods are used in system design. These include the expediency, bottom-up, top-down and eclectic approaches.

The most desirable of these in the long run. Is the top-down approach. Design of the new system concludes with the walk through, a dry run or paper review of it's operating characteristics. The final product of the design activity, the design report is a detailed description of the ultimate output of the system development cycle the new information system. Here, it is the new payroll system. Finally, the new system is implemented introducing a new system of doing this is never easy. A primary concern of system implementation involves the people who will be operational team members in the new system.

4.2 OBJECTIVES OF THE SYSTEM

The overall objective of design is to install a system which will not only adequately cope with the present workload of the payroll section but will also allow for the rapid expansion the council is undergoing and the same time makes an optimum use of the EDP facilities available at the area council. The system that has been developed accepts the basic salary, allowances and

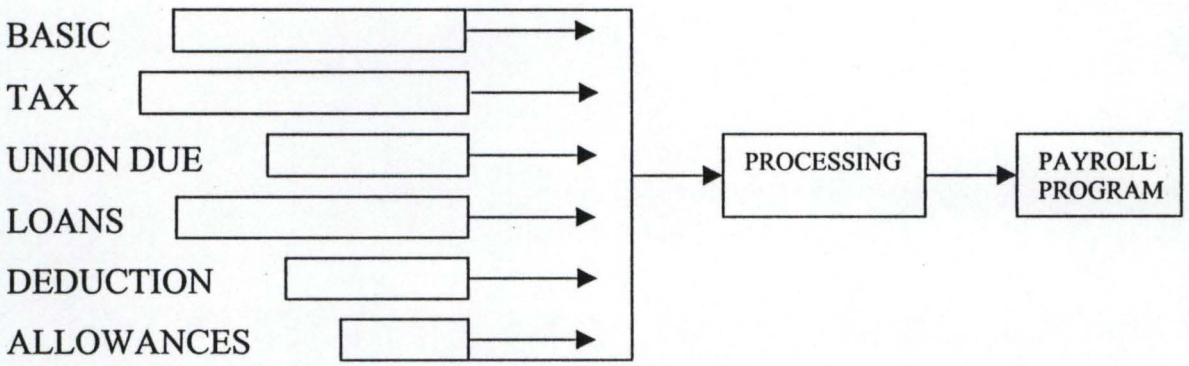
deductions then refer to internally stored variables like pre-calculated tax, union dues and loans to calculate gross pay. Net pay and departmental summaries

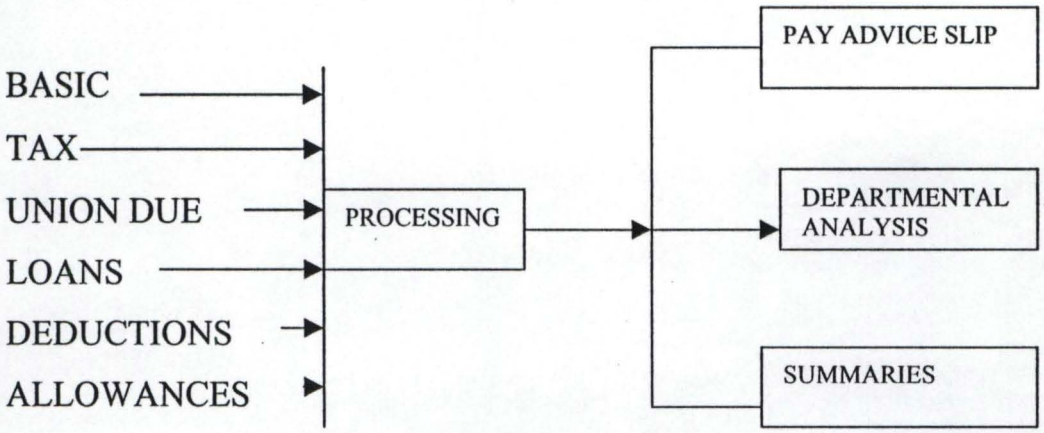
4.3 INPUT SPECIFICATION

The following are the input specification for the system:

1) The employees personal records
2) Basic salary
3) Allowances
4) Tax, deduction tables
5) Union dues deduction tables
6) Advance/ loans files.

The features of the processing routine are outline in the following chart.





4.4 INPUT ELEMENT

The basic element of the payroll system may be analyzed as follows:

a) Monthly payroll sheet

b) Processing

c) Storage- files in the system

i) Personal details

ii) Basic salary

iii) Allowances

iv) Deduction details

v) Taxation file

vi) Union due file

vii) Loans

viii) Net pay

ix) Loans application

x) Present employment details

xi) Bank details

4.5 OUTPUT SPECIFICATIONS

1) Pay advance slip

2) Payroll total

3) Annual/ monthly returns of PAYE

The end result of all payroll activities is the receipt of his pay advice slip by the employee to show that the true salary and details of same have been accurately calculated. This is prime objective of the system: timeliness and accuracy.

The payroll total shows the summaries of all departmental and sectional total net salaries deduction for the month at a glance.

The annual/ monthly returns are produced to comply with Federal Government and statutory audit requirements.

CREATION OF PAYROLL MASTER FILE

The file creation document is used by the operator for entering data through the keyboard in respect of employees details stored on the disk.

4.6 MAINTENANCE

Single fields can be amended and new employees added to adapt to operational requirements.

The payroll master file is updated as part of the processing routine. The file definition clearly shows the number and type of character in each field.

Other files that are used in conjunction with the master file include the following:

1) Tax file: This is used for all tax calculations.

2) Loan application: For all loans granted and deductions to be made.

3) Tax relief : For all tax relieves to which an employee is entitled.

4) Bank: To take care of all banks to which the employees have their accounts.

Other details are actually memory variables defined and stored in the system. The above details are all set up prior to program processing.

4.7 OPERATIONS MEHTOD

This program payroll was written in DBASE IV. DBASE IV is the most popular and powerful database management system (DBMS) available for personal computers. It organizes files in the form of tables. This program is accessed as follows:

At the DOS PROMPT type

CD/DBASE IV ENTER

This is to change the directory to the DBASE IV directory; when the following message appears:

C:/DBASE IV

Then type

Do payroll ENTER

A screen then appears with messages on how to process the payroll. The keyboard operator will now attend to the following processing requirement:-

a) Selecting and loading of programs

b) Running various routine like

-Editing records of staff

-Adding or deleting records

-Collecting overtime, arrears

-Loading pay advice slip to printer.

When the operator keys-in the data earlier collected, the machine will do the processing with minimum intervention. It automatically do the following:-

i) Calculate the basic salary of each employee

ii) Calculate by summing the total allowances of each employee

iii) Calculate by summing the total deduction of each employee

iv) Calculate the net pay by subtracting the total deductions from the gross pay per month to give gross net pay and adding this to allowances and basic to give the net pay.

v) Print pay advice slips, departmental totals, deduction list E.g. Tax, union dues e.t.c.

4.8 IMPLEMENTATION

This is the long awaiting moment, the moment when the old manual system will have to give way to the new system. There are several methods to

achieve this. This is usually referred to as conversion plan and it can come in several alternatives like:

Crash/direct approach

Pilot approach

Phased approach

Parallel approach

DIRECT APPROACH: This method is the complete replacement of the old system by the new, in one move. E.g if a date has been fixed as the changeover date, the manual system will seize to operate while the new computerization payroll system takes over on that date.

The method is potentially the least expensive, but the most risky. For security reason, the old system may be held in abeyance, including people and requirement. In the event of a major failure of the new system, the organization would revert to the old system.

THE PARALLEL APPROACH: this approach processes current data by both the old and the new system to cross-check the results. It's main attraction is that the old system is kept alive and co-operational, until the new has been proved for at least one system cycle, using full live data in real operational environment of place, people, equipment and time. It allows the result of the new system to be compared with the old system before acceptance by the user, thereby promoting user confidence.

It's main disadvantages is the extra cost, the difficulty and (sometimes) the impracticability, of user staff having to carry out the different clerical operations for two system (old and new) on the time available for one.

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

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

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

The disadvantages are that:

i) It creates problems of controlling the selected parts of the old and new system.

ii) It tends to prolong the implementation period.

4.9 PROGRAM MODULES

1. PERSONAL PROGRAM: This is the central program that links up with all other programs to ensure overall achievement of the payroll objective. The structure for this is as shown in the program listing.
2. PRESENT PROGRAM: This takes care of the present statue of the employee. Details found here are as shown in the structure for this.
3. LIBRARY PROGRAM: This takes care of all housekeeping routines and ensures that all variables required for calculation are made available when and where required. It has no structure of its own.
4. TAXATION PROGRAM: It calculates tax payable by all categories of staff of Abaji Area Council and them link up with the main program so that the overall payroll objective is achieved. The structure for this is as shown in the program listing.
5. LOAN APPRAISAL PROGRAM: This ensures that all loan applications are processed and those approved are taken to calculations for payments to the respective staff. The structure for this is as shown in the program listing.
6. DEDUCTION PROGRAM: This ensures that all deductions from salaries are properly calculated and them made available to the main program when required for processing. The structure is shown alongside the grogram listing.

7. LOAN CALCULATION PROGRAM: This calculates all loans to which staff are entitled and deductions on month-by-month basis. It structure has been shown alongside the program listing.
8. ALLOWANCE PROGRAM: This like the deductions program calculates all the allowances to which the employee is entitled and then these are made available to the main program for execution. Its structure has also been show too.
9. NET PAY PROGRAM: This calculates the net pay due to all categories of employees then send these to the banks. It has only two fields in as structure which has been shown in the program listing.
10. BANKS PROGRAM: This is the last program that analysis the net pay into the various banks with which staff of AAC transact banking business. Its structure has been listed alongside the program.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

The payroll is a very important aspect of the functions of the accounts department in any organization. Any factor that links the efficient and prompt computation and disbursement of salaries and wages to staff usually leads to industrial unrests that sometimes result in closure of the organizational machinery.

The computerized payroll system has been designed to eliminate the need to do all payroll work manually while at the same time ensuring that accurate records are properly maintained. The program was written after taking into consideration the client, its size and nature of it's structure and functions. It has been designed in such a way that personnel or code number of staff is used to identify each staff. This is done because of the uniqueness of coding. It has built in library programs, which have functions available to all programs like loans, tax, allowances, deductions. It can handle all possible volume of work at a convenient pace. It is user-friendly as well as maintainable. The stored data that has been validated, verified and debugged ensure that we have completeness and accuracy of information.

5.2 CONCLUSIONS:

This project work has been primarily directed at determining the feasibility of employing computers to process the payroll of the Abaji Area Council However, the following conclusions were arrived at, based on the facts already highlighted.

1. Computerized data processing is far more efficient than manual system since it enables a larger and broad based information to be generated.
2. The payroll activity of any organisation is a very important one and as such, efficient and accuracy which can only be achieved by the EDP necessitates its being computerized.
3. A lot of organizations usually feel very reluctant to incur the basic capital cost to computerize the payroll activity. However, the long run usually proves them wrong as a computerized system minimizes fraudulent manipulations.
4. Abaji Area Council should adopt this work and implement the payroll package been developed in this project work.

5.3 RECOMMENDATIONS

The following recommendations have been specifically directed at the primary organization, but can equally apply to any other interested organizations as well.

1. The Abaji Area Council should as a matter of urgency computerize the payroll activities to ensure accuracy, speedy computation, privacy and temper-free salaries and wages administration.
2. It should ensure that all activities connected with accounting and funds are fully computerized to ensure proper accountability and thorough funds management.
3. The job of computerizing the above activities should be done in-house to minimize cost and thorough suitability to the package to Abaji Area Council's peculiar functions.

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APPENDICES

LOAN.DBF

Number	Fieldname	Type	Width	Dec	Index
1	Pnumber	Character	6		N
2	Loandate	Date			N
3	Applied	Numeric	9	2	N
4	Approved	Numeric	9	2	N
5	Appdate	Date	8		N
6	Loanature	Character	15		N
7	Confirmed	Character	15		N

PRESENT.DBF

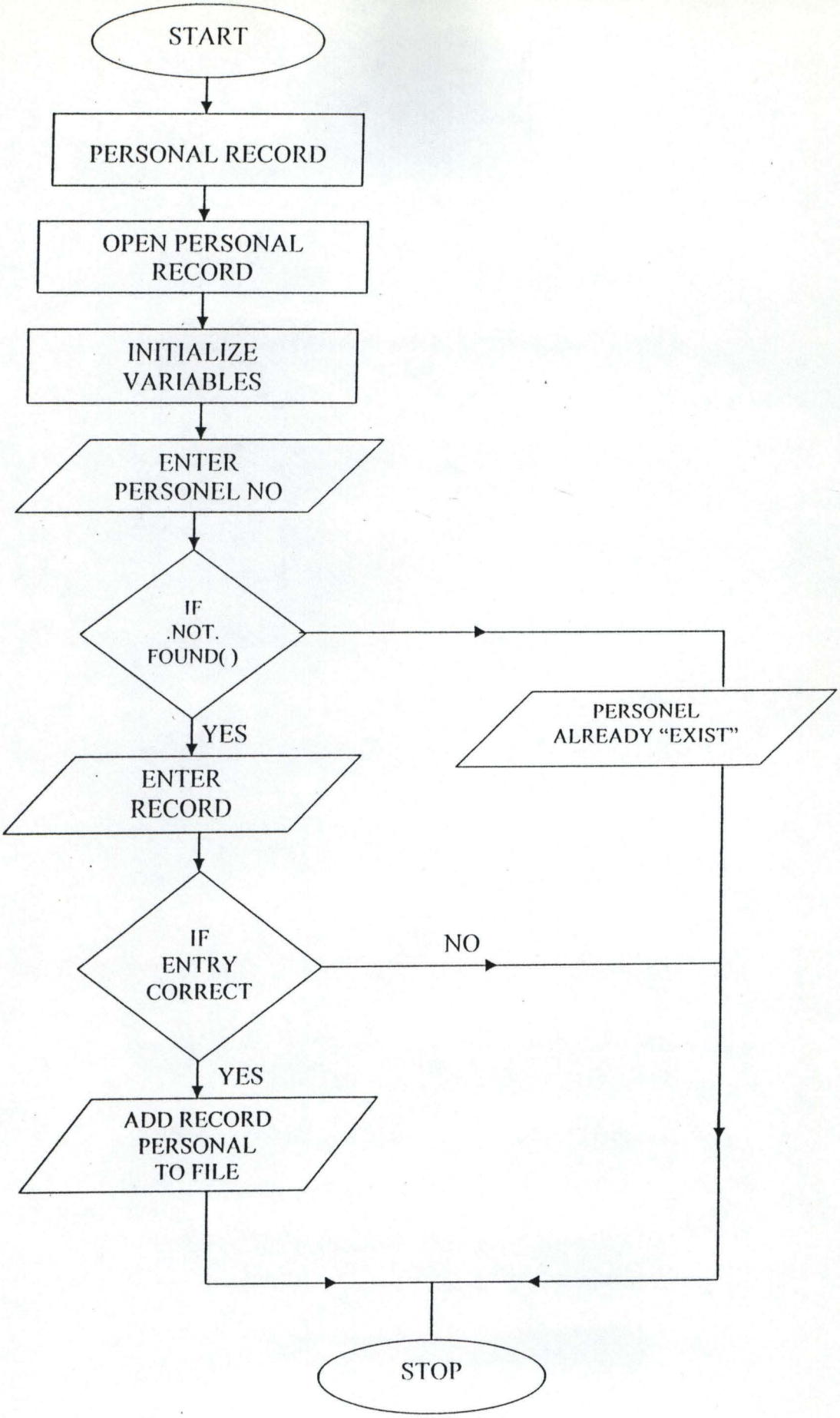
FIELD	FIELD NAME	TYPE	WIDTH	DEC	INDEX
1	Pnumber	CHARACTER	6		N
2	Firstapp	CHARACTER	20		N
3	DAPP	DATE	8		N
4	MODE	CHARACTER	12		N
5	Startlevel	Numeric	2		N
6	Startstep	Numeric	2		N
7	PTposT	CHARACTER	20		N
8	PTSTEP	Numeric	2		N
9	PTGL	Numeric	2		N

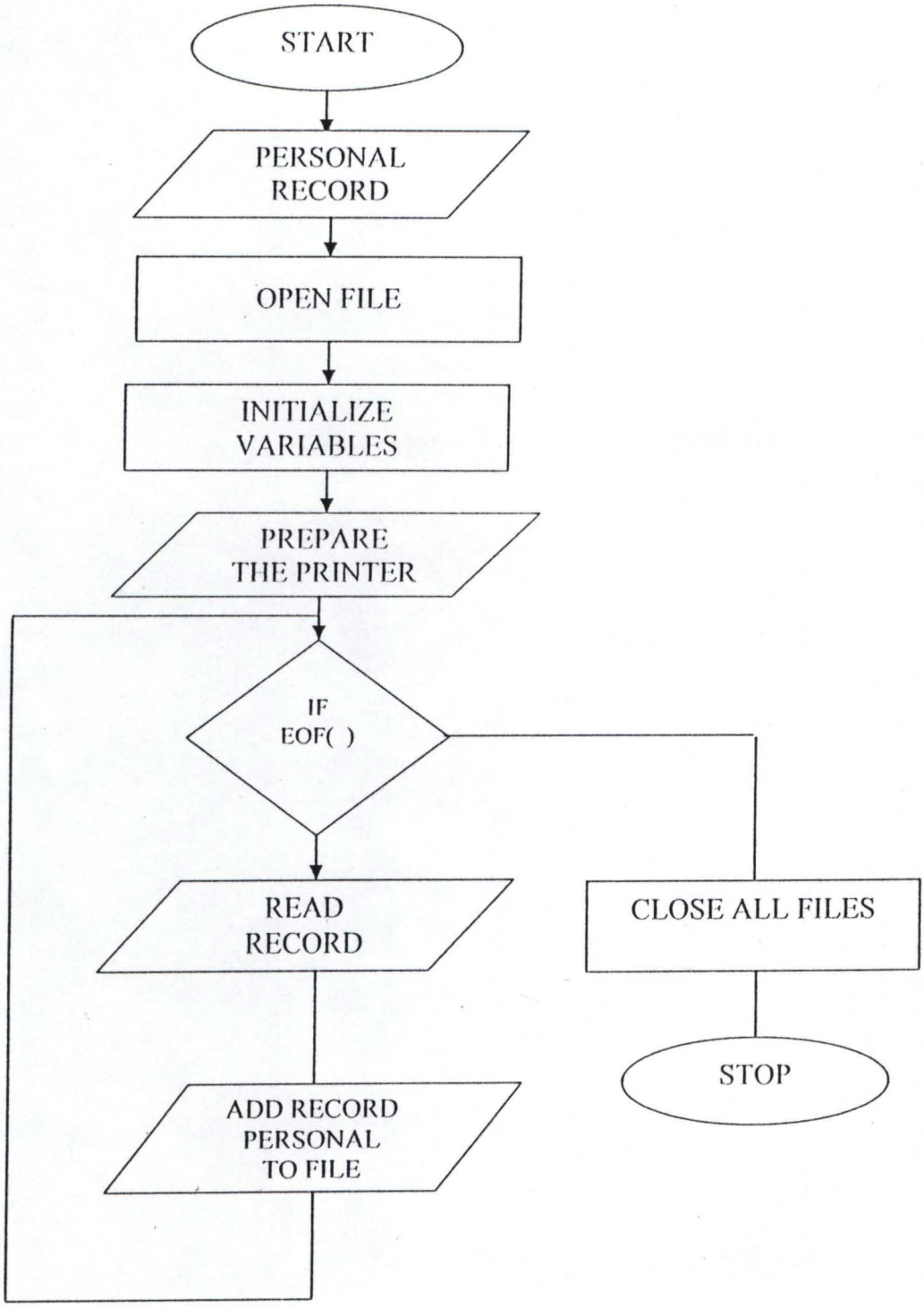
PERSONAL.DBF

Field	Field name	Type	Width	Dec	Index
1	Pnumber	Character	6		N
2	Department	Character	15		N
3	Name	character	25		N
4	Sex	Character	2		N
5	DOB	Date	8		N
6	Stateog	Character	15		N
7	Marstat	Character	10		N
8	Nochild	Numeric	3		N

ALLOWANCE.DBF

FIELD	FIELD NAME	TYPE	WIDTH	DEC	INDEX	ALLOWANCE. DBF
1	Pnumber	CHARACTER	6		N	
2	TPALL	Numeric	9	2	N	
3	HOUSEALL	Numeric	9	2	N	
4	LEAVEALL	Numeric	9	2	N	
5	ENTALL	Numeric	9	2	N	
6	UTILITYAL	Numeric	9	2	N	
7	ARR_HOU	Numeric	9	2	N	
8	ANR_TP.	Numeric	9	2	N	
9	OVERTIME	Numeric	9	2	N	
10	AREARS	Numeric	9	2	N	

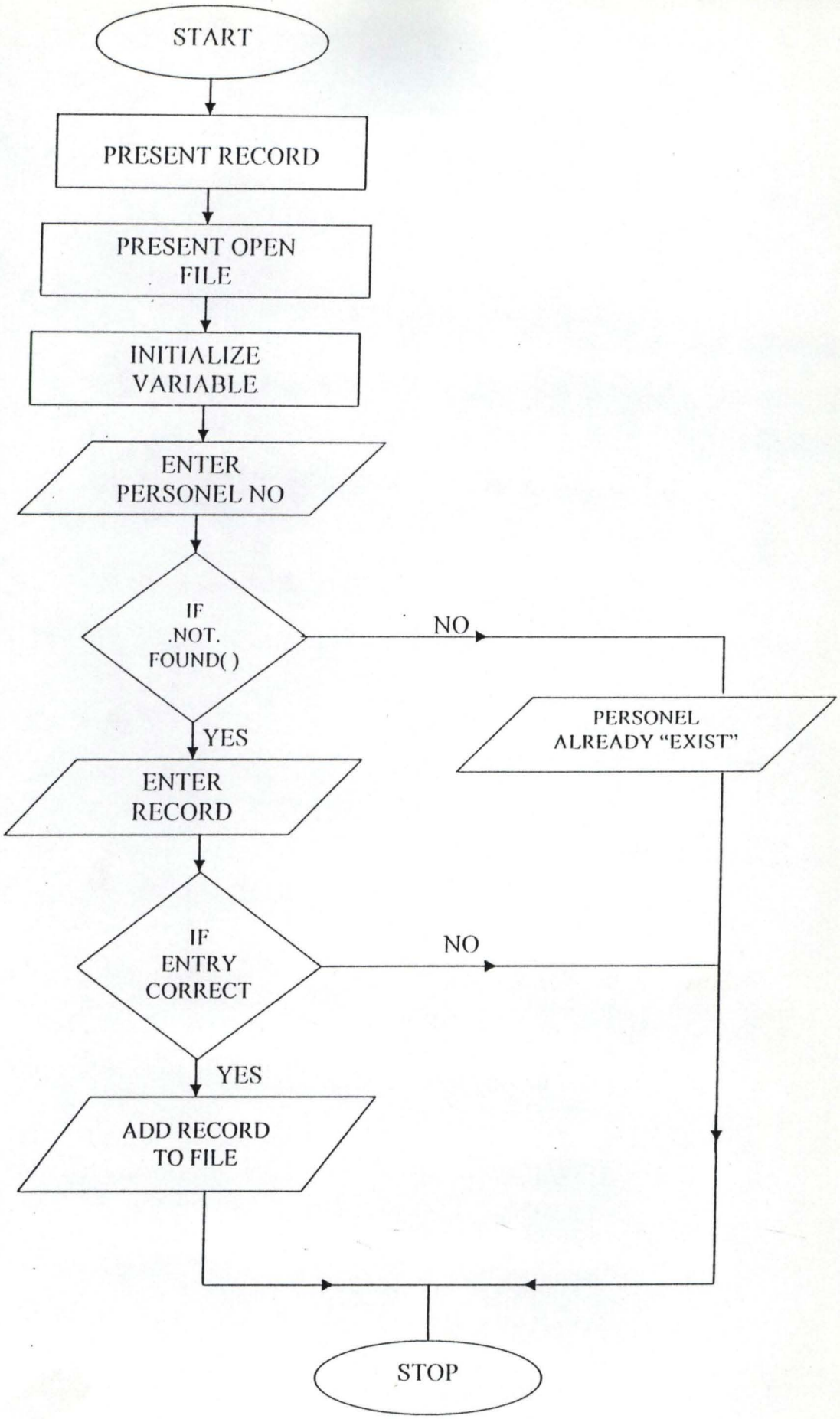

START
PERSONAL RECORD
OPEN PERSONAL RECORD
INITIALIZE VARIABLES
ENTER PERSONEL NO
IF .NOT. FOUND( )
YES
PERSONEL ALREADY "EXIST"
ENTER RECORD
IF ENTRY CORRECT
NO
YES
ADD RECORD PERSONAL TO FILE
STOP


START
PERSONAL RECORD
OPEN FILE
INITIALIZE VARIABLES
PREPARE THE PRINTER
IF EOF( )
READ RECORD
ADD RECORD PERSONAL TO FILE
CLOSE ALL FILES
STOP

```
**** PROGRAM PERSONAL ********
* * *AUTHOR SALA Y. * * *
        CLEAR
SET SCORE BOARD OFF
SET SAFETY OFF
SET ESCAPE ON
SET STATUS OFF
SET HEADING OFF
SET CENTURY ON
        USE PERSONAL
        INDEX ON PNUMBER TO PNUM.NDX
        CLEAR
        DO WHILE. T.
STORE SPACE (25) To mpnumber,mdept, mname,msex, mstaeog,mmarstat
STORE O TO mnochild, mchoice
STORE C TO D (" /  / ") TO mdob
@ 1, 5 to 22, 68 Double
@ 3, 27 SAY "PERSONAL RECORDS" COLOR W+/BG
@ 4, 26 SAY "ABAJI AREA COUNCIL" COLOR W+/BG
@ 6, 25 TO 8, 40 DOUBLE COLOR G+
@ 9, 10 SAY "ADD NEW RECORD "COLOR W+*/ BG
@ 9, 10 SAY "ENTER PERSONEL  NO....ESC TO EXIT" COLOR BG+/B
@  9, 42  GET  mpnumber "!!!!!!' ;
MESSAGE "ENTER  PERSONEL  NO"
        READ
        SET MESSAGE TO
        Mlastkey =lastkey()
         1F Lastkey() =27
        Clear
        Exit
        Endif
        Seek mpnumber
```

```
        If Found( )
        ?? CHR(7)
@ 10, 10 SAY "THIS PERSONNEL  ALREADY EXIST"
@ 12, 12 SAY "PRESS ANY KEY TO CONTINUE"
        X = INKEY(0)
        CLEAR
        LOOP
        ENDIF
* * * ENTER RECORDS NOW * * *
@ 9, 10 CLEAR TO 10, 67
@ 9, 6 SAY "PERSONNEL NUMBER" COLOR BG+/B
@ 9, 15 SAY mpnumber Pict "!!!!!!" color w+
@ 10, 6 SAY "NAME" COLOR BG+/B
@ 10, 12  GET mname Pict "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!" color /w+
@ 10, 52 SAY " DATE OF BIRTH" COLOR BG+/B
@ 10, 64 GET mdob Pict "99/99/9999" color /w+
@ 11, 6 say "SATE OF ORIGIN" COLOR BG+/B
@ 11, 19 GET msateog Pict "!!!!!!!!!!!!!!!!!!!!!!!" color /w+
@ 12, 6 SAY "MARITAL STATUS" COLOR BG+/B
@ 11, 50 GET mmastat PICT "!!!!!!!!!!!!!!!" color /w+
@12, 6 say "NUMBER OF CHILDREN" color BG+/B
@ 12, 25 GET mnochild PICT "99" color / w+
@ 13, 6 SAY "SEX" Color BG+/B
@ 13, 10 GET msex PICT "!!!!!" Color /W+
@ 14, 6 SAY "DEPARTMENT" COLOR BG+/B
@ 14, 18 GET mdept PICT "!!!!!!!!!!!!!!!!" COLOR BG+/B
@ 21, 29 SAY "IS ENTRY CORRECT (Y/|N)" COLOR BG+|B
@ 21, 5 GET MCHOICE PICT "@!AX";
      VALID MCHOICE = "Y". OR. MCHOICE = "N";
      ERROR "CHOICE MUST BE Y OR N"
      READ
      IF MCHOICE = "N"
```

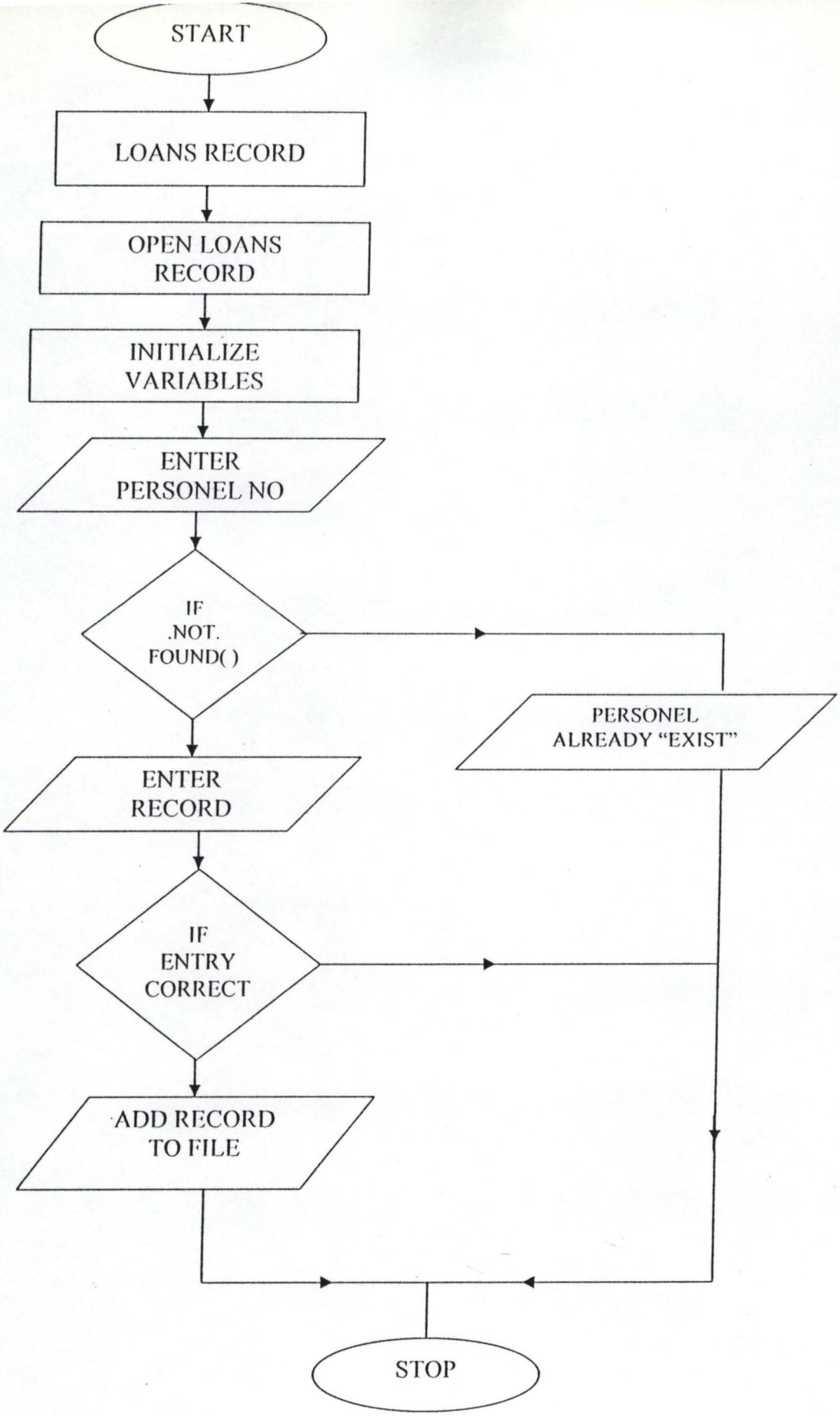
```
        CLEAR
        LOOP
        ENDIF
        APPEND BLANK
REPLACE PNUMBER WITH MPNUMBER
REPLACE NAME WITH MNAME
REPLACE DOB WITH MDOB
REPLACE SATEOG WITH MSATEOG
REPLACE MARSTAT WITH MMARSTAT
REPLACE NOCHILD WITH MNOCHILD
REPLACE SEX WITH MSEX
REPLACE DEPT WITH MDEPT
        CLEAR
        LOOP
        ENDIF
        CLEAR
        CLOSE ALL
        @ 10, 20 TO 22, 68 DOUBLE
        RETURN
```


START
PRESENT RECORD
PRESENT OPEN FILE
INITIALIZE VARIABLE
ENTER PERSONEL NO
IF .NOT. FOUND( )
NO
YES
PERSONEL ALREADY "EXIST"
ENTER RECORD
IF ENTRY CORRECT
NO
YES
ADD RECORD TO FILE
STOP

```
**** PROGRAM PRESENT ********
* * *AUTHOR SALA  Y. * * *
        CLEAR
SET SCORE BOARD OFF
SET SAFETY OFF
SET ESCAPE ON
SET STATUS OFF
SET HEADING OFF
SET CENTURY ON
        SIL = 60
        Pcode =space (35)
        Ppage = 0
Store replicate ("=", 135) TO RULEEQUAL
SELECT 1
USE SALARY
INDEX Prumber TO PIT. NDX
CLEAR
@ 4, 10 TO 20, 68 DOUBLE
@ 10, 12 SAY "PLEASE ON THE PRINTER" COLOR |W+
@ 12, 12 SAY "FIX PAPER CORRECTLY" COLOR |W+
@ 16, 12 SAY "PRESS – ESC TO EXIT OR ANY KEY TO CONTINUE" COLOR BG+|B
        Mlastkey = lastkey ( )
        IF lastkey ( ) = 27
        Clear
        CloseAll
        RETURN
        ENDIF
        X = Inkey (0)
@ 6, 12 CLEAR TO 17, 60
@ 8, 12 SAY "WAIT PRINTING IN PROGRESS" COLOR BG+|B
        SET DEVICE TO PRINTER
        SET PRINT ON
```

```
* * * PRINTING BEGIN * * * *
DO WHILE. NOT. EOF ( )
        PAP = LTrim (prumber)
        IF PAP = 0
        SKIP Loop
        ENDIF
        IF SIL > = 1
        PPAGE = PPAGE + 1
@ SIL + 1, 40 SAY "ABAJI AREA COUNCIL"
@ SIL + 2, 42 SAY "PAYROLL OUTPUT FORM"
@ SIL + 2, 50 SAY "PAGE"
@ SIL + 2, 55 SAY "PPAGE"
@ SIL + 3, 35 SAY "DATE OF PRINTING"
@ SIL + 3, 52 SAY "DATE ( )
@ SIL + 4, 5 SAY "P|NO"
@ SIL + 4, 12 SAY "NAME"
@ SIL + 4, 35 SAY "DEPT"
@ SIL + 4, 55 SAY "LEVEL"
@ SIL + 4, 60 SAY "STEP"
@ SIL + 4, 66 SAY "SALARY"
@ SIL + 4, 74 SAY "TOTAL. DED"
@ SIL + 4, 86 SAY "TOTAL. ALL."
@ SIL + 4, 94 SAY "TAX"
@ SIL + 4, 105 SAY "NET PAY"
@ SIL + 5, 5 SAY RULEEQUAL
        ENDIF
@ SIL + 6, 5 SAY PNO
@ SIL + 6, 12 SAY NAME
@ SIL + 6, 35 SAY DEPT
@ SIL + 6, 55 SAY LEVEL
@ SIL + 6, 60 SAY STEP
@ SIL + 6, 66 SAY SLARY
```

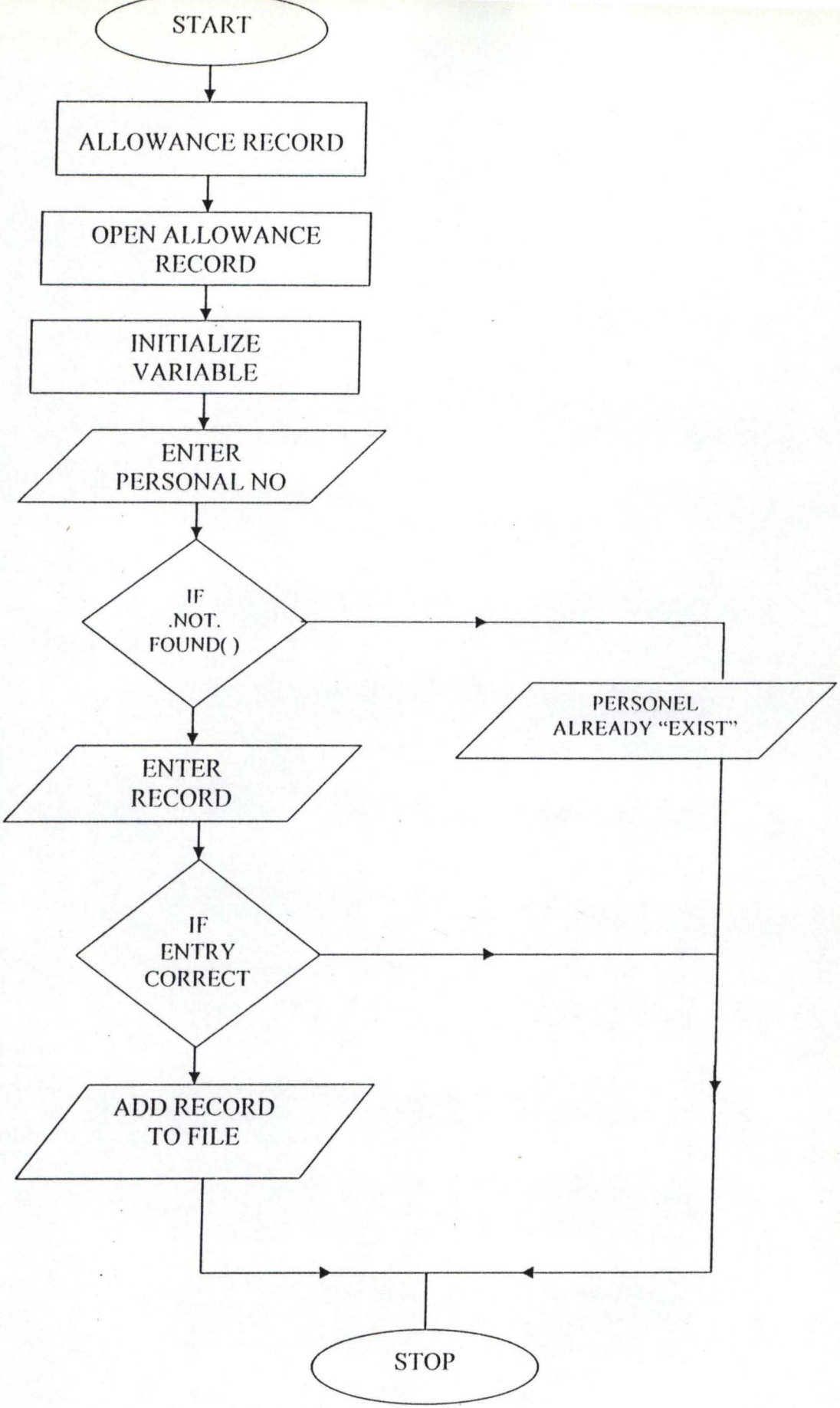
```
@ SIL + 6, 74 SAY TIITDED
@ SIL + 6, 86 SAY TOTALL
@ SIL + 6, 94 SAY TAX
@ SIL + 6, 105 SAY NETPAY
        NETOL = NETOL + NET PAY
        NETAX = NETAX + TAX
        NETSAL = NETSAL + SALARY
        NETTOD = NETTOD + TOTDED
        NETALL = NETALL + TOTALL
SKIP
ENDDO
 @ SIL + 25 5 SAY RULE EQUAL
@ SIL + 25, 66 SAY NETSAL
@ SIL + 25, 74 SAY NETTOD
@ SIL + 25, 86 SAY NETAL
@ SIL + 25, 94 SAY NETAX
@ SIL + 25, 105 SAY NETOL
CLOSE DATABASES
CLOSE ALL
SET PRINTER OFF
SET DENCE TO SCREEN
EJECT
CLEAR
WAIT
CLEAR
RETURN
```


START
LOANS RECORD
OPEN LOANS RECORD
INITIALIZE VARIABLES
ENTER PERSONEL NO
IF .NOT. FOUND( )
PERSONEL ALREADY "EXIST"
ENTER RECORD
IF ENTRY CORRECT
ADD RECORD TO FILE
STOP

```
*** PROGRAM LOAN ********
* * *AUTHOR SALA Y. * * *
        CLEAR
SET SCORE BOARD OFF
SET STATUS  OFF
SET HEADING OFF
SET ESCAPE   ON
SET SAFETY  ON
SET CENTURY ON
        USE LOAN
        SET INDEX TO PNUM.NDX
        CLEAR
STORE SPACE (20) To mpnumber , mloanature, mconfirmed
STORE O TO mapplied, mapproved,
STORE C TO D (" /  / ") TO mloandate
@ 1, 5 to 22, 68 Double
@ 3, 27 SAY "LOAN RECORDS" Color/ wt
@ 4, 26 SAY "ABAJI AREA COUNCIL" COLOR /wt
@ 6, 25 TO 8, 40  SAY "ADD NEW RECORDS" COLOR G+/ w
@ 9, 10 SAY "ENTER PERSONEL  NO.....ESC TO EXIT" COLOR/wt
@  9, 31  GET  mpnumber  PICT  "!!!!!!' color BG+/B
MESSAGE  "ENTER  PERSONEL  NUMBER"
        READ
        SET MESSAGE TO
        Mlastkey =lastkey()
        1F mLastkey() =27
        Clear
        Exit
        Endif
        Seek mpnumber
        If Found( )
        ?? CHR(7)
```

```
@ 10, 10 SAY "THIS PERSONNEL  ALREADY EXIST"
@ 12, 12 SAY "PRESS ANY KEY TO CONTINUE"
      X = INKEY(0)
      CLEAR
      LOOP
      ENDIF
* * ENTER RECORDS * * * * *
@ 9, 10 CLEAR TO 10, 67
@ 9, 6 SAY "PERSONNEL NUMBER" COLOR BG+/B
@ 9, 22 SAY mpnumber Pict "!!!!!!" color /w+
@ 10, 6 SAY "Loan Date" COLOR BG+/B
@ 10, 15  GET mloandate Pict "99\99\9999" color /w+
@ 11,6 SAY " Amount Applied For"  BGT /B
@ 11,24 GET mapplied Pict "999,999.99" color /w+
@ 12, 6 say "AMOUNT APPROVED"  COLOR BG+ /B
@ 12,22 GET mapproved Pict "999,999.99" color /w+
@ 13,6 SAY "Approve date" COLORBG+/ B
@ 13,18 GET mappdate PICT "99\99\9999" color /w+
@14, 6 say "NATURE OF THE LOAN" color BG+ /B
@ 14,23 GET mLoanature PICT "!!!!!!!!!!!!!!!" color / w+
@ 15, 6 SAY "confirmation" Color  BG+/B
@ 15,17 GET mconfirmation PICT "!!!!!!!!!!!!!!!!!" Color /Wt
@ 23,29  SAY "IS ENTERY CORRECT (Y\N)" COLOR  BG+ /B
@ 23, 51 GET mChoice PICT "@!AX";
     VALID MCHOICE = "Y". OR. MCHOICE = "N";
     ERROR "CHOICE MUST BE Y OR N"
     READ
     IF MCHOICE = "N"
     CLEAR
     LOOP
     ENDIF
     APPEND BLANK
```

```
PLACE PNUMBER WITH MPNUMBER
PLACE LOANDATE WITH MLOANDATE
PLACE APPLIED WITH MAPPLIED
PLACE APPROVED WITH MAPPROVED
PLACE APPDATE WITH MAPPDATE
PLACE LOANNATURE WITH MLOANATURE
PLACE CONFIRMED WITH MCONFIRMED
    CLEAR
    LOOP
    ENDIF
    CLEAR
    CLOSE ALL
    @ 10, 20 TO 22, 68 DOUBLE
    RETURN
```


START
ALLOWANCE RECORD
OPEN ALLOWANCE RECORD
INITIALIZE VARIABLE
ENTER PERSONAL NO
IF .NOT. FOUND( )
PERSONEL ALREADY "EXIST"
ENTER RECORD
IF ENTRY CORRECT
ADD RECORD TO FILE
STOP

```
*** PROGRAM ALLOWANCE ********
 * *AUTHOR SALA Y. * * *
       CLEAR
ET SCORE BOARD OFF
ET STATUS OFF
ET HEADING OFF
ET ESCAPE ON
ET SAFETY OFF
ET ESCAPE ON
ET CENTURY ON
       USE ALLOWANCE
       SET INDEX TO PNUM.NDX
       CLEAR
TORE SPACE (10 ) TO Prumber
TORE SPACE 0 To mpall, mhousall, mleaveall, mentall, mutilityall,
TORE O TO marr_itou, Mar_TP, movertime, marears.
@ 1, 5 to 22, 68 Double
@ 3, 27 SAY "ALLOWANCE RECORD" COLOR |W+
@ 4, 26 SAY "ABAJI AREA COUNCIL" COLOR |W+
@ 6, 25 TO 8, 40 SAY "ADD NEW RECORD" COLOR BG+*|W
@ 9, 10 SAY "ENTER PERSONEL NO OR ESC TO EXIT" COLOR |W+
@ 9, 31 GET mpnumber PICT "!!!!!!'  COLOR BG+|W
ESSAGE "ENTER PERSONEL NUMBER"
      READ
      SET MESSAGE TO
      Mlastkey =lastkey ()
       1F Lastkey () =27
      Clear
      Exit
      Endif
      Seek mpnumber
```

```
        If Found ( )
        ?? CHR (7)
@ 10, 10 SAY "THIS PERSONNEL ALREADY EXIST"
@ 12, 12 SAY "PRESS ANY KEY TO CONTINUE"
        X = INKEY (0)
        CLEAR
        LOOP
        ENDIF
* * * ENTER RECORDS NOW * * * * *
@ 9, 10 CLEAR TO 10, 67
@ 9, 6 SAY "PERSONNEL NUMBER" COLOR BG+|B
@ 9, 22 SAY pnumber Pict "!!!!!!" color w+
@ 10, 6 SAY "TRANSPORT ALLOWANCE" COLOR BG+/B
@ 10, 22 GET MTall Pict "999, 999. 99" color |w+
@ 11, 6 SAY "HOUSE ALLOWANCE" COLOR BG+|B
@ 11, 22 GET MHouall Pict "999,999.99" color |w+
@ 12, 6 say "LEAVE ALLOWANCE" COLOR BG+|B
@ 12, 22 GET MLEAVEALL PICT "999, 999. 99" color|W+
@ 13, 6 SAY "ENTATAINMENT ALLOWANCE" COLORBG+|B
@ 14, 25 GET MENTALL PICT "999, 999.99" color |w+
@15, 6 SAY "UTILITY ALLOWANCE" color BG+|B
@ 15, 23 GET MUTILITYAL PICT "999, 999. 99" color | w+
@ 16, 6 SAY "HOUSING AREARS" ColorBG|B
@ 16, 23 GET MARR_ ITOU PICT "999, 999. 99" Color|Wt
@ 17, 6 SAY "TRNSPORT AREARS" COLOR BG|B
@ 17, 26 GET MARR_TP PICT "999, 999. 99" COLOR |W+
@ 18, 6 SAY "OVER TIME" COLOR BG|B
@ 18, 25 GET MOVERTIME PICT "999, 999. 99" COLOR| W+
@ 19, 6 SAY "OTHER AREARS" COLOR BG+|B
@ 19, 20 GET Marrears PICT "999, 999. 99" color |w+
@ 23, 29 "IS ENTRY CORRECT (Y/N)" COLOR BG+/W
@ 23, 51 GET MCHOICE PICT "@! AX";
```

```
    VALID MCHOICE = "Y". OR. MCHOICE = "N";
    ERROR "CHOICE MUST BE Y OR N";
    READ
    IF MCHOICE = "N"
    CLEAR
    LOOP
    ENDIF
    APPEND BLANK
REPLACE PNUMBER WITH MPNUMBER
REPLACE TPALL WITH MTPALL
REPLACE HOUSALL WITH MHOUSALL
REPLACE LEAVEALL WITH MLEAVEALL
REPLACE ENTALL WITH MENTALL
REPLACE UTILYAL WITH MUTILITYAL
REPLACE ARR-HOU WITH MARR-HOU
REPLACE arr _TP WITH marr_TP.
REPLACE OVERTIME WITH MOVERTINE
REPLACE arrears with marrears
    CLEAR
    LOOP
    ENDDO
    CLEAR
    CLOSE ALL
    @ 10, 20 TO 22, 68 DOUBLE
    RETURN
```

```
**** PROGRAM PRESENT ********
* * *AUTHOR SALA Y. * * *
        CLEAR
SET SCORE BOARD OFF
SET SAFETY OFF
SET ESCAPE ON
SET STATUS OFF
SET HEADING OFF
SET CENTURY ON
        USE PRESENT
        SET INDEX TO PNUM.NDX
        CLEAR
        DO WHILE. T.
STORE SPACE (25) To mpnumber,mfirstapp, mmode,mptpost
STORE O TO mstartlevel, mstartstep,mptstep,mptgl, mptpost, mchoice
STORE C TO D (" /  / ") TO mdapp
@ 1, 5 to 22, 68 Double
@ 3, 27 SAY "PRESENT RECORDS" COLOR W+/BG
@ 4, 26 SAY "ABAJI AREA COUNCIL" COLOR W+/BG
@ 6, 25 TO 8, 40 DOUBLE COLOR G+
@ 9, 10 SAY "ADD NEW RECORD "COLOR W+*/ BG
@ 9, 10 SAY "ENTER PERSONEL  NO....ESC TO EXIT" COLOR BG+/B
@  9, 42  GET  mpnumber  "!!!!!!' ;
MESSAGE  "ENTER  PERSONEL  NO"
        READ
        SET MESSAGE TO
        Mlastkey =lastkey()
        1F Lastkey() =27
        Clear
        Exit
        Endif
        Seek mpnumber
```

```
        If Found( )
        ?? CHR(7)
@ 10, 10 SAY "THIS PERSONNEL  ALREADY EXIST"
@ 12, 12 SAY "PRESS ANY KEY TO CONTINUE"
        X = INKEY(0)
        CLEAR
        LOOP
        ENDIF
* * * ENTER RECORDS NOW * * *
@ 9, 10 CLEAR TO 10, 67
@ 9, 6 SAY "PERSONNEL NUMBER" COLOR BG+/B
@ 9, 15 SAY mpnumber Pict "!!!!!!" color w+
@ 10, 6 SAY "FIRST APPOINTMENT" COLOR BG+/B
@ 10, 20  GET mfirstapp Pict "!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!" color /w+
@ 10, 52 SAY " DATE OF APPOINTMENT" COLOR /W+
@ 10, 64 GET mapp Pict "99/99/9999" color /w+
@ 11, 6 say "MODE OF APPOINTMENT" COLOR /W+
@ 11, 19 GET mmode Pict "!!!!!!!!!!!!!!!!!!!!!!!" color /w+
@ 11, 40 SAY "STARTING LEVEL" COLOR/ W+
@ 11, 50 GET msartlevel PICT "999" color /w+
@12, 6 say "STARTING STEP" color /w+
@ 12, 15 GET mstartstep PICT "99" color / w+
@ 12, 22 SAY "PRESENT POST" Color/W+
@ 12, 35 GET mptpost PICT "!!!!!!!!!!!!!!!!!" Color /Wt
@ 13, 6 SAY "PRESENT STEP" COLOR /W+
@ 13, 13 GET mptstep PICT "99" COLOR /W+
@ 13, 40 SAY "PRESENT GRADE LEVEL" COLOR / W+
@ 13, 55 GET mptgl PICT "99" COLOR/ W+
@ 21, 29 SAY "IS ENTRY CORRECT (Y/|N)" COLOR BG+|B
@ 21, 5 GET MCHOICE PICT "@!AX";
        VALID MCHOICE = "Y". OR. MCHOICE = "N";
        ERROR "CHOICE MUST BE Y OR N"
```