COMPUTERIZED PERSONNEL INFORMATION MANAGEMENT SYSTEM (A CASE STUDY OF NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT, MINNA).

BY

ADETONA ABRAHAM ADESINA
PGD/MCS/075/93

DEPARTMENT OF MATHS/COMPUTER SCIENCE
FEDERAL UNIVERSITY OF TECHNOLOGY
MINNA.

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A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE POST-GRADUATE DIPLOMA IN COMPUTER SCIENCE.

MARCH, *1998.*

CERTIFICATION

Having read through this project carried out by Mr Adetona Adesina, It is our opinion that it is up to the standard for Postgraduate Diploma in Computer Science.

PRINCE R. BADMUS **Date**
PROJECT SUPERVISOR

DR. K.R. ADEBOYE **Date**
HEAD OF DEPARTMENT

EXTERNAL EXAMINER **Date**

DEDICATION

This Project work is dedicated to my Mother, Mrs Felicia Abeke Adetona, my wife, Mrs Ayoola Esther Adetona and my son Adeolu Daniel Adetona.

ACKNOWLEDGEMENT

First and foremost, I wish to give my Special gratitude to Almighty God for his love, guidance and protection. I owe him everything I may be in this wonderful world.

Many thanks to my able Supervisor, PRINCE R.O. Badmus, who indeed is a man of high honour, intellect and above all very committed to a good cause. His assistance, cooperation, devotion, guidance, painstaking supervision and support has always been the strongest reason for the successful completion of this project and the course itself. I say thank you sir.

To the Head of Department, DR. K.R. Adeboye, I salute your courage, concern and direction throughout the duration of the programme. To all other lecturers and staff in the Maths/Computer Science, I am indeed grateful.

To my wife, Mrs Ayoola Adetona, you are a woman in a million. Your encouragement during the course was like a motivating factor that made me sail through the programme and I must not fail to acknowledge your understanding, love and moral support all of which are instrumental to the successful accomplishment of this course of study.

I must not omit to register my profound appreciation to Miss Folashade Aransiola who assisted in typing the manuscripts several times, without complaining and for doing a marvelous job.

ABSTRACTS

The National Board for Educational Measurement has been operating a manual system of storing and retrieving data. With the existing manual system, records of individual staff are kept in individual file based on staff personal file number as a key in the central location.

There has been too many bottlenecks in the storage and retrieval of stored information. There has also been the problem of missing files. Hence, the need for an efficient and effective means of generating information.

The project tends to design a more viable and reliable Computerized System through which the establishment will be able to achieve a good personnel record which is important for management decisions.

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CHAPTER ONE

1.1 INTRODUCTION

In an organization, files are set up to centralize information. They are organised in such a way that personnel can refer to the required information without hunting for it in a "hap-hazard" manner.

Personnel Information Management System is a collection or set of elements put together to generate various personnel Information for an organization's management needs in policy and management decision-making.

Different organisations have different personnel information requirement. This project focusses more on the personnel information requirement of the National Board for Educational Measurement. It centres on the storage of staff data and the transformation of the data into information that is useful to the management and any other individual that may require such information.

The present system employs the use of traditional means, that is, the use of plain file jackets to store needed staff data. This system is rather very slow and create problems which often makes information generated from such slow process rather unreliable.

Indeed, generating the required information is one thing, the right timing of producing the needed information is another. The computer is fast and can handle large amount of data and produce reports in a matter of seconds.

1.2 AIMS AND OBJECTIVES OF COMPUETERIZED PERSONNEL INFORMATION MANAGEMENT SYSTEM

The Personnel is responsible for collecting, storing, retrieving and processing validated information concerning the organization. It is geared towards achieving the following:-

(a) Update staff records regularly and promptly.

(b) Protect documents and related information of staff against unauthorised users.

(c) Provide accurate, precise and reliable information about any subject matter within the shortest time possible.

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

(e) Produce staff record promptly at the period of request and need.

(f) To present a case for a subsequent replacement of the current manual processing methods with a computer.

(g) The need to collect, store, analyse and disseminate information of employees at a very fast speed and with a high degree of accuracy, reliability, integrity and security of data/information.

1.3 SCOPE OF THE SYSTEM

The Scope of the Computerized Personnel Information Management System has continued to generate different views from programmers and other users, but for the purpose of this project, the focus of what the system should do is personnel records and the significance of personnel data for use by other departments in the organization.

An ideal computerized personnel information system should hold comprehensive employee records which can be used to generate various information as may be demanded by the establishment.

1.4 DEFINITION OF TERMS

(a) **Information System:-** This is defined as a collection of people, procedures and equipment designed, built, operated and maintained to collect records, process, store, retrieve and display of information.

(b) **A file** is a collection of related records.

(c) **Data** are the raw facts that have been collected and stored but not organised into meaningful form and are fed into the computer for processing.

(d) **Information** is data that have been processed into a form that is useful to the user.

1.5 BASIC REQUIREMENTS OF THE COMPUTERIZED PERSONNEL INFORMATION MANAGEMENT SYSTEM

For any system to be effective it must meet a number of basic requirements. However, for the purpose of this project, these requirements will include:-

(1) It must be an on line system

(2) It must provide adequate data security

(3) The new system must be flexible

(4) The system must be easy to use

(5) The system must provide an effective report generator

(6) The data must be easily accessible

Based on the above requirements the question arises as to what is the BEST Approach? Indeed, for any Information management system, the best approach is one which is most appropriate for a particular organization. This can best be determined by the following:

(1) The current state of the system development in the organization

(2) The organization's structure

(3) The nature of the organization.

1.6 METHODOLOGY

There are various fact-finding techniques. This include, observation, questionnaire, Interviewing, record inspection and reports.

For the purpose of this project, the Paticipant Observation, interviewing and record inspection were used. This was due to the fact that the researcher has been much involved in the staff matters as the job demands. Also, the number of staff interviewed were few and are all in the same establishment and could easily be contacted or were accessible for the requirements of the project work.

It may however be necessary to highlight the benefits derivable from the choice of some of these research methods. To this end, the participant observation and the Interview methods are examined and discussed below:

1. **Participant Observation**

As a means of gathering data, participant observation has a long history as a social research/survey method. It has been used by researchers with widely differing theoretical perspectives. As such it is a research techniques which has been adopted to meet the requirements of researchers with various views on the nature of social reality. The participant observer joins the everyday routines of those he wishes to study. He wishes to observe action in its 'normal', 'natural' context. Thus he may join a group of workers in a factory or a teenage gang on the streetcorner, he may also spend time with patients in a mental hospital.

Supporters of participant observation have argued that, compared to other research techniques, it has among others the following advantages:

(i) It is least likely to lead to the researcher imposing his reality on the social world he seeks to understand. It thus provides the best means of obtaining a valid picture of social reality.

(ii) The value of participant observation also lies in the ability of the technique in providing useful insight which can then be tested on larger samples.

(iii) The participant observation method provides a 'clear, firsthand picture' of the event, group or institution under investigation.

(iv) By observing what was said and done, where, when and by whom, it is possible to discover how a group, event or institution saw and organise things including their lives. Taking this inside view makes it easier to avoid structuring the material in ways that might be alien to the material itself.

2. Interviews

Interviews are one of the most widely used methods of gathering data in research. They consist of the researcher asking the interviewee or respondent a series of questions. Interviews can be classified as 'structured' or 'unstructured' though many fall somewhere between these two extremes. In a structured interview, the wording of the questions and the order in which they are asked remains the same in every case. The result is a fairly formal question and answer session. On the other hand, unstructured interviews are more like an informal conversation. The interviewer usually has particular topics in mind to cover but far if any pre-set questions.

On the whole, interviews and particularly structured interviews have the following advantages:

(i) They guarantee easily quantifiable answers.

(ii) The planned questions of structured interviews have direct bearing on the research, and

(iii) The presence of the interviewer enables him to observe the respondent and his surroundings.

CHAPTER TWO

BRIEF ON THE NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT (NBEM) MINNA.

In view of the fact that the National Board for Educational Measurement (NBEM) is the case study for this project, it is considered imperative and worthwhile to acquaint every reader of this work with a brief background information regarding the establishment. Such will include an enumeration of the objectives and functions of the Board, the organization of the Board as well as an out-line of its departmental functions.

2.1 ESTABLISHMENT OF THE BOARD

The National Board for Educational Measurement (NBEM) came into existence in May, 1992, following the scrapping of the Centre for Educational Measurement (CEM), Kaduna, a unit under the Accreditation and Certification Division of the Federal Ministry of Education & Youth Development. The Board commenced operations in Kaduna after absorbing willing staff of the defunct Centre for Educational Measurement (CEM) and inheriting its assets and liabilities.

By August 1992, the Board, on a directive from the Federal Ministry of Education commenced a phased movement to Minna, Niger State. This movement was concluded in December 1992. Today, the National Board for Educational Measurement (NBEM) is fully operational in Minna, the capital city of Niger State.

Even though the Board became functional in May 1992, it became a corporate entity following the promulgation of Decree No. 69 of 23rd August, 1993. By the provisions of Decree No. 69, the Board is vested with powers to carry out various educational activities. In other words, the Decree has spelt out objectives and functions of the Board. These are contained in section 3 (1 - 2) (a - k).

2.2 OBJECTIVES AND FUNCTIONS OF THE BOARD:

The Board established under Decree No. 69 of August 1993 has among other things the following objectives:

(a) Establishing and maintaining standards at Junior Secondary School (JSS) level in the areas of measurement and evaluation particularly in Federal Government Colleges and allied institutions;

(b) Providing professional leadership for state Ministries of Education in matters relating to test development and administration at Junior Secondary School (JSS) level;

(c) Monitoring Continuous Assessment practice in schools and ensuring conformity with set standards; and

(d) Working towards over all improvement of educational standards at the Junior Secondary School (JSS) level nationwide.

2.3 THE FUNCTIONS OF THE BOARD:

Section 3 (1 - 2) of Decree No. 69 of 23rd August 1993, stipulates the following as functions of the Board:-

(a) The general control of the conduct of the Junior School Certificate Examinations (JSCE) in all Federal Colleges and allied institutions;

(b) The general control and conduct of the National Common Entrance Examination (NCEE) for admission into Federal Government Colleges;

(c) The development and administration of selection examinations into Suleja Academy in accordance with such guidelines as may be approved from time to time;

(d) The development, administration and the conduct of aptitude tests for all candidates in Federal Government Colleges and allied institutions under its jurisdictions;

(e) Monitoring, collecting and keeping records of continuous assessment in all Federal Government Colleges and allied institutions towards the award of Junior School Certificate (JSC);

(f) The conduct of a standard National Assessment of Educational performance at the Junior Secondary School level;

(g) The conduct of action researches leading to national improvement of testing and examination procedures at Junior Secondary School (JSS) level;

(h) The collection and dissemination of information on all matters relating to admission into Federal Government Colleges, and other allied institutions or any other matter relevant to the discharge of the functions of the Board under this Decree;

(i) The preparation and submission to the Secretary (Minister), the annual report on standards of examinations and other related matters;

(j) Carrying out such other activities as are expedient for the discharge of all or any of the functions conferred on the Board under or pursuant to the Decree; and

(k) Carrying out of such other activities as may be directed by the Secretary (Minister).

For the avoidance of doubt, the Board shall also be responsible for the conduct of aptitude tests for screening purposes.

2.4 THE ORGANIZATION OF THE BOARD:

In order to achieve the set goals and objectives and ensure efficiency, the National Board for Educational Measurement (NBEM) has been structured into five (5) Departments.

The Departments are:-

(i) Finance and Supplies Department;

(ii) Planning, Research and Statistics Department;

(iii) General Administration Department and

(iv) Examinations Administration Department.

Apart from the five Departments, the office of the Registrar and Chief Executive controls several units and wields to a large extent, the powers of the Governing Council which is yet to be constituted. The units under the Registrar include:-

(i) Public Relations Unit;

(ii) Audit Unit (internal);

(iii) Legal Unit;

(iv) Computer;

(v) Tenders

(vi) Zonal Offices

(vii) Consultancy and

(viii) Data Control

2.5 OUT-LINE OF DEPARTMENTAL FUNCTIONS

1. Finance and Supplies Department

(i) Salaries wages

(ii) Other charges (overheads)

(iii) Cash office

(iv) Stores

(v) Budget

(vi) Gratuity and Pensions

2. **Planning, Research and Statistics Department**

(i) Physical planning and Development

(ii) Statistics and records

(iii) Research

(iv) Transport

(v) Capital Estimates

(vi) Library

(vii) Publications

(viii) Board of survey

(ix) Maintenance

(x) Security

3. **General Administration Department**

(i) Appointments

(ii) promotions

(iii) Discipline

(iv) Staff welfare and training

(v) Staff Records (Registry)

(vi) Gardeners and Cleaners

(vii) Guest Houses

(viii) Fuel Depot

(ix) Housing

(x) Staff School

4. **Examination Administration Department**

(i) Planning and administration of the following

(a) - National Common Entrance Examinations

(b) - Junior School Certificate Examinations

(c) - Aptitude tests

(d) - Gifted Children Screening Examinations

(ii) Printing and distribution of Examination materials

(iii) Conduct and monitoring of examinations

(iv) Marking of Answer Scripts

(v) Release of results

(vi) Rectification of anomalies in released results

(vii) Investigation of examination malpractices

(viii) Admissions

(ix) State Examinations

(x) Affiliation of new Schools for the JSCE

5. **Test Development Department**

(i) Generation, editing, trial testing and moderation of test items for the following

(a) - National Common Entrance Examinations

(b) - Junior School Certificate Examinations

(c) - Aptitude tests

(d) - Gifted Children Screening Examinations

(ii) Quality Control of test items

(iii) Item Banking

(iv) Monitoring of Continuous Assessment in Schools

(v) National Assessment of Educational Performance.

Figure 1 shows the structure of the Board. It also depicts relationship and chain of command. As earlier noted, the Registrar who is also the Chief Executive has in addition, responsibility for over all policy direction and day to day running of the Board.

2.7 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 National Board for Educational Measurement.

(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.

2.8 THE PRESENT SYSTEM

Like every other conventional system, the present filing 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 the required file is seen, the

relevant document needed might not be in it again.

Data Processing:- In view of the way in which data is stored and retrieved, this aspect could be very 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.

2.9 THE COMPUTERIZED SYSTEM

In enhancing operational efficiency and effectiveness of the present manual system with a view to satisfy the growing need of 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 security.

The computerization of Personnel information management system of the National Board for Educational Measurement is therefore aimed specifically at eliminating the problems encountered in using the manual system.

2.10 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.

(d) the manual system of records keeping is very ineffective, inefficient and unreliable.

2.11 BENEFITS OF COMPUTERIZATION

With full computerization of the personnel department, the following benefits will be derived:

(1) Better management information

(2) Better staff relations because of the ability to update records more quickly.

(3) Less pressure and more rewarding work within the department.

(4) Better service to the management.

(5) Compared to the manual system, the automated system is considerably less expensive.

2.12 FUNCTIONS OF PERSONNEL MANAGEMENT

Personnel Management has been defined by Edwin Flippo as the planning, organising, directing and controlling of the procurement, development, compensation, integration, maintenance and separation of human resources to the end that individual, organizational and societal objectives are accomplished.

The functions of Personnel Management can be grouped into the following broad operational headings

1. **Recruitment, selection and placement**
   - (i) Confirmation of vacancies
   - (ii) Job prescription
   - (iii) Personnel specification
   - (iv) Advertisement
   - (v) Application
   - (vi) Short-listing
   - (vii) Interviewing candidates for employment
   - (viii) Testing candidates for employment
   - (ix) Selecting the right candidates
   - (x) Induction
2. **Staff Training and Development**
   - (i) Identification of training needs
   - (ii) Manpower planning
   - (iii) Evaluation

(iv) Appraisal

(v) Promotion

(vi) Succession plan

(vii) Confirmation of appointment

(viii) Workshops, Seminars and Conference attendance

(ix) Study leave

3. **Compensation and Renumeration**

(i) Wages and salary administration

(ii) Salary scale and fringe benefit survey

(iii) Job description and Job Analysis

(iv) Job evaluation and Job enrichment

(v) Share of Ownership

(vi) Productivity pay

(vii) Over-time pay

(viii) Profit sharing

4. **Auxilliary/Welfare Activities (Benefits)**

(i) Medical

(ii) Safety measures

(iii) Holidays, casual and maternity leave

(iv) Penson and Gratuity plans

(v) Loans and Salary Advances

(vi) Staff Canteen or Club

(vii) Uniform and protective clothing

5. **Industrial Relations**

(i) Condition of service scheme

(ii) Relationship with trade union

(iii) Relationship with the ministry of labour

(iv) Knowledge of relevant labour laws

(v) Collective bargaining and Counselling

6. **Disciplinary Measures**

(i) Queries and warnings

(ii) Demotion and suspension

(iii) Termination of appointment

7. **Staff Records and Statistics**

(i) Staff Reference Records (files)

(ii) Attendance Records

(iii) Staff Statistics

8. **Salvage Operations**

(i) Redundancy

(ii) Rationalization of manpower

(iii) Re-allignment of functions

9. **Personnel Polices and Planning**

(i) Forecasting manpower needs

(ii) Defining organisational goals

(iii) Policy guidelines and strategies

(iv) Ensuring adherence to Company goals

10. **Administration**

(i) Communication Panels

(ii) Company Newsletter/Magazines

(iii) Company's secretarial services

(iv) Advice on management style

(v) Management of change

(vi) Company's sanitation

11. **Forecasting:-** This has to do with the intelligent appraisal of company's business to aid decision in future projects.

12. **Budgetting:-** Supply of budget material to aid corporate budgetting.

13. Research on motivational factors, workers' behavior, group influence/pressure, attitudinal factor and work ethics.

It is therefore, desirable that those who make decisions with enormous consequences for resources (Human and material) allocation and the welfare of the staff should avail themselves of modern theories, ideas and techniques of data management.

2.13 PERSONNEL INFORMATION MANAGEMENT RECORDS

The following records will form the integral parts of personnel information management system for more efficient management support.

(1) **Employee Records:-** This will contain all relevant personal data of the staff in the organization.

(2) **Training Records:-** This will contain data relating to the employee's skills and experience, qualification and other relevant information about courses, seminars, conferences/workshops attended.

(3) **Establishment:-** This relates to the organization's ranking of staff levels and grades.

(4) **Absence:-** This should contain various types of absence such as sick leave, casual or annual leave, study leave etc

(5) **Recruitment:-** The system should hold data of all available vacancies and applicants. The requirements for each vacancy should be clearly indicated.

(6) **Pension Records:-** The system should maintain details of service entitlement, and contributions from both employee and employer to the pension scheme.

2.14 COMPUTER ROLE IN PERSONNEL RECORDS

Computer plays an important role in personnel records. The place of computing in achieving personnel administrative roles cannot be over emphasized. Accordingly, administrative processes can be enriched in many ways because of the scale and range of information provided by computer data bank.

Microcomputers are used by administrators in organisations whereby personnel record can be prepared and stored within the computer in the form of programs which are carefully structured to provide specific information. For example, the computer can be used in arranging

leave and duty roster, to monitor job schedule, to build up and maintain comprehensive personnel records in order to provide a complete staff profile; to assist with manpower planning and staff training and development.

2.15 FEATURES OF COMPUTER

(1) **Speed:-** Computer's internal speed is virtually Instantaneous. It performs work at very high speed. It has the ability to add new data and the adequacy of preservation of documents with maximum speed and minimum assistance.

(2) **Storage:-** The speed of the computer makes it possible to process large quantities of information. With the computer, its storage devices can retain infinite amount of information.

(3) **Accuracy:-** The accuracy of computer is consistently high and seldom leads to false results. Almost without exception, the errors in computing are due to human rather than to technological weakness.

(4) **Diligence:-** A Computer does not suffer from the human traits of tiredness and lack of concentration.

(5) **Versatility:-** Computer seems capable of performing almost any task provided that the task can be reduced to a series of logical steps.

CHAPTER THREE

3.0 SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION:-

System design can be defined as the process of preparing a new set of procedures that will perform the basic operation of a system more efficiently and effectively than current procedures in an organization.

The current Personnel Information Management System was analysed and carefully studied considering these aspects i.e. Data Collection, Storage, processing, retrieval and information emission. The techniques used are:-

1. **Interview :-** Officers in charge of personnel records were asked questions about their operations.
2. **Observation : -** The operation of the existing system in terms of storage, record updating and provision of management information.

3.2 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 misplaced 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 of staff who's 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.

3.3 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 is 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.

3.4 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 is worthwhile.

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

3.5 COST AND BENEFIT ANALYSIS OF THE NEW SYSTEM

This will be shown based on the following:

(a) Development cost

(b) Operating cost

(a)	**Development Cost**	₦	k
1.	System Analysis and Design for 3 weeks	15,000	00
2.	Software development and implementation	10,000	00
3.	3 PCs	240,000	00
4.	Printer, stabilizer	50,000	00
5.	Installation	5,000	00
	Total	320,000	00

OPERATING COST FOR ONE YEAR		₦	K
1.	Supplies ₦1,000 per month for 1 year	12,000	00
2.	Equipment maintenance	6,000	00
3.	Program maintenance	5,000	00
4.	Utilities	2,500	00
5.	Miscellaneous expenses	15,500	00
6.	Labour cost (3 operators) at ₦2,000per month for 1 year	72,000	00
	Total	113,000	00

Overall cost = ₦320,000 + 113,000

=₦433,000.00

SYSTEM BENEFITS

The benefits to be deprived include:

(a) Better management information

(b) Data security

(c) Minimal error rate in output

(d) Easy storage, retrieval and access to data

(e) Improved efficiency resulting from elimination of duplication and time wasting.

3.6 SYSTEM DESIGN

(i) INPUT SPECIFICATION

This refers to the act of feeding the computer with the necessary data for processing. Input here are the personal data collected from the newly recruited/employed staff. Data here are collected through the use of personal data form. The form contains all the required details about staff and the required information are sequentially arranged. Information gathered are entered into the system and modification can be done regularly as the required information is made available.

SPECIMEN OF INPUT FORM FOR PERSONNEL DATA

(1) SURNAME

(2) OTHER NAMES

(3) PERSONNEL FILE NUMBER

(4) DEPARTMENT

(5) HOME TOWN

(6) L.G.A

(7) STATE OF ORIGIN

(8) NATIONALITY

(9) DATE OF BIRTH

(10) QUALIFICATION

(11) DATE ASSUMED DUTY

(12) DUE DATE FOR PROMOTION

(13) MARITAL STATUS

(14) NO OF WIVE(S)

(15) NO OF CHILDREN

(16) DUE DATE FOR LEAVE

(17) SALARY PER ANNUM

(18) NEXT OF KIN

(19) LAST OCCUPATION

(ii) OUTPUT SPECIFICATION

One of the important features of an information system is the output it produces. The output is essentially about form, types, volumes and frequency of reports and documents to be generated.

There are two major forms in which the report will be produced namely:

(a) On the Screen and

(b) Printed Report (hard copy)

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 effectively and efficiently. Indeed, all aspects of the system was 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 VI programming language was used. It is an, 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

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

(2) **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 they are shared by all the users.

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

(4) **Facilities to add new, delete and ammend records:-** When new sets of data are added, it is often found that some of the required data are 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.

(5) **Data are centrally controlled:-** In a Dbase environment, data and operations on data are centrally controlled and this can lead to better management of data by enforcing standards for all the users.

4.4 WORKSTATION REQUIREMENT

The system is designed to run on the personal computer.

HARDWARE REQUIREMENT

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 harddisk 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 of 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 of changeover procedures:-

(1) **Parallel method:-** Here the old and new systems are run concurrently, using the same inputs. The outputs are compared and reasons for differences 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 a 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 piece 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 others. Only when that subsystem is completely operational can conversion of the next system be considered.

4.6 STARTING THE SYSTEM

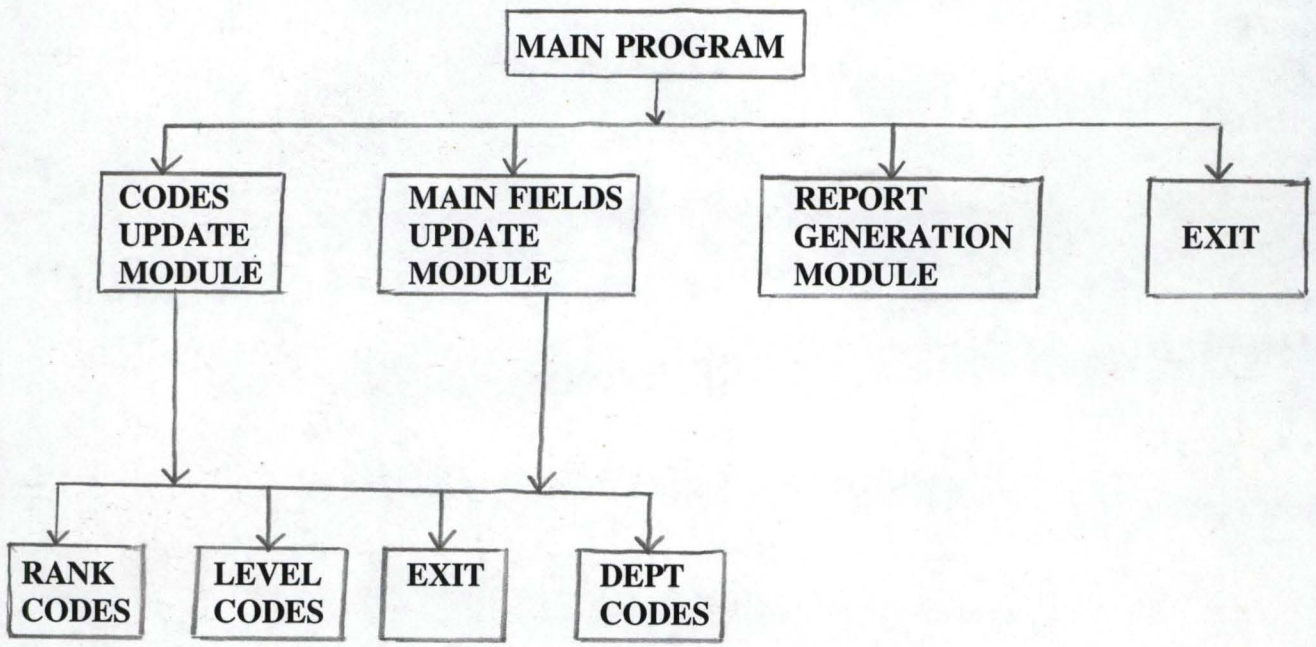
The personnel system was designed such that the main program can call the other sub-programs.

To start the program, the user has to type in "PERSON.PRG". On typing this, it will call the main program from where other programs could be called.

4.7 FILE MENU STRUCTURE

The program is such that it is modularized that is, the main program calls any of the three subprograms, which on the other hand calls the preceeding ones.

The Top-Down approach used is shown thus:-



The codes module is used to update and ammend the various codes, while the fields update module is to add, edit, delete the various records of staff in the organisation.

Hence, the report module prints out the records chosen on paper.

4.8 Exit/Quit Mode

This is to terminate the work on the program when the user has finished it. This module once chosen, terminates the work and the user is taken to the Dot prompt and finally leaves or close the program.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION & RECOMMENDATIONS

5.1 SUMMARY

In an effort to convert the existing manual Personnel Management Information System of the National Board for Educational Measurement to a Computerized Personnel Management Information System that will best meet up the objectives of this project, a careful indepth study of the existing System's features and limitation was carried out and the need for the computerization identified.

The study shows that Computerization of personnel record System not only reduces time of manually dealing with non-redundancy of data, it also provides flexibility in storage and retrieval of data, as well as prevents deliberate distortion, missing and destruction of records.

5.2 RECOMMENDATIONS

It is hoped that for future purposes, some of the following aspects could be looked into and suggested for further study

(a) Computerization of previous employment record

(b) Computerization of medical and family record

(c) Computerization of staff recruitment, posting and job assessment and comparing performance between workers amongst others.

Despite the advantage of using this system, there are still other things which can be incorporated within the system. Such include the following:-

(1) The organization can equally go network.

(2) The software can be further modernised using the same language or using any other language in developing such a software to solve problems.

It is therefore strongly recommended that this new method of gathering, storing, manipulating and presenting personnel information be fully developed for use in replacement of the years old widely employed Pen-and Ink antiquated manual method which still account for the bulk of clerical work in the organization and the Nigerian Public Services.

Indeed, the organization has to review its administrative structure with a view to enhancing operational efficiency and the workability for the Computerized System.

The package is hereby recommended for other organisations that are yet to computerize their personnel record System.

5.3 CONCLUSION

The need to overcome problems of the manual way of processing personnel record system cannot be over emphasised. The computerized system of processing personnel record in organisations is undoubtedly the most suitable means by which efficiency is enhanced.

Computer is particularly useful in areas where time, accuracy and work efficiency is considered important. This is because information stored in computer provides the opportunity for others to investigate the progress and standard of the organization.

In conclusion therefore, this project work would remain useful and relevant for its contribution to the knowledge, uses and application of computer. It stands to serve as an invaluable contribution to the development of the growing need for more practical methods and tools to support the software development process in the world.

In computerization of the organization personnel record, the benefits to be derived will be immense, innumerable and the rewards will be immeasurably greater than the manual procedure using pen and Ink as currently being used in the organization.

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APPENDIX A

Program Listings and Screen Layouts

```
*                              PROGRAM LISTING
*
*************************************************************************
*
*APPLICATION   :  COMPUTERIZED PERSONNEL INFORMATION SYSTEM
*
*CASE STUDY    :  NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
*
*FILE NAME     :  PROJECT.PRG
*
*DEVELOPMENT LANGUAGE : DBASE IV
*SUB-PROGRAMS: CODES.PRG, CRTREC.PRG, GENRPT.PRG
*
*************************************************************************
* MAIN PROGRAM BEGINS
*
PRIVATE option
set talk off
set status off
set scoreboard off
set escape on
set confirm on
set date to british
STORE 0 TO OPTION
clear
@ 0,0 to 3,79 double
@ 0,22 say "NATIOAL BOARD FOR EDUCATIONAL MEASUREMENT "
@ 1,24 say "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 4,30 SAY "MAIN MENU"
DO WHILE .T.
   @ 8,25 say "[1]     SYSTEM CODES      "
   @ 9,25 say "[2]     UPDATE RECORD     "
   @10,25 say "[3]     REPORT PROCESSING"
   @11,25 say "[4]     QUIT              "
   @ 15,24 SAY "NAVIGATE TO SELECT AN OPTION" get  OPTION
   read
   DO CASE
      CASE OPTION =1
        DO CODES
      CASE OPTION =2
        DO CRTREC
      CASE OPTION =3
        DO GENRPT
      CASE OPTION =4
        CLEAR
        CLOSE ALL
        EXIT
      OTHERWISE
        LOOP
    ENDCASE
    SET COLOR TO
    CLEAR
    RETURN
ENDDO
* MAIN PROGRAM TERMINATION
```

```
set talk off
set status off
set scoreboard off
set escape on
set confirm on
SET COLOR TO W/B
set date to british
STORE 0 TO OPTION
clear
@ 0,0 to 23,79 double
@ 2,22 say "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
@ 3,24 say "PERSONNEL INFORMATION MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 21,0 TO 21,79
@ 12,2 TO 12,78 DOUBLE
@ 17,2 TO 17,78 DOUBLE
@ 6,2 SAY "STAFF NO:"
@ 6,21 SAY "SURNAME:"
@ 7,2 SAY "OTHER NAMES:"
@ 7,54 SAY "MARITAL STATUS [S/M]:"
@ 8,2 SAY "NO. OF ISSUE:   SEX [M/F]:    STATE OF ORIGIN:"
@ 9,2 SAY "CONTACT ADDRESS:"
@10,2 SAY "QUALIFICATION:"
@10,38 SAY "DEPARTMENT:"
@11,2 SAY "DATE EMPLOYED:"
@11,26 SAY "OFFICIAL POST:"
@11,60 SAY "OLD GRADE LEVEL:"
@13,2 SAY "BASIC SALARY:"
@13,36 SAY "PROMOTED [Y/N]:   PROMOTION DATE:"
@14,2 SAY "HOUSING ALLOWANCE :"
@14,36 SAY "NEW GRADE LEVEL:"
@15,2 SAY "TRANSPORT ALLOWANCE:"
@15,36 SAY "ON LOAN [Y/N]:"
@16,2 SAY "LEAVE ALLOWANCE:"
@16,36 SAY "LOAN TYPE:"
@18,2 SAY "LOAN RATE:"
@18,31 SAY "OUTSTANDING LOAN AMOUNT:"
@19,2 SAY "LEAVE DATE:"
@19,26 SAY "TO"
@19,40 SAY "PENSION AMOUNT :"
@20,2 SAY "BANK NAME:"
@20,40 SAY "ACCOUNT NUMBER:"
SAVE SCREEN TO CRTSCR
SELECT 1
    USE PMASTER
SELECT 2
    USE LEVELCD
SELECT 3
   USE DEPTCD
SELECT 4
   USE RANKED
SELECT 5
   USE EDSTATUS
SELECT 6
   USE BANKCD
STORE SPACE(9) TO MSTAFFNO
DO WHILE .T.
   RESTORE SCREEN FROM CRTSCR
   DO CRTVAR
   STORE ' ' TO ANSD, IDLT
   NEWREC=.T.
```

```
   @22,10 SAY SPACE(60)
   @ 6,11 GET MSTAFFNO
```



```
   READ
   IF MSTAFFNO = SPACE(9)
       ??CHR(7)
       ANSD = 'Y'
       @22,10 SAY 'QUIT PROCEDURE.....? [Y/N]' GET ANSD
       READ
       @22,10 SAY SPACE(60)
       IF UPPER(ANSD)='Y'
          EXIT
       ELSE
          LOOP
       ENDIF
   ENDIF
   SELECT 1
   GO TOP
   LOCATE FOR STAFFNO=MSTAFFNO
   IF FOUND()
      NEWREC = .F.
      DO CRTSTR
      DO CRTSAY
      ?CHR(7)
      @22,10 SAY 'RECORD EXIST, C - CHANGE, D - DELETE, I - IGNORE'
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='D'
        ?CHR(7)
        @22,10 SAY "SURE YOU WANT TO DELETE RECORD....? [Y/N]" GET I
        READ
        @22,10 SAY SPACE(60)
        IF UPPER(IDLT) <> 'Y'
           LOOP
        ENDIF
        SELECT 1
        DELETE
        @22,10 SAY "DO YOU WISH TO DELETE MORE RECORDS..? [Y/N]" GET
        READ
        @22,10 SAY SPACE(60)
        IF UPPER(IDLT)<> 'Y'
            ??CHR(7)
            @22,10 SAY "PLEASE WAIT..!!!"
            SELECT 1
            PACK
            READ
            ??CHR(7)+CHR(7)
            LOOP
        ELSE
            LOOP
        ENDIF
      ENDIF
      IF UPPER(ANSD) <> 'C'
         LOOP
      ENDIF
   ENDIF
   DO CRTGET
   ANSD='Y'
   @22,10 SAY SPACE(69)
   @22,10 SAY "ADD RECORD TO FILES.....?(Y/N)" GET ANSD
   READ
   @22,10 SAY SPACE(69)
```

```
   IF UPPER(ANSD) <> 'Y'
      @22,10 SAY "RECORD NOT ADDED TO FILES...!"
      READ
      @22,10 SAY SPACE(69)
```



```
      LOOP
   ENDIF
   SELECT 1
   IF NEWREC
      APPEND BLANK
      REPLACE STAFFNO WITH MSTAFFNO
   ENDIF
   DO CRTRPL
   @22,10 SAY "RECORD ADDED TO FILES......!"
   READ
ENDDO
CLOSE DATABASES
CLEAR
RETURN
*
************************************************************************
* PROCEDURE FOR CRTREC
************************************************************************
PROCEDURE CRTVAR
*** INITIALIZE VARIABLE
MSTAFFNO=SPACE(9)
MNAME1=SPACE(20)
MNAME2=SPACE(40)
MMSTATUS=SPACE(1)
MISSUENO=00
MSEX=SPACE(1)
MSTATE=SPACE(15)
MADDRESS=SPACE(50)
MEDCODE=SPACE(3)
MDPCODE=SPACE(2)
MEPDATE=CTOD("  /  /  ")
MRCODE=SPACE(3)
MLCODE=SPACE(4)
MBASICAMT=0.00
MPROMOTED=.F.
MDTPROMOTE=CTOD("  /  /  ")
MHOUSING=0.00
MTFARE=0.00
MONLOAN=.F.
MLOANAMT=0.00
MLEAVEAMT=0.00
MLEAVEWK=0
MLOANTYP = SPACE(30)
MLOANRATE=0.00
MLOANCR =0.00
MLEAVEDT = CTOD("  /  /  ")
MPENAMT = 0.00
MBCODE = SPACE(3)
MBANKACCT=SPACE(10)
MEDLEVEL=SPACE(20)
MDEPTDESC=SPACE(20)
MPOSTHELD=SPACE(20)
MGRDLEVEL=SPACE(4)
MBANKNAME=SPACE(20)
RETURN
*
*
```

```
PROCEDURE CRTSTR
** COPY CURRENT VALUES
SELECT 1
MNAME1=NAME1
MNAME2=NAME2
MMSTATUS=MSTATUS

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MISSUENO=ISSUENO
MSEX=SEX
MBASICAMT=BASICAMT
MSTATE=STATE
MADDRESS=ADDRESS
MEPDATE=EPDATE
MPROMOTED=PROMOTED
MDTPROMOTE=DTPROMOTE
MONLOAN=ONLOAN
MLOANAMT=LOANAMT
MLOANTYP = LOANTYP
MLOANRATE=LOANRATE
MLOANCR =LOANCR
MLEAVEDT = LEAVEDT
MLEAVEAMT=LEAVEAMT
MPENAMT = PENAMT
MBANKACCT = BANKACCT
MEDLEVEL=EDLEVEL
MDEPTDESC=DEPTDESC
MPOSTHELD=POSTHELD
MGRDLEVEL=GRDLEVEL
MBANKNAME=BANKNAME

SELECT 2
*SEEK MGRDLEVEL
MBASICAMT=BASICAMT
MHOUSING=HOUSING
MTFARE=TFARE
MLEAVEAMT=LEAVEAMT
MLEAVEWK=LEAVEWK
RETURN
*
*
PROCEDURE CRTSAY
SELECT 2
*SEEK MGRDLEVEL
MBASICAMT=BASICAMT
MHOUSING=HOUSING
MTFARE=TFARE
MLEAVEAMT=LEAVEAMT
MLEAVEWK=LEAVEWK

SELECT 1
MNAME1=NAME1
MNAME2=NAME2
MMSTATUS=MSTATUS
MISSUENO=ISSUENO
MSEX=SEX
MBASICAMT=BASICAMT
MSTATE=STATE
MADDRESS=ADDRESS
MEPDATE=EPDATE
MPROMOTED=PROMOTED
MDTPROMOTE=DTPROMOTE
MONLOAN=ONLOAN
```

```
MLOANAMT=LOANAMT
MLOANTYP = LOANTYP
MLOANRATE=LOANRATE
MLOANCR =LOANCR
MLEAVEDT = LEAVEDT
MLEAVEAMT=LEAVEAMT
MPENAMT = PENAMT
MBANKACCT = BANKACCT

Page #    5

MEDLEVEL=EDLEVEL
MDEPTDESC=DEPTDESC
MPOSTHELD=POSTHELD
MGRDLEVEL=GRDLEVEL
MBANKNAME=BANKNAME


@ 6,32 SAY MNAME1
@ 7,13 SAY MNAME2
@ 7,75 SAY MMSTATUS
@ 8,15 SAY MISSUENO
@ 8,28 SAY MSEX
@ 8,47 SAY MSTATE
@ 9,18 SAY MADDRESS
@10,16 SAY MEDLEVEL
@10,49 SAY MDEPTDESC
@11,16 SAY MEPDATE
@11,40 SAY MPOSTHELD
@11,74 SAY MGRDLEVEL
@13,22 SAY MBASICAMT PICT '999,999,999.99'
@13,52 SAY MPROMOTED
@13,69 SAY MDTPROMOTE
@14,22 SAY MHOUSING PICT '9,999,999.99'
@15,22 SAY MTFARE PICT '9,999,999.99'
@15,52 SAY MONLOAN
@15,62 SAY MLOANAMT PICT '999,999,999.99'
@16,22 SAY MLEAVEAMT PICT '9,999,999.99'
@16,46 SAY MLOANTYP
@18,17 SAY MLOANRATE PICT '99.99'
@18,55 SAY MLOANCR PICT '999,999,999.99'
@19,17 SAY MLEAVEDT
@19,29 SAY MLEAVEDT + (MLEAVEWK*5)
@19,55 SAY MPENAMT
@20,17 SAY MBANKNAME
@20,55 SAY MBANKACCT
RETURN
*

PROCEDURE CRTGET
MNAME1=space(20)
MNAME2=space(40)
mmstatus=space(1)
MSEX=space(1)
MSTATE=space(20)
MADDRESS=space(50)
MISSUENO=00

@ 6,32 GET MNAME1
@ 7,13 GET MNAME2
READ
@ 7,75 GET MMSTATUS
READ
IF UPPER(MMSTATUS)='M'
```

```
  @ 8,15 GET MISSUENO PICT '99'
ENDIF
@ 8,28 GET MSEX
@ 8,47 GET MSTATE
@ 9,18 GET MADDRESS
READ
DO WHILE .T.
   MEDCODE = SPACE(3)
   @ 10,16 GET MEDCODE
   READ
```



```
   IF MEDCODE=SPACE(3)
      EXIT
   ELSE
   SELECT 5
   LOCATE FOR UPPER(EDCODE)=UPPER(MEDCODE)
   IF FOUND()
      MEDLEVEL=EDESC
      @10,16 SAY MEDLEVEL
      ANSD='Y'
      @22,10 SAY SPACE(69)
      @22,10 SAY "CONFIRM QUALIFICATION CERTIFICATE..?(Y/N)" GET ANS
      READ
      @22,10 SAY SPACE(69)
      IF UPPER(ANSD) <> 'Y'
         MEDLEVEL = SPACE(20)
         @22,10 SAY SPACE(69)
         LOOP
      ENDIF
      *EXIT
   ELSE
      LOOP
   ENDIF
DO WHILE .T.
   MDPCODE=SPACE(2)
   @ 10,49 GET MDPCODE
   READ
   IF MDPCODE =SPACE(2)
      EXIT
   ELSE
      SELECT 3
      LOCATE FOR UPPER(DPCODE)= UPPER(MDPCODE)
      IF FOUND()
         MDEPTDESC =DPDESC
         @10,49 SAY MDEPTDESC
         ANSD ='Y'
         @22,10 SAY SPACE(69)
         @22,10 SAY "CONFIRM DEPARTMENT POSTING...? (Y/N)" GET ANSD
         READ
         @22,10 SAY SPACE(69)
         IF UPPER(ANSD)<>'Y'
            MDEPTDESC=SPACE(20)
            @22,10 SAY SPACE(69)
            LOOP
         ENDIF
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
ENDDO
mepdate=ctod("  /  /  ")
```

```
@11,16 GET MEPDATE
READ
DO WHILE .T.
   MRCODE=SPACE(3)
   @11,40 GET MRCODE
   READ
   IF MRCODE=SPACE(3)
      EXIT
   ELSE
      SELECT 4
      LOCATE FOR UPPER(RCODE)=UPPER(MRCODE)
      IF FOUND()
```



```
         MPOSTHELD=RDESC
         @11,40 SAY MPOSTHELD
         ANSD ='Y'
         @22,10 SAY SPACE(69)
         @22,10 SAY "CONFIRM OFFICIAL POST ..?(Y/N)" GET ANSD
         READ
         IF UPPER(ANSD)<>'Y'
            MPOSTHELD=SPACE(20)
            @22,10 SAY SPACE(69)
            LOOP
         ENDIF
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
ENDDO
DO WHILE .T.
   MLCODE=SPACE(4)
   @11,74 GET MLCODE
   READ
   IF MLCODE=SPACE(4)
      EXIT
   ELSE
      SELECT 2
      LOCATE FOR UPPER(LCODE)= UPPER(MLCODE)
      IF FOUND()
         MBASICAMT=BASICAMT
         MHOUSING=HOUSING
         MTFARE=TFARE
         MLEAVEAMT=LEAVEAMT
         *MGRDLEVEL=GRDLEVEL
         MLEAVEWK=LEAVEWK
         ANSD='Y'
         @22,10 SAY SPACE(69)
         @22,10 SAY "CONFIRM NEW GRADE LEVEL..?(Y/N)" GET ANSD
         READ
         @22,10 SAY SPACE(69)
         IF UPPER(ANSD)<>'Y'
            MBASICAMT=0.00
            MHOUSING=0.00
            MTFARE=0.00
            MLEAVEAMT=0.00
            *MGRDLEVEL=SPACE(4)
            MLEAVEWK=0
            @22,10 SAY SPACE(69)
            LOOP
         ENDIF
         EXIT
```

```
      ELSE
         LOOP
      ENDIF
   ENDIF
ENDDO
MPROMOTED=.y.
MDTPROMOTE=ctod("  /  /  ")
select 2
MBASICAMT=BASICAMT
MHOUSING=HOUSING
MTFARE=TFARE
MLEAVEAMT=LEAVEAMT
*MGRDLEVEL=GRDLEVEL
MLEAVEWK=LEAVEWK
```



```
@13,22 SAY mBASICAMT PICT '999,999,999.99'
@14,22 SAY MHOUSING PICT '9,999,999.99'
@15,22 SAY MTFARE PICT '9,999,999.99'
@16,22 SAY MLEAVEAMT PICT '9,999,999.99'
@13,52 GET MPROMOTED
@13,69 GET MDTPROMOTE
READ
IF MPROMOTED
   DO WHILE .T.
      MLCODE = SPACE(4)
      @ 14,52 GET MLCODE
      READ
      IF MLCODE=SPACE(4)
         EXIT
      ELSE
         SELECT 2
         LOCATE FOR UPPER(LCODE)= UPPER(MLCODE)
         IF FOUND()
            MBASICAMT=BASICAMT
            MHOUSING=HOUSING
            MTFARE=TFARE
            MLEAVEAMT=LEAVEAMT
            *MGRDLEVEL=GRDLEVEL
            MLEAVEWK=LEAVEWK
            ANSD ='Y'
            @22,10 SAY SPACE(69)
            @22,10 SAY "CONFIRM NEW GRADE LEVEL ..? (Y/N)" GET ANSD
            READ
            @22,10 SAY SPACE(69)
            IF UPPER(ANSD) <> 'Y'
                MBASICAMT = 0.00
                MHOUSING=0.00
                MTFARE=0.00
                MLEAVEAMT=0.00
                MGRDLEVEL=SPACE(4)
                MLEAVEWK=0
                @22,10 SAY SPACE(69)
                LOOP
            ENDIF
            EXIT
         ELSE
            LOOP
         ENDIF
      ENDIF
   ENDDO
   @13,22 SAY MBASICAMT PICT '999,999,999.99'
```

```
   @14,22 SAY MHOUSING PICT '9,999,999.99'
   @15,22 SAY MTFARE PICT '9,999,999.99'
   @16,22 SAY MLEAVEAMT PICT '9,999,999.99'
ENDIF
monloan=.y.
mloanamt=0
mloanrate=0.00
@15,52 GET MONLOAN
READ
IF MONLOAN
   MLOANAMT=0
   MLOANTYP=SPACE(30)
   MLOANRATE=0.00
   @15,61 GET MLOANAMT PICT '999,999,999.99'
   @16,46 GET MLOANTYP
   @18,17 GET MLOANRATE PICT '99.99'

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ENDIF
LOANCR=MLOANAMT-(MLOANAMT*(MLOANRATE/100))
 MLOANCR=0
 MLEAVEDT=CTOD('  /  /  ')
@18,55 GET MLOANCR PICT '999,999,999.99'
@19,17 GET MLEAVEDT
READ
MPENAMT=0
@19,29 SAY MLEAVEDT+(MLEAVEWK*5)
@19,55 GET MPENAMT PICTURE '99,999.99'
READ
DO WHILE .T.
    MBCODE=SPACE(3)
    @20,17 GET MBCODE
    READ
    IF MBCODE=SPACE(3)
       EXIT
    ELSE
       SELECT 6
       LOCATE FOR UPPER(BCODE)= UPPER(MBCODE)
       IF FOUND()
          MBANKNAME=BKDESC
          @20,17 SAY MBANKNAME
          ANSD='Y'
          @22,10 SAY SPACE(69)
          @22,10 SAY "CONFIRM QUALIFICATION CERTIFICATE..?(Y/N)" GET
          READ
          @22,10 SAY SPACE(69)
          IF UPPER(ANSD) <> 'Y'
             MBANKNAME=SPACE(20)
             @22,10 SAY SPACE(69)
             LOOP
          ENDIF
          EXIT
       ELSE
          LOOP
       ENDIF
   ENDIF
ENDDO
MBANKACCT=SPACE(10)
@20,55 GET MBANKACCT
READ
RETURN
*
*
```

```
ENDIF
ENDDO

PROCEDURE CRTRPL
SELECT 1
MSTAFFNO=SPACE(9)
MNAME1=SPACE(20)
MNAME2=SPACE(40)
MMSTATUS=SPACE(1)
MISSUENO=00
MSEX=SPACE(1)
MSTATE=SPACE(15)
MADDRESS=SPACE(50)
MEDCODE=SPACE(3)
MDPCODE=SPACE(2)
MEPDATE=CTOD("  /  /  ")
MRCODE=SPACE(3)
MLCODE=SPACE(4)
```



```
MBASICAMT=0.00
MPROMOTED=.F.
MDTPROMOTE=CTOD("  /  /  ")
MHOUSING=0.00
MTFARE=0.00
MONLOAN=.F.
MLOANAMT=0.00
MLEAVEAMT=0.00
MLEAVEWK=0
MLOANTYP = SPACE(30)
MLOANRATE=0.00
MLOANCR =0.00
MLEAVEDT = CTOD("  /  /  ")
MPENAMT = 0.00
MBCODE = SPACE(3)
MBANKACCT=SPACE(10)
MEDLEVEL=SPACE(20)
MDEPTDESC=SPACE(20)
MPOSTHELD=SPACE(20)
MGRDLEVEL=SPACE(4)
MBANKNAME=SPACE(20)

REPLACE NAME1 WITH MNAME1
REPLACE NAME2 WITH MNAME2
REPLACE MSTATUS WITH MMSTATUS
REPLACE ISSUENO WITH MISSUENO
REPLACE SEX WITH MSEX
REPLACE STATE WITH MSTATE
REPLACE ADDRESS WITH MADDRESS
REPLACE EDLEVEL WITH MEDLEVEL
REPLACE DEPTDESC WITH MDEPTDESC
REPLACE EPDATE WITH MEPDATE
REPLACE POSTHELD WITH MPOSTHELD
REPLACE GRDLEVEL WITH MGRDLEVEL
REPLACE PROMOTED WITH MPROMOTED
REPLACE DTPROMOTE WITH MDTPROMOTE
REPLACE ONLOAN WITH MONLOAN
REPLACE LOANAMT WITH MLOANAMT
REPLACE LOANRATE WITH MLOANRATE
REPLACE LOANCR WITH MLOANCR
REPLACE LOANTYP WITH MLOANTYP
REPLACE LEAVEDT WITH MLEAVEDT
REPLACE PENAMT WITH MPENAMT
```

```
REPLACE BANKNAME WITH MBANKNAME
REPLACE BANKACCT WITH MBANKACCT
RETURN
*
*
```

```
*DEPARTMENT CODE PROCEDURE BEGINS
*
STORE SPACE(3) TO IDPCODE
STORE SPACE(20) TO IDPDESC
CLEAR
CLOSE DATABASES
@0,0 TO 23,79 DOUBLE
@2,24 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
@3,22 SAY "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 4,29 SAY "DEPARTMENT CODE ENTRY"
@ 6,2 SAY "DEPT. CODE  :"
@ 8,2 SAY "DESCRIPTION:"
SELECT 1
   USE DEPTCD
IF ISCOLOR()
    SET COLOR TO W+/B, GR+/N+
ENDIF
DO WHILE .T.
   STORE SPACE(3) TO IDPCODE
   STORE SPACE(20) TO IDPDESC
   STORE ' ' TO ANSD, IDLT
   @6,16 CLEAR TO 8,40
   NEWREC = .T.
   @22,10 SAY SPACE(60)
   @6,16 GET IDPCODE
   READ
   IF IDPCODE = SPACE(3)
      ??CHR(7)
      ANSD = 'Y'
      @22,10 SAY "QUIT PROCEDURE..? (Y/N)" GET ANSD
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='Y'
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
   SELECT 1
   GO TOP
   LOCATE FOR DPCODE = IDPCODE
   IF FOUND()
      NEWREC = .F.
      IDPDESC = DPDESC
      @8,16 SAY IDPDESC
      ?CHR(7)
      @22,10 SAY "RECORD EXIST,C - CHANGE,D - DELETE,I - IGNORE"GET
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='D'
      ?CHR(7)
      @22,10 SAY "SURE YOU WANT TO DELETE RECORD...? (Y/N)" GET IDLT
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         LOOP
      ENDIF
      DELETE
      @22,10 SAY "DO YOU WISH TO DELETE MORE RECORDS...?(Y/N)"GET ID
      READ
```

```
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
```



```
         ??CHR(7)
         @22,10 SAY "PLEASE WAIT.......!!!"
         SELECT 1
         PACK
         READ
         ??CHR(7) +CHR(7)
         LOOP
      ELSE
         LOOP
      ENDIF
   ENDIF
   IF UPPER(ANSD) <> "C"
      LOOP
   ENDIF
 ENDIF
 @8,16 GET IDPDESC
 READ
 ANSD="Y"
 @22,10 SAY SPACE(69)
 @22,10 SAY "ADD RECORD TO FILE....?(Y/N)" GET ANSD
 READ
 @ 22,10 SAY SPACE(69)
 IF UPPER(ANSD) <> "Y"
    @22,10 SAY "RECORD NOT ADDED TO FILES ...!"
    READ
    @22,10 SAY SPACE(69)
    LOOP
 ENDIF
 SELECT 1
 IF NEWREC
    APPEND BLANK
    REPLACE DPCODE WITH IDPCODE
 ENDIF
 REPLACE DPDESC WITH IDPDESC
 @22,10 SAY "RECORD ADDED TO FILES...!"
 READ
ENDDO
RELEASE IDPCODE, IDPDESC
CLOSE DATABASES
SET COLO TO W/B
CLEAR
RETURN
*
```

```
*LEVEL CODE PROCEDURE BEGINS
*
STORE SPACE(3) TO ILCODE
STORE 0 TO IBASICAMT
STORE 0 TO IHOUSING, ITFARE, ITXRATE, ILEAVEWK, ILEAVEAMT
CLEAR
CLOSE DATABASES
@0,0 TO 23,79 DOUBLE
@2,24 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
@3,22 SAY "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 4,29 SAY "GRADE LEVEL CODE ENTRY"
@ 6,2 SAY "LEVEL CODE                    :"
@ 7,2 SAY "ANNUAL BASIC AMOUNT           :"
@ 8,2 SAY "ANNUAL HOUSING ALLOWANCE      :"
@ 9,2 SAY "ANNUAL TRANSPORT ALLOWANCE:"
@10,2 SAY "TAX RATE                      :"
@11,2 SAY "LEAVE DURATION IN WEEKS       :" +SPACE(20)+"LEAVE ALLOWANCE"
SELECT 1
   USE LEVELCD
IF ISCOLOR()
    SET COLOR TO W+/GB, GR+/N+
ENDIF
DO WHILE .T.
   STORE SPACE(4) TO ILCODE
   STORE 0.00 TO IBASICAMY, IHOUSING, ITFARE, ITXRATE, ILEAVEAMT
   STORE 0 TO ILEAVEWK
   STORE ' ' TO ANSD, IDLT
   @6,29 CLEAR TO 10,45
   @11,29 CLEAR TO 11,45
   @11,64 CLEAR TO 11,78

   NEWREC = .T.
   @22,10 SAY SPACE(60)
   @6,16 GET ILCODE
   READ
   IF ILCODE = SPACE(3)
      ??CHR(7)
      ANSD = 'Y'
      @22,10 SAY "QUIT PROCEDURE..? (Y/N)" GET ANSD
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='Y'
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
   SELECT 1
   GO TOP
   LOCATE FOR LCODE=ILCODE
   IF FOUND()
      NEWREC = .F.
      IBASICAMT = BASICAMT
      IHOUSING=HOUSING
      ITFARE=TFARE
      ILEAVEAMT=LEAVEAMT
      ILEAVEWK=LEAVEWK
      @7,29 SAY IBASICAMT PICTURE '999,999,999.99'
      @8,29 SAY IHOUSING PICT '9,999,999.99'
      @9,29 SAY ITFARE PICTURE '9,999,999.99'
```

```
      @10,29 SAY ITXRATE PICT '99.99'
      @11,29 SAY ILEAVEWK PICTURE '9'

Page #    2

      @11,64 SAY ILEAVEAMT PICT '9,999,999.99'

      ?CHR(7)
      @22,10 SAY "RECORD EXIST,C  CHANGE,D -DELETE,I - IGNORE"GET AN
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='D'
      ?CHR(7)
      @22,10 SAY "SURE YOU WANT TO DELETE RECORD...? (Y/N)" GET IDLT
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         LOOP
      ENDIF
      DELETE
      @22,10 SAY "DO YOU WISH TO DELETE MORE RECORDS...?(Y/N)"GET ID
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         ??CHR(7)
         @22,10 SAY "PLEASE WAIT.......!!!"
         SELECT 1
         PACK
         READ
         ??CHR(7) +CHR(7)
         LOOP
      ELSE
         LOOP
      ENDIF
   ENDIF
   *SOME PARTS MISSING
   IF UPPER(ANSD) <> "C"
      LOOP
   ENDIF
ENDIF
@7,29 GET IBASICAMT PICTURE '999,999,999.99'
@8,29 GET IHOUSING PICT '9,999,999.99'
@9,29 GET ITFARE PICTURE '9,999,999.99'
@10,29 GET ITXRATE PICT '99.99'
@11,29 GET ILEAVEWK PICTURE '9'
@11,64 GET ILEAVEAMT PICT '9,999,999.99'
READ
ANSD="Y"
@22,10 SAY SPACE(69)
@22,10 SAY "ADD RECORD TO FILE....?(Y/N)" GET ANSD
READ
@ 22,10 SAY SPACE(69)
IF UPPER(ANSD) <> "Y"
   @22,10 SAY "RECORD NOT ADDED TO FILES ...!"
   READ
   @22,10 SAY SPACE(69)
   LOOP
ENDIF
SELECT 1
IF NEWREC
   APPEND BLANK
   REPLACE LCODE WITH ILCODE
ENDIF
REPLACE BASICAMT WITH IBASICAMT
```

```
 REPLACE HOUSING WITH IHOUSING
 REPLACE TFARE WITH ITFARE
 REPLACE TXRATE WITH ITXRATE
 REPLACE LEAVEWK WITH ILEAVEWK
```



```
 REPLACE LEAVEAMT WITH ILEAVEAMT
 @22,10 SAY "RECORD ADDED TO FILES...!"
 READ
ENDDO
RELEASE ILCODE, IBASICAMT, IHOUSING, ITFARE, ITXRATE, ILEAVEWK, ILEA
CLOSE DATABASES
SET COLOR TO W/B
CLEA
RETURN
*
```

```
*RANK CODE PROCEDURE BEGINS
*
*PROCEDURE RANK
STORE SPACE(3) TO IRCODE
STORE SPACE(20) TO IRDESC
CLEAR
CLOSE DATABASES

@0,0 TO 23,79 DOUBLE
@2,24 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
@3,28 SAY "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 4,29 SAY "RANK CODE ENTRY"
@ 6,2 SAY "RANK CODE  :"
@ 8,2 SAY "DESCRIPTION:"
SELECT 1
   USE RANKED
IF ISCOLOR()
    SET COLOR TO W+/B, GR+/N+
ENDIF
DO WHILE .T.
   STORE SPACE(3) TO IRCODE
   STORE SPACE(20) TO IRDESC
   STORE ' ' TO ANSD, IDLT
   @6,16 CLEAR TO 8,40
   NEWREC = .T.
   @22,10 SAY SPACE(60)
   @6,16 GET IRCODE
   READ
   IF IRCODE = SPACE(3)
      ??CHR(7)
      ANSD = 'Y'
      @22,10 SAY "QUIT PROCEDURE..? (Y/N)" GET ANSD
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='Y'
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
   SELECT 1
   GO TOP
   LOCATE FOR RCODE= IRCODE
   IF FOUND()
      NEWREC = .F.
      IRDESC = RDESC
      @8,16 SAY IRDESC
      ?CHR(7)
      @22,10 SAY "RECORD EXIST,C  CHANGE,D -DELETE,I - IGNORE"GET AN
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='D'
      ?CHR(7)
      @22,10 SAY "SURE YOU WANT TO DELETE RECORD...? (Y/N)" GET IDLT
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         LOOP
      ENDIF
      DELETE
```

```
      @22,10 SAY "DO YOU WISH TO DELETE MORE RECORDS...?(Y/N)"GET ID
      READ
```



```
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         ??CHR(7)
         @22,10 SAY "PLEASE WAIT.......!!!"
         SELECT 1
         PACK
         READ
         ??CHR(7) +CHR(7)
         LOOP
      ELSE
         LOOP
      ENDIF
   ENDIF
   IF UPPER(ANSD) <> "C"
      LOOP
   ENDIF
 ENDIF
 @8,16 GET IRDESC
 READ
 ANSD="Y"
 @22,10 SAY SPACE(69)
 @22,10 SAY "ADD RECORD TO FILE....?(Y/N)" GET ANSD
 READ
 @ 22,10 SAY SPACE(69)
 IF UPPER(ANSD) <> "Y"
    @22,10 SAY "RECORD NOT ADDED TO FILES ...!"
    READ
    @22,10 SAY SPACE(69)
    LOOP
 ENDIF
 SELECT 1
 IF NEWREC
    APPEND BLANK
    REPLACE RCODE WITH IRCODE
 ENDIF
 REPLACE RDESC WITH IRDESC
 @22,10 SAY "RECORD ADDED TO FILES...!"
 READ
ENDDO
RELEASE IRCODE, IRDESC
CLOSE DATABASES
SET COLOR TO W/B
CLEAR
RETURN
*RANK CODE PROCEDURE ENDS
*
```

```
*
*FILE NAME     :  codes.PRG
*FUNCTION      :  MAINTAIN SYSTEM CODES
*
clear
CLEAR GETS
@ 0,0 to 23,79 double
@ 2,24 say "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
@ 3,24 say "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 18,79
@ 4,30 SAY "SYSTEM CODES MENU"
DO WHILE .T.
   @ 8,25 SAY "[1]    RANK CODES       "
   @ 9,25 SAY "[2]    DEPARTMENT CODES "
   @10,25 SAY "[3]    BANK CODES       "
   @11,25 SAY "[4]    CERTIFICATE CODES"
   @12,25 SAY "[5]    LEVEL CODES      "
   @13,25 SAY "[6]    EXIT    "
   STORE 0 TO OPT
   @17,15 SAY "SELECT AN OPTION"GET OPT
   READ
   DO CASE
      CASE OPT =1
        DO RANK
      CASE OPT =2
        DO DEPTCD
      CASE OPT =3
        DO BANK
      CASE OPT =4
        DO QUALC
      CASE OPT =5
        DO LEVELCD
      CASE OPT =6
        CLEAR
        RETURN
      OTHERWISE
        LOOP
    ENDCASE
ENDDO
SET COLO TO B/W
CLEAR
```

```
*BANK CODE PROCEDURE BEGINS
*
STORE SPACE(3) TO IBCODE
STORE SPACE(20) TO IBKDESC
CLEAR
CLOSE DATABASES
@0,0 TO 23,79 DOUBLE
@2,24 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT "
@3,22 SAY "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 4,29 SAY "BANK CODE ENTRY"
@ 6,2 SAY "BANK CODE  :"
@ 8,2 SAY "DESCRIPTION:"
SELECT 1
   USE BANKCD
IF ISCOLOR()
    SET COLOR TO W+/B, GR+/N+
ENDIF
DO WHILE .T.
   STORE SPACE(3) TO IBCODE
   STORE SPACE(20) TO IBKDESC
   STORE ' ' TO ANSD, IDLT
   @6,16 CLEAR TO 8,40
   NEWREC = .T.
   @22,10 SAY SPACE(60)
   @6,16 GET IBCODE
   READ
   IF IBCODE = SPACE(3)
      ??CHR(7)
      ANSD = 'Y'
      @22,10 SAY "QUIT PROCEDURE..? (Y/N)" GET ANSD
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='Y'
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
   SELECT 1
   GO TOP
   LOCATE FOR BCODE= IBCODE
   IF FOUND()
      NEWREC = .F.
      IBKDESC = BKDESC
      @8,16 SAY IBKDESC
      ?CHR(7)
      @22,10 SAY "RECORD EXIST,C  CHANGE,D -DELETE,I - IGNORE"GET AN
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='D'
      ?CHR(7)
      @22,10 SAY "SURE YOU WANT TO DELETE RECORD...? (Y/N)" GET IDLT
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         LOOP
      ENDIF
      DELETE
      @22,10 SAY "DO YOU WISH TO DELETE MORE RECORDS...?(Y/N)"GET ID
      READ
```

```
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
```



```
         ??CHR(7)
         @22,10 SAY "PLEASE WAIT.......!!!"
         SELECT 1
         PACK
         READ
         ??CHR(7) +CHR(7)
         LOOP
      ELSE
         LOOP
      ENDIF
   ENDIF
   IF UPPER(ANSD) <> "C"
      LOOP
   ENDIF
 ENDIF
 @8,16 GET IBKDESC
 READ
 ANSD="Y"
 @22,10 SAY SPACE(69)
 @22,10 SAY "ADD RECORD TO FILE....?(Y/N)" GET ANSD
 READ
 @ 22,10 SAY SPACE(69)
 IF UPPER(ANSD) <> "Y"
    @22,10 SAY "RECORD NOT ADDED TO FILES ...!"
    READ
    @22,10 SAY SPACE(69)
    LOOP
 ENDIF
 SELECT 1
 IF NEWREC
    APPEND BLANK
    REPLACE BCODE WITH IBCODE
 ENDIF
 REPLACE BKDESC WITH IBKDESC
 @22,10 SAY "RECORD ADDED TO FILES...!"
 READ
ENDDO
RELEASE IBCODE, IBKDESC
CLOSE DATABASES
SET COLOR TO W/B
CLEAR
RETURN
*
```

```
*QUALIFICATION CODE PROCEDURE BEGINS
*
STORE SPACE(3) TO IEDCODE
STORE SPACE(20) TO IEDESC
CLEAR
CLOSE DATABASES
@0,0 TO 23,79 DOUBLE
@2,19 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT "
@3,22 SAY "PERSONNEL MANAGEMENT SYSTEM"
@ 4,0 TO 12,79
@ 4,29 SAY "QUALIFICATION CODE ENTRY"
@ 6,2 SAY "QUALIFICATION CODE  :"
@ 8,2 SAY "DESCRIPTION:"
SELECT 1
   USE EDSTATUS
IF ISCOLOR()
    SET COLOR TO W+/B, GR+/N+
ENDIF
DO WHILE .T.
   STORE SPACE(3) TO IEDCODE
   STORE SPACE(20) TO IEDESC
   STORE ' ' TO ANSD, IDLT
   @6,16 CLEAR TO 8,40
   NEWREC = .T.
   @22,10 SAY SPACE(60)
   @6,16 GET IEDCODE
   READ
   IF IEDCODE = SPACE(3)
      ??CHR(7)
      ANSD = 'Y'
      @22,10 SAY "QUIT PROCEDURE..? (Y/N)" GET ANSD
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='Y'
         EXIT
      ELSE
         LOOP
      ENDIF
   ENDIF
   SELECT 1
   GO TOP
   LOCATE FOR EDCODE=IEDCODE
   IF FOUND()
      NEWREC = .F.
      IEDESC = EDESC
      @8,16 SAY IEDESC
      ?CHR(7)
      @22,10 SAY "RECORD EXIST,C  CHANGE,D -DELETE,I - IGNORE"GET AN
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(ANSD)='D'
      ?CHR(7)
      @22,10 SAY "SURE YOU WANT TO DELETE RECORD...? (Y/N)" GET IDLT
      READ
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
         LOOP
      ENDIF
      DELETE
      @22,10 SAY "DO YOU WISH TO DELETE MORE RECORDS...?(Y/N)"GET ID
      READ
```

```
      @22,10 SAY SPACE(60)
      IF UPPER(IDLT) <> "Y"
```



```
         ??CHR(7)
         @22,10 SAY "PLEASE WAIT.......!!!"
         SELECT 1
         PACK
         READ
         ??CHR(7) +CHR(7)
         LOOP
      ELSE
         LOOP
      ENDIF
   ENDIF
   IF UPPER(ANSD) <> "C"
      LOOP
   ENDIF
 ENDIF
 @8,16 GET IEDESC
 READ
 ANSD="Y"
 @22,10 SAY SPACE(69)
 @22,10 SAY "ADD RECORD TO FILE....?(Y/N)" GET ANSD
 READ
 @ 22,10 SAY SPACE(69)
 IF UPPER(ANSD) <> "Y"
    @22,10 SAY "RECORD NOT ADDED TO FILES ...!"
    READ
    @22,10 SAY SPACE(69)
    LOOP
 ENDIF
 SELECT 1
 IF NEWREC
    APPEND BLANK
    REPLACE EDCODE WITH IEDCODE
 ENDIF
 REPLACE EDESC WITH IEDESC
 @22,10 SAY "RECORD ADDED TO FILES...!"
 READ
ENDDO
RELEASE IEDCODE, IEDESC
CLOSE DATABASES
SET COLO TO W/B
CLEAR
RETURN
*
```

```
*REPORT GENERATION SUB-PROGRAM
*
* FILE NAME: GENRPT.PRG
*
store 0 to OPTION3
CLEAR
@0,0 TO 23,79 DOUBLE
@2,24 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
@3,22 SAY "PERSONNEL MANAGEMENT SYSTEM"
@4,0 TO 12,79
@4,30 SAY "REPORT PROCESSING MENU"
DO WHILE .T.
   @ 8,25 say "[1]  COMPANY STAFF      "
   @ 9,25 say "[2]  DEPARTMENT STAFF   "
   @10,25 say "[3]  LEAVE DUE LIST     "
   @11,25 say "[4]  STAFF ON LEAVE     "
   @14,25 say "[5]  EXIT               "
   @15,24 SAY "SELECT OPTION" get option3
   read
   DO CASE
      CASE OPTION3=1
        DO CSTAFF
      CASE OPTION3=2
        DO DSTAFF
      CASE OPTION3=3
        DO TOLEAVE
      CASE OPTION3=4
        DO ONLEAVE
      CASE OPTION3=5
        CLEAR
        EXIT
      OTHERWISE
        LOOP
   ENDCASE
ENDDO
CLOSE DATABASES
RETURN
*

*COMPANY STAFF PROCEDURE
PROCEDURE CSTAFF
PUBLIC NLINE, PAGE
STORE 0 TO NLINE, PAGE
SAVE SCREEN TO SCR
CLOSE DATABASES
CLEAR
SELECT 1
IF .not. FILE("PMASTER.IDX")
   USE PMASTER
   INDEX ON STAFFNO TO PMASTER
ELSE
   USE PMASTER INDEX PMASTER
ENDIF
@5,5 CLEAR TO 15,60
@7,15 SAY 'COMPANY STAFF LISTING TO THE PRINTER'
@9,15 SAY 'PLS. MAKE SURE YOUR PRINTER IS READY'
@11,10 SAY 'PRESS<ENTER> TO CONTINUE'
READ
SET DEVICE TO PRINT
SELECT 1
GO TOP
```

```
PAGE = 1
DO CSHEAD

Page #    2

DO WHILE .not. EOF()
   DO CSLINE
   SKIP
   IF NLINE>58
      PAGE=PAGE +1
      DO CSHEAD
   ENDIF
ENDDO
EJECT
SET DEVICE TO SCREEN
@24,3 SAY 'PRESS ANY KEY TO EXIT'
READ
CLOSE DATABASES
CLEAR
RESTORE SCREEN FROM SCR
RETURN
*

PROCEDURE CSHEAD
@1,115 SAY "PAGE NO:"
@1,122 SAY PAGE
@1,2 SAY "RUN DATE: "+LTRIM(DTOC(DATE()))
@1,30 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT "
@3,42 SAY "LIST OF STAFF AS AT :"+LTRIM(DTOC(DATE()))
@4,103 SAY "DATE"
@5,6 SAY "STAFF NO."
@5,40 SAY "STAFF NAME"
@5,82 SAY "OFFICIAL POST"
@5,101 SAY "EMPLOYED"
@6,1 SAY REPLICATE("=",132)
NLINE=7
RETURN

PROCEDURE CSLINE
@NLINE,7 SAY STAFFNO
@NLINE,17 SAY NAME1
@NLINE,39 SAY NAME2
@NLINE,79 SAY POSTHELD
@NLINE,101 SAY EPDATE
NLINE=NLINE+1
RETURN
*
*

PROCEDURE DSTAFF
PUBLIC NLINE, PAGE, IDEPT,TREC
STORE 0 TO NLINE, PAGE
STORE 0 TO TREC
STORE SPACE(20) TO IDEPT
SAVE SCREEN TO SCR
CLOSE DATABASES
CLEAR
SELECT 1
IF .not. FILE("PMASTER.IDX")
   USE PMASTER
   INDEX ON STAFFNO TO PMASTER
ELSE
   USE PMASTER INDEX PMASTER
ENDIF
```

```
SELECT 2
IF .not. FILE("DEPTCD.IDX")
   USE DEPTCDR
   INDEX ON DPCODE TO DEPTCD

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ELSE
   USE DEPTCD INDEX DEPTCD
ENDIF
@5,5 CLEAR TO 15,60
@7,15 SAY 'DEPARTMENTAL STAFF LISTING TO THE PRINTER'
@9,15 SAY 'PLS. MAKE SURE YOUR PRINTER IS READY'
@11,10 SAY 'PRESS<ENTER> TO CONTINUE'
READ
SET DEVICE TO PRINT
*SELECT 1
PAGE = 1
NLINE=7
TREC=1
DO WHILE .T.
   IF EOF()
      EXIT
   ENDIF
   GO TREC
   STORE DPDESC TO IDEPT
   DO DSHEAD
   IF NLINE>58
      PAGE=PAGE +1
      NLINE=7
   ENDIF
   SELECT PMASTER
   GO TOP
   DO WHILE DEPTDESC=IDEPT
    do while .not. EOF()
      DO DSLINE
      SKIP
      IF NLINE>58
         PAGE=PAGE+1
         NLINE=7
         DO DSHEAD
      ENDIF
    enddo
   ENDDO
   NLINE=NLINE+3
   SELECT DEPTCD
   SKIP
   TREC=RECNO()
   LOOP
ENDDO
EJECT
SET DEVICE TO SCREEN
@24,3 SAY 'PRESS ANY KEY TO EXIT'
READ
CLOSE DATABASES
CLEAR
RESTORE SCREEN FROM SCR
RETURN
*

PROCEDURE DSHEAD
@1,115 SAY "PAGE NO:"
@1,122 SAY PAGE
@1,2 SAY "RUN DATE: "+LTRIM(DTOC(DATE()))
```

```
@1,45 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT "
@3,48 SAY "LIST OF STAFF BY DEPARTMENT"
@4,48 SAY "DEPARTMENT:"
@4,61 SAY IDEPT
@4,103 SAY "DATE"
@5,6 SAY "STAFF NO."

Page #    4

@5,40 SAY "STAFF NAME"
@5,82 SAY "OFFICIAL POST"
@5,101 SAY "EMPLOYED"
@6,1 SAY REPLICATE("=",132)
RETURN

PROCEDURE DSLINE
@NLINE,7 SAY STAFFNO
@NLINE,17 SAY NAME1
@NLINE,39 SAY NAME2
@NLINE,79 SAY POSTHELD
@NLINE,101 SAY EPDATE
NLINE=NLINE+1
RETURN
*
*

PROCEDURE TOLEAVE
PUBLIC NLINE, PAGE, INDT,FIDT
STORE 0 TO NLINE, PAGE
INDT=CTOD("  /  /  ")
FIDT=CTOD("  /  /  ")
SAVE SCREEN TO SCR
CLOSE DATABASES
CLEAR
SELECT 1
IF .not. FILE("PMASTER.IDX")
   USE PMASTER
   INDEX ON STAFFNO TO PMASTER
ELSE
   USE PMASTER INDEX PMASTER
ENDIF
@5,5 CLEAR TO 15,60
@6,5 SAY "INITIAL DATE:"
@6,19 GET INDT
@6,30 SAY "FINAL DATE:"
@6,42 GET FIDT
READ
@7,15 SAY 'LISTING STAFF DUE FOR LEAVE TO THE PRINTER'
@9,15 SAY 'PLS. MAKE SURE YOUR PRINTER IS READY'
@11,10 SAY 'PRESS<ENTER> TO CONTINUE'
READ
SET DEVICE TO PRINT
SELECT 1
GO TOP
PAGE = 1
DO TOHEAD
DO WHILE .NOT. EOF()
    IF (LEAVEDT >INDT) .AND. (LEAVEDT<FIDT)
       DO TOLINE
       SKIP
       IF NLINE > 58
          PAGE=PAGE+1
          DO TOHEAD
       ENDIF
```

```
    ELSE
       SKIP
    ENDIF
ENDDO
EJECT
SET DEVICE TO SCREEN
@24,3 SAY 'PRESS ANY KEY TO EXIT'
READ
```



```
CLOSE DATABASES
CLEAR
RESTORE SCREEN FROM SCR
RETURN
*

PROCEDURE TOHEAD
@1,115 SAY "PAGE NO:"
@1,122 SAY PAGE
@1,2 SAY "RUN DATE: "+LTRIM(DTOC(DATE()))
@1,45 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT "
@3,48 SAY "LIST OF STAFF DUE FOR LEAVE FROM                TO "
@3,70 SAY INDT
@3,83 SAY FIDT
@5,6 SAY "STAFF NO."
@5,40 SAY "STAFF NAME"
@5,82 SAY "DEPARTMENT"
@5,101 SAY "LEAVE DATE"
@6,1 SAY REPLICATE("=",132)
NLINE=7
RETURN

PROCEDURE TOLINE
@NLINE,7 SAY STAFFNO
@NLINE,17 SAY NAME1
@NLINE,39 SAY NAME2
@NLINE,79 SAY DEPTDESC
@NLINE,101 SAY LEAVEDT
NLINE=NLINE+1
RETURN
*
*

PROCEDURE ONLEAVE
PUBLIC NLINE, PAGE
STORE 0 TO NLINE, PAGE
SAVE SCREEN TO SCR
CLOSE DATABASES
CLEAR
SELECT 1
IF .not. FILE("PMASTER.IDX")
   USE PMASTER
   INDEX ON STAFFNO TO PMASTER
ELSE
   USE PMASTER INDEX PMASTER
ENDIF
@5,5 CLEAR TO 15,60
@7,15 SAY 'LISTING STAFF ON LEAVE TO THE PRINTER'
@9,15 SAY 'PLS. MAKE SURE YOUR PRINTER IS READY'
@11,10 SAY 'PRESS<ENTER> TO CONTINUE'
READ
SET DEVICE TO PRINT
SELECT 1
```

```
GO TOP
PAGE = 1
DO ONHEAD
DO WHILE .NOT. EOF()
    IF (LEAVEDT+30 >DATE()) .AND. (LEAVEDT<DATE())
       DO ONLINE
       SKIP
       IF NLINE > 58
          PAGE=PAGE+1
          DO ONHEAD

Page #    6

       ENDIF
    ELSE
       SKIP
    ENDIF
ENDDO
EJECT
SET DEVICE TO SCREEN
@24,3 SAY 'PRESS ANY KEY TO EXIT'
READ
CLOSE DATABASES
CLEAR
RESTORE SCREEN FROM SCR
RETURN
*

PROCEDURE ONHEAD
@1,115 SAY "PAGE NO:"
@1,122 SAY PAGE
@1,2 SAY "RUN DATE: "+LTRIM(DTOC(DATE()))
@1,45 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT "
@3,48 SAY "LIST OF STAFF ON LEAVE  "
@5,6 SAY "STAFF NO."
@5,40 SAY "STAFF NAME"
@5,82 SAY "DEPARTMENT"
@5,101 SAY "LEAVE DATE"
@6,1 SAY REPLICATE("=",132)
NLINE=7
RETURN

PROCEDURE ONLINE
@NLINE,7 SAY STAFFNO
@NLINE,17 SAY NAME1
@NLINE,39 SAY NAME2
@NLINE,79 SAY DEPTDESC
@NLINE,101 SAY LEAVEDT
NLINE=NLINE+1
RETURN
*
*


Page #    1

*REPORT GENERATION SUB-PROGRAM
*
* FILE NAME: GENRPT.PRG
*
store 0 to OPTION3
CLEAR
@0,0 TO 23,79 DOUBLE
@2,24 SAY "NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT"
```

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PERSONNEL MANAGEMENT SYSTEM

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áááááááááááááááááááááááááááááMAIN MENUááááááááááááááááááááááááááááááááááááá

[1] SYSTEM CODES
[2] UPDATE RECORD
[3] REPORT PROCESSING
[4] QUIT

áá

NAVIGATE TO SELECT AN OPTION 0

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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL MANAGEMENT SYSTEM
ááááááááááááááááááááááááSYSTEM CODES MENUááááááááááááááááááááááááááááááááá

[1] RANK CODES
[2] DEPARTMENT CODES
[3] BANK CODES
[4] CERTIFICATE CODES
[5] LEVEL CODES
[6] EXIT

SELECT AN OPTION 0
áá

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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL INFORMATION MANAGEMENT SYSTEM

TAFF NO: SURNAME:
THER NAMES: MARITAL STATUS [S/M]:
O. OF ISSUE: SEX [M/F]: STATE OF ORIGIN:
ONTACT ADDRESS:
UALIFICATION: DEPARTMENT:
ATE EMPLOYED: OFFICIAL POST: OLD GRADE LEVEL:
ASIC SALARY: PROMOTED [Y/N]: PROMOTION DATE:
OUSING ALLOWANCE : NEW GRADE LEVEL:
RANSPORT ALLOWANCE: ON LOAN [Y/N]:
EAVE ALLOWANCE: LOAN TYPE:
OAN RATE: OUTSTANDING LOAN AMOUNT:
EAVE DATE: TO PENSION AMOUNT :
ANK NAME: ACCOUNT NUMBER:

```
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                      NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
                    PERSONNEL MANAGEMENT SYSTEM
áááááááááááááááááááááááááááREPORT PROCESSING MENUáááááááááááááááááááááááááá


                       [1]  COMPANY STAFF
                       [2]  DEPARTMENT STAFF
                       [3]  LEAVE DUE LIST
                       [4]  STAFF ON LEAVE
ááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááá

                       [5]  EXIT
                      SELECT OPTION          0




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```

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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL MANAGEMENT SYSTEM
áááááááááááááááááááááááááááRANK CODE ENTRYáááááááááááááááááááááááááááááááááá

ANK CODE :

ESCRIPTION:

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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL MANAGEMENT SYSTEM

áááááááááááááááááááááááááááDEPARTMENT CODE ENTRYáááááááááááááááááááááááááááá

DEPT. CODE :

DESCRIPTION:

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QUIT PROCEDURE..? (Y/N) Y

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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL MANAGEMENT SYSTEM
áááááááááááááááááááááááááááBANK CODE ENTRYááááááááááááááááááááááááááááááááááá

ANK CODE :

ESCRIPTION:

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QUIT PROCEDURE..? (Y/N) Y
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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL MANAGEMENT SYSTEM

áááááááááááááááááááááááááááQUALIFICATION CODE ENTRYáááááááááááááááááááááááááá

UALIFICATION

ESCRIPTION:

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QUIT PROCEDURE..? (Y/N) Y

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NATIONAL BOARD FOR EDUCATIONAL MEASUREMENT
PERSONNEL MANAGEMENT SYSTEM
GRADE LEVEL CODE ENTRY

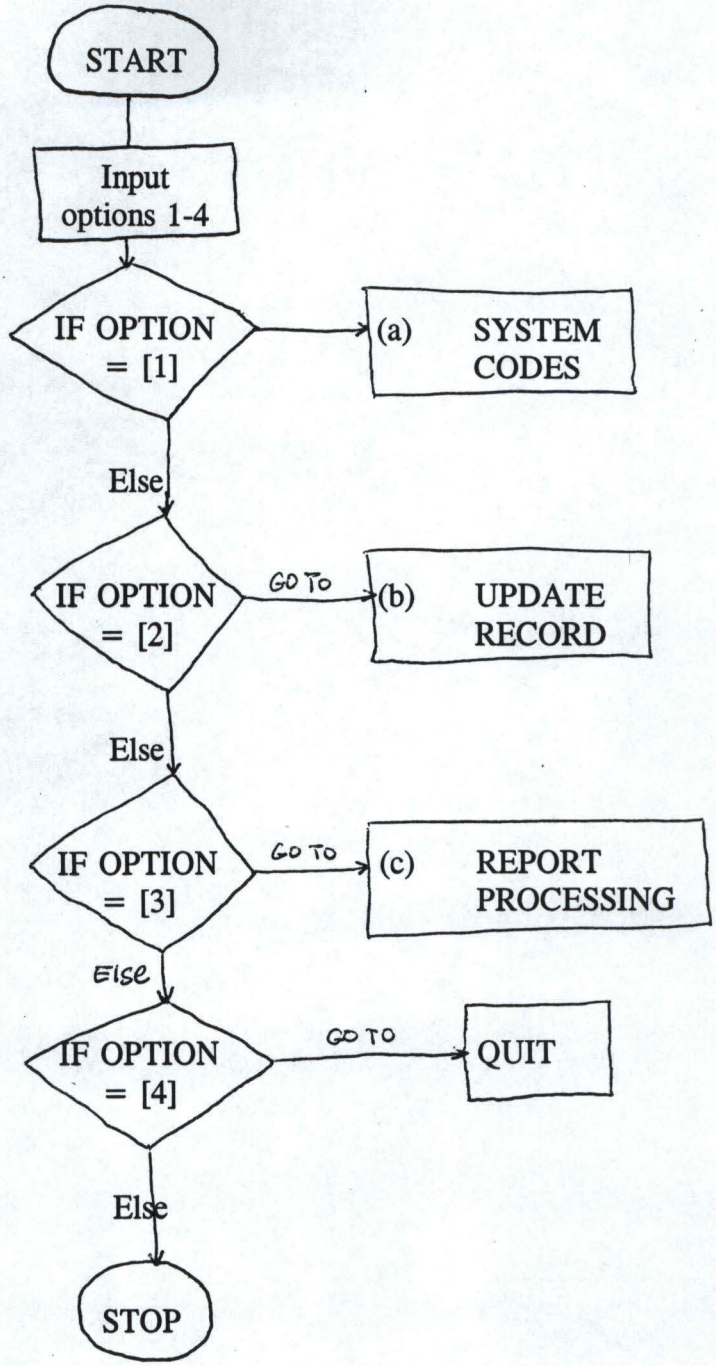
LEVEL CODE :
ANNUAL BASIC AMOUNT :
ANNUAL HOUSING ALLOWANCE :
ANNUAL TRANSPORT ALLOWANCE:
TAX RATE :
LEAVE DURATION IN WEEKS : LEAVE ALLOWANCE

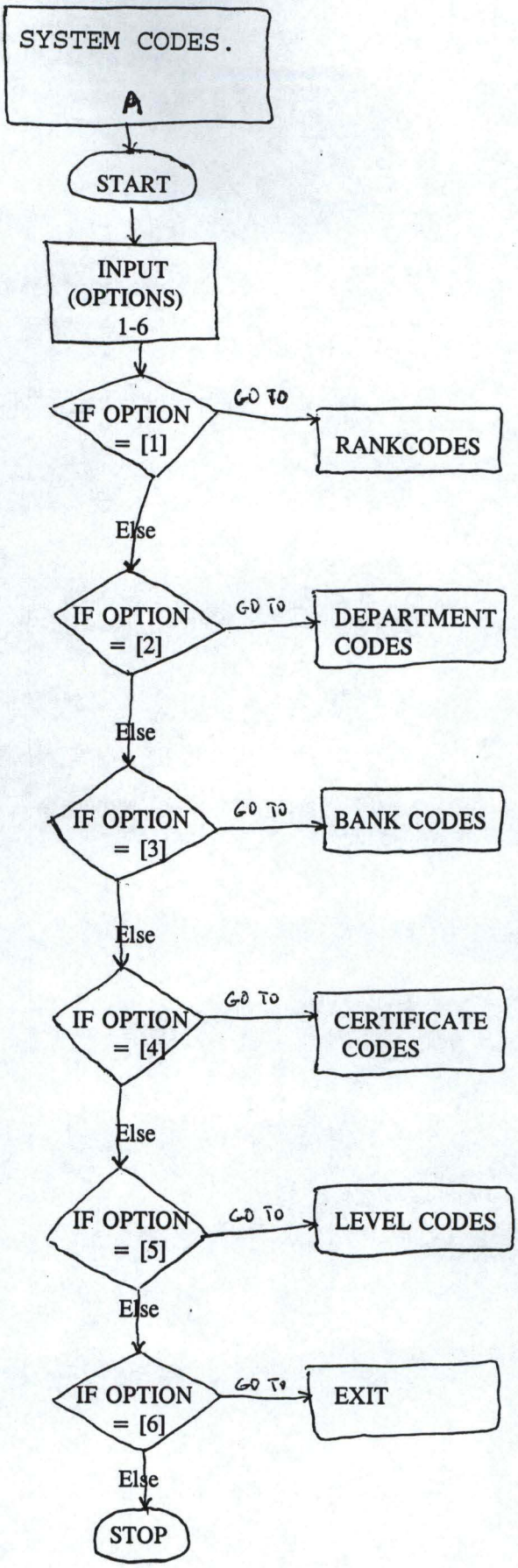
QUIT PROCEDURE..? (Y/N) Y

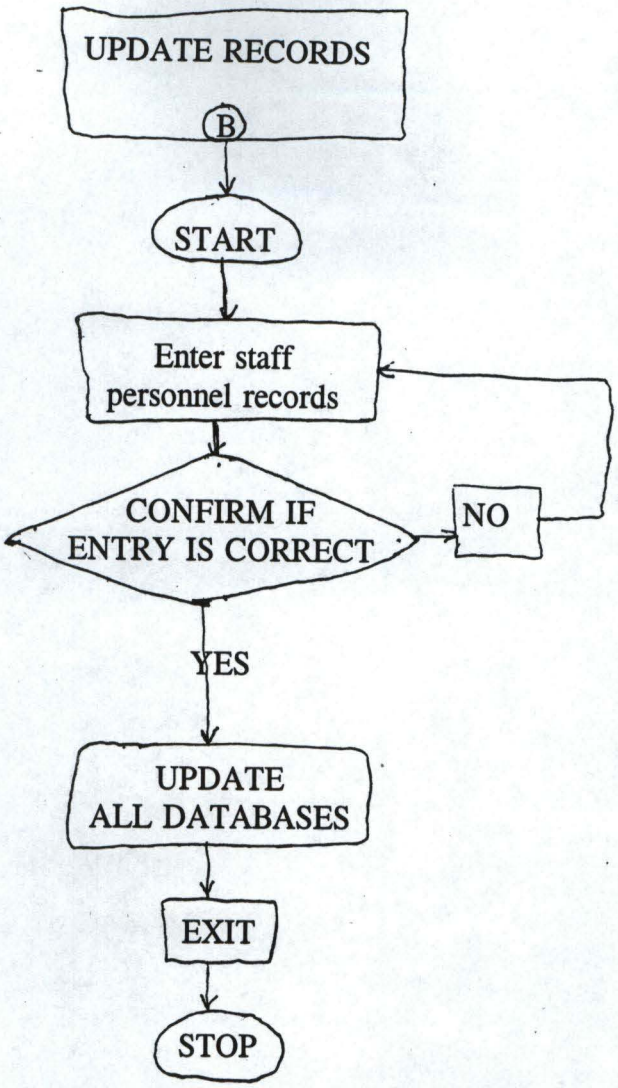
APPENDIX B

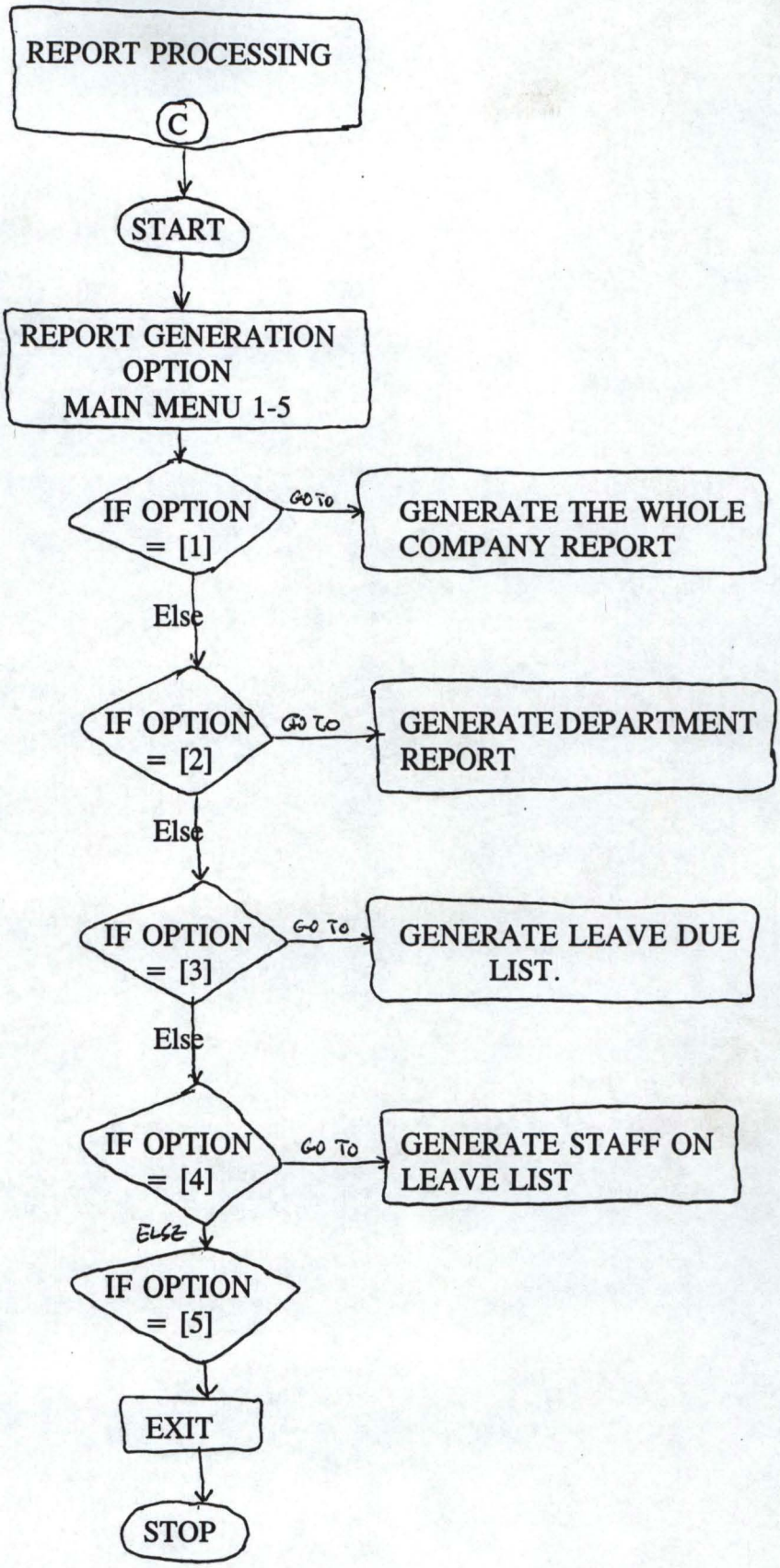
Flowcharts for the Computerized Personnel Information System

MAIN PROGRAM




SYSTEM CODES.
A
START
INPUT (OPTIONS) 1-6
IF OPTION = [1]
GO TO
RANKCODES
Else
IF OPTION = [2]
GO TO
DEPARTMENT CODES
Else
IF OPTION = [3]
GO TO
BANK CODES
Else
IF OPTION = [4]
GO TO
CERTIFICATE CODES
Else
IF OPTION = [5]
GO TO
LEVEL CODES
Else
IF OPTION = [6]
GO TO
EXIT
Else
STOP


UPDATE RECORDS
B
START
Enter staff personnel records
CONFIRM IF ENTRY IS CORRECT
NO
YES
UPDATE ALL DATABASES
EXIT
STOP


REPORT PROCESSING
C
START
REPORT GENERATION OPTION MAIN MENU 1-5
IF OPTION = [1]
GO TO
GENERATE THE WHOLE COMPANY REPORT
Else
IF OPTION = [2]
GO TO
GENERATE DEPARTMENT REPORT
Else
IF OPTION = [3]
GO TO
GENERATE LEAVE DUE LIST.
Else
IF OPTION = [4]
GO TO
GENERATE STAFF ON LEAVE LIST
ELSE
IF OPTION = [5]
EXIT
STOP