COMPUTERISATION AND ITS RELEVANCE TO PERSONNEL MANAGEMENT SYSTEM:
A CASE STUDY; SCIENCE AND TECHNICAL SCHOOLS BOARD MINNA, NIGER STATE.

BY

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CERTIFICATION

This project has been read and approved by the undersigned on behalf of the department of mathematics and computer science, federal university of technology, Minna, Niger state as being partial fulfillment for the award of a post-graduate Diploma in computer science, federal university of Technology Minna,

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(EXTERNAL EXAMINER)	SIGNATURE AND DATE

DEDICATION.

This research work is dedicated to my late Father, Mallam Aliyu Ango Kuta, My Late Brother Alhaji Ibrahim Aliyu Ango and my mother Aishatu Aliyu Ango.

ACKNOWLEDGEMENT.

This research work, which is in partial fulfilment of the requirement for award of a Post-Graduate Diploma in Computer Science would not have been possible without guidance of the Almighty God, to whom I profoundly thank.

My greatest debt is owed Professor K. R. Adeboye of the Department of Maths/Computer, Federal University of Technology, Minna who spared his valuable time to read and accordingly advise me on this project.

I also acknowledge, the contributions of staff of personnel department of Niger State Science and Technical Schools Board Minna.

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To Mal. Mohammed Ndagi P/Gubagi (M.N.G. & Family Computer Centre) who typed this project, I also thank immensely, for the time he spent in making sure this work is completed.

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I acknowledge also, many others who contributed in one way or the other to ensure the successful completion of this project work particularly Engr. Isah Aliyu Madiyu, for the advice and encouragement he gave me.

May Allah Bless you all.

ABSTRACT.

A computer has various meanings to various classes of people. To an electrical engineer it is a system of circuits, diodes and transistors, while to a mathematician it is a machine for the solution of problems too abtruse and lengthy to be capable of hand solution in reasonable time. To the general reader, a computer is an electronic machine for the automatic processing of data in a predetermined manner.

The use of computers in Science and Technical School Board, Minna is virtually non-existent, as personnel functions are done manually. In this research project, dBase IV - a classic database management system for micro computers, that allows interaction with data through multiple selections was used to set up a personnel management information system.

This system ensures proper records of profile and functions of all staff of Science and Technical Schools Board as well as to provide management with relevant information, thereby enhancing performance and efficiency.

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CHAPTER ONE.

INTRODUCTION.

A computer can be defined as a machine which accepts data from an input device, performs arithmetic and logical operations in accordance with a predefined program and finally transfers the processed data to an output device either for further processing or in final printed form. It has a further capability of storing data as may be required. Before computer processing can commence, it is necessary to have an input device for the purpose of transferring data into the computer internal memory. A computer is automatic in operation in these sense that when the program and data for processing have been inputed into it, the required output is produced without manual intervention as all the program instructions are executed automatically.

In view of its enormous capability, the computer as a machine has found itself in all fields of human endeavour especially as related to it application to human problem and human resources management. In the past, those responsible for the development of corporate data processing strategy tended to ignore or failed to appreciate the need for a computer based personnel management information system. Personnel management was also slow to appreciate the benefit which such a system could yield over and about manual system of record keeping.

However, the renewed effort to develop a computer based personnel management information system became evident in the Later half of 1970's the system was intended to enable personnel management to manage more efficiently and effectively and to provide more positive services to all organisations.

The appreciation of the need for a computer based personnel management information system in Minna Science and Technical Schools Board has come about because of the following factors;

i) The inadequacy of the existing manual system of file organisation and processing.

ii) The emphasis on increased productivity from the existing work force.

iii) the current rationalisation (re-structure) of the Federal, State and Local Government with a view to identifying redundancies but also cutting down on the staff strength so as to reduce Government expenditure to the barest minimum on staff monthly salary (wage) which has stretched most local government mega allocation from the federal account.

iv) The menace of ghost workers which had characterised previous government.

The above mentioned phenomenon has further high lighted the need for Niger State Science and Technical School Board to:-

a. Have more and update information about the organisation's resources.

b. Monitor the current manpower resources.

c. Assist in manpower planning and development.

Despite, the appreciation of the need for computer based personnel management information system in Niger State Science and Technical School Board it has not been easy for the personnel department to appreciate fully what a computer can do for it or how it should go about it.

In order to achieve a good computer based management information system there has to be a great understanding of the personnel management department and its function by the management services and then together they can harness the technology effectively.

Brief History of Science and Technical School Board.

Science and Technical School Board was created together with Secondary Education Board from Niger State Ministry of Education. The Board is mainly concerned with Science and Technology in Post Primary Institutions with the aim to promote technology for rapid development of our nation. The Board has a staff strength of 1000.

The administrative organisation structure comprises the following department:-

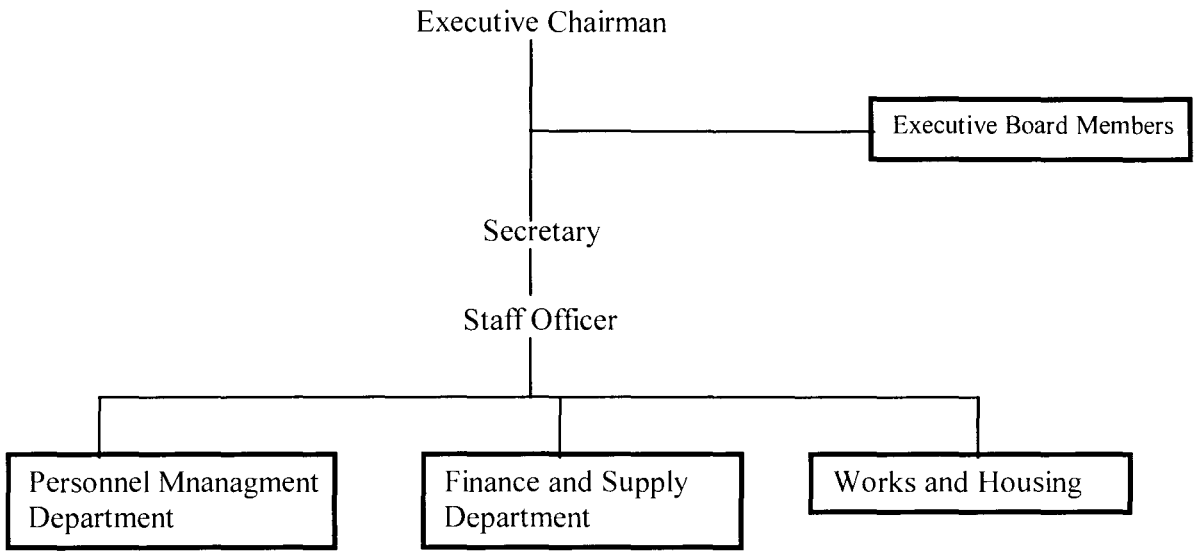
i) Personnel Department

ii) Finance and Supply Department

iii) Works and Housing Department

These are the major departments, however the departments have other subunits though the scope of our study is limited to the personnel management information system. Since the record of the personnel working staff are processed by the personnel management department.

THE ORGANISAITONAL CHART.



1.2 SCOPE AND LIMITATION.

This is composed in five chapters, designed to identify, the relevance of computer in personnel management system and the problem associated with it.

This research is only limited to Niger State Science and Technical School Board, being the case study of the research work.

1.3 AIMS AND OBJECTIVE OF THE STUDY.

a) To permit the smooth running of government ministries and department activities and administration.

b) To enable government equip its department ministries and parastatas etc.

c) to have the effective communication and accurate presentation of data.

d) to adequately appreciate the importance of computers in both private and public organisation.

1.4 THE NEED FOR COMPUTERISATION.

Computerisation is necessary in every reputable organisation in other to meet up with the modern societies. In particular, in the personnel management system, in these ways:-

- To achieve accurate information
- to ensure security in information and records
- To enhance job performance
- To provide for easy retrieval and update information and record when the need arises.

Despite all of these functions of computer it also has these characteristics that make it necessary to most organisations to operate it successfully such as:-

i) Recording information

ii) Classification of information

iii) Sorting of information

iv) processing of data

v) Reporting of information

CHAPTER TWO.

ANALYSIS OF THE SYSTEMS.

Personnel management information system in Science and Technical Schools Board is particularly a very difficult one, as virtually all the tasks involved, are done manually.

It is pertinent to note here, that all the functions of personnel department are carried out by the administrative staff. A file is opened for each member of staff, containing his/her application letter and credentials. This file is termed a general file. Upon obtaining the necessary approvals, and an offer of appointment given, a second file is opened for each member of staff, containing his/her application letter and credentials. This file is termed a secret file. While the General file is kept in the open registry the secret file is kept in the secret registry.

When there is a need for information or reference to be made to a particular file, it is traced manually in the registry, and upon location of the file it is minuted to the officer requesting for it. It is eventually returned to the registry for storing.

2.2 LIMITATION OF THE EXISTING SYSTEM:

As earlier stated in art 2.1, tasks are done manually in science and technical schools board. As such, in addition to the endemic problems of time management, storage of documents and retrieval of information, such problems as listed below have been recorded.

- Poor security and safety of files: as files will have to be manually moved from one personnel to another there comes the attendant problem of handling resulting in file mutilation and destruction.
- Reported cases of missing files/vital documents. Files/Vital documents on transits are sometimes misdirected or out rightly forgotten else where resulting in the loss of the file/document.
- DATA processing is always slow: as files will have to be moved from one personnel to another.
- Operations are prone to error.

2.3 ANALYSIS OF THE PROPOSED NEW SYSTEM.

The proposed new system implores the application of an electronic data processing system to replace the manual data processing system.

Electronic data processing supply some of the information needed by managers in the formulation of personnel policy.

Personnel management information can be defined as the information relevant and essential to the planning, control and operations of all personnel in the organisation. These data has been classified into four principal types:

- Operating data: Is at the lowest level of the information hierarchy and consists of such items as wages, and statements, which keep the organisation in operation.
- Resources data: Deals with the resources of personnel and indicates their quantity and location at a given time.

- Resources data: Deals with the resources of personnel and indicates their quantity and location at a given time.
- Progress data: Comprises of comparisms of objectives with what, in reality has been attained so that management can effect the appropriate adjustments to plans and schedules.
- Decision making data consists of future strategies the implications of various alternatives and the data needed for policy formulation.

Consequently, the proposed new system will be analysed, adopting the following.

- Methods of data/file generation
- Methods of file organisation
- File movement
- Security of files.

The method of file generation is similar to that used in the manual system. Application letters and attached credential are received from respective individuals, and all information regarding each individual is obtained from the submitted documents and fed into the computer by operating personnel.

The method of data processing adopted here is that each personnel will be given an identification number from which he/she is uniquely identified in the data base to be extracted. All other data are attached to the I.D card number of the personnel. So instead of having separate files for each personnel on the same type of data information A single file for all personnel is kept. This is often referred to as the DATA BASE FILE.

- **METHOD OF FILE ORGANISATION/STORAGE.**

The single database created is given a name and this is fed into the computer memory for storage. The file name here, replaces the cabinet's while the contents of the file is replaced by the information/data in the database.

- **FILE MOVEMENT:**

All information required from a file can easily be viewed on the screen by issuing commands that will relay the specific information required.

- **FILE STORAGE:**

Since all information is stored in the computer memory, manual handling of files, is eliminated hence the elimination of reports of missing files and file mutilation.

2.4 ADVANTAGE OF THE PROPOSED SYSTEM.

The impact of the proposed new system cannot be over emphasised. The many advantages of the new system will include.

- Facts which hitherto were not presented to management owing to conflicting demands on scarce clerical time and effort or were obscured in a mass of trivial detail are now dearly indicated.
- A situation, which could cause trouble can be recognised in time with the help of the electronic data processing system.
- The speed of electronic data - processing system provides facilities for rapid feedback and continuous critical appraisal of operations.
- Adjustments can be speedily made to new conditions and estimates revised without delay.

- Planning periods can be considerably shortened.
- Information may be organised more concisely with the result of extending the range of management thinking.
- Increase in the operation span of managers and reduction in the number of middle level personnel required with a consequent reduction in wage bills and space requirements.

It will be accurate to state that a well designed computer system will supply management with an abundance of relevant and accurate information which can be speedily obtained and circulated to the appropriate departments.

It will be accurate to state that a well designed computer system will supply management with an abundance of relevant and accurate information which can be speedily obtained and circulated quickly to the appropriate departments.

The emphasis here is (on improving the quality and relevance rather than the quantity of information.

2.5 RELEVANCE OF COMPUTER TO THE ORGNISATION.

After carefully analysing the existing system with it's attendant problems, and after discussing the proposed new system enumerating the benefits, the relevance of the electronic data processing to science and Technical School Board can not be over emphasised.

Electronic data processing can indicate clearly the results of decisions by lower management personnel and thus be useful in personnel evaluation by the higher levels of management. At the same time, the pressure on top management action will be increased since the actions of higher management are subject to more scrutiny than previously.

An electronic data processing system enriches the work-content of higher management by taking away clerical chores and routine decisions.

Middle management level will have more facts instantly available so that he could be more clearly able to see the probable effect of his own decisions on the organisation as a whole.

Judicious use of simulation techniques could assist the middle management level in the consideration of alternative methods of achieving their sub-goals.

Top management will have vital information almost instantaneously at his finger tips so that decision can be based on the current state of the board.

The personnel manager will be able to browse at will through the central files and since these are produced almost instantaneously, the need for voluminous reports will diminish.

CHAPTER THREE

ANALYSIS OF THE FIELD WORK.

3.1 RESEARCH METHODOLOGY.

The investigation of an office system must involve gathering information about the objectives of the system existing procedures and the working papers (forms, reports, and file records) used.

According to Hill - way and Tyrus (1964) in their Book titled. Introduction to research, "in any given investigation, it may be necessary (Infact frequently desirable) to use two or more investigation techniques" in combination.

This research work therefore employed the following fact finding techniques: Lecture notes, published papers, text books and oral interview of officials of the Personnel Department of the Science and Technical School Board, Minna.

Informed Management usually require that a system will give timely information for the making of decisions and the control of information. Invariably wider objectives are expected when the new system is installed.

The Science and Technical schools Board has a procedural manual which contains details of the clerical procedures involved in various office task. Since there has always been a reason for changes in the system, it follows that the differences between the manual and the system reflect the most crucial aspects of the system, and therefore a perusal of the manual is by no means a valid Substitute for actual observation of the appropriate personnel.

A full knowledge of procedures of the Science and Technical Schools Board was best gained by observation of the office at work and by interviewing every one concerned as to

the precise nature of their task. Vital information was obtained by such interviews as the office personnel had intimate acquaintance with the area and are aware of day-to-day problems.

The underlisted guidelines were followed when conducting the interview:-

i) Sending out of questionnaire to staff of the personnel department. Special attention was paid to the procedure for the answering of random queries and the volume of such queries noted.

ii) Control procedures and the manner in which errors are made, and corrected errors are returned to the system was also ascertained.

iii) a sympathetic personality was assumed by the researcher, and interruption of routine work of the office was kept to a minimum.

iv) Observation at the offices used, noticed in the board, are i.e. 2 electric typewriters, and (2) computers for the finance department the board had no duplicating machines or photocopying machines.

3.2 SCOPE OF THE FEASIBILITY STUDY:

The amount of data collected for the feasibility study was limited to the following.

i) Personnel data

ii) Method of data processing

iii) Method of data organisation/storage

iv) Efficiency and effectiveness of personnel

v) Security and safety of files.

3.3 ANALYSIS OF THE STUDY.

A critical analysis of investigation performed on the personnel management information system of Science and technical Schools Management Board revealed particularly astonishing lapses/problems in the overall operational procedure of the board. As earlier mentioned in Art 2.2. Operational task are done manually and have given rise to problems listed below:

i) The speed with which data is collected and processed is particularly slow and cumbersome. This has resulted in delays and in ability to meet the challenges of day to day running of the board.

ii) Information on personnel matter is not really available.

iii) The existing system has given room for much error.

iv) There is almost complete absence of data security and safety.

3.4 FEASIBILITY STUDY OF THE PROPOSED SYSTEM.

Feasibility study of the proposed system reveals that: The cost of implementing the proposed system is very affordable, as the board can handle the financial implications, and as all the components of the proposed system are available locally.

- Indoor training will have to be given to existing personnel to handle the new system.
- Top management has accepted the idea of computerisation as there is a need for change to a more effective means of data processing.

3.4.1 BENEFITS OF THE PROPOSED SYSTEM.

The benefits of the new system can be enumerated as follows:

i) Reduction in staff strength in the personnel department

ii) Fast means of data processing and information presentation.

iii) Reduction in space occupied by files and cabinents.

iv) Avoidance of duplication of effort

v) Higher level of accuracy

vi) More effective and efficient department.

3.5 THE PROGRAMING LANGUAGE.

dBase IV has been chosen as the programming language to be used in developing the proposed system. dBase IV was chosen due to the powerful and useful features it possesses. Some of these useful features are highlighted below:-

- Information storage and retrieval of data: Storage, retrieval, and organisation of information in an efficient matter is better handled in dBase IV than in other micro-computer based DSMS.
- Programming command: Its commands are short, easy to understand and co-ordinated.
- Security: dBase IV has features that track program bugs.
- dBase IV is user friendly and allows for customisation.

3.5.1 INTRODUCTION TO dBASE IV.

Database management System (DBNS) is a software that constructs expands and maintains data in a data bank. It also provides the interface between the user and the data, in such a way that it enables the user to record, organise, select, summarise, extract, report on, and manage the data contained in the Databank.

dBase IV organises data into database file. A database file is a collection of related records. It is in form of a two dimensional table consisting of a number of rows and columns. Each row represents a record in the database file and each column represents a field in the record of database file. Therefore, a database file is made up of some components which are records and fields. A record is all the information about a single item, while a field is a unit of information within each record of a database file.

When applied to personnel records, a database file can be set up to keep the records of employees, this is done in such a way that each employee's information e.g. employee's number name, age, sex, department, rank, grade, level, date of first appointment, annual leave, etc, is provide for.

3.5.2 METHOD OF PROCESSING DATA IN dBASE IV.

dBase IV provides two different methods of processing data stored in database files. These are interactive processing mode and batch processing mode.

In the interactive processing method, two options are available, namely:-

Control centre mode and Dot prompt mode. In the control centre mode, commands are supplied to the user by typing from the keyboard. In each case, the commands are interpreted and executed by dBase IV to produce results.

For the Batch processing method, the command is stored in the form of a program and are executed in groups.

3.5.3 DESCRIPTION OF THE CONTROL CENTRE.

The control centre is a graphic environment that allows for an easy way to manage and access files. It also serves as the gate way to interact with the programme in areas as design analysis, print reports, labels etc. The control centre will enable a non-professional to manage a database with less training.

The control centre provides substantial amount of information, with the top left part of the screen known as the menu bar, showing the three menu items viz:-

i) Catalog

ii) Tools

iii) Exit.

A catalog is a group of related files, which may include database, views, forms, reports, labels, and programs. Therefore, the catalog menu allows one to select and modify data files and other related files to be used in the appreciation.

The tools menu provide useful utility for data management for import and export of data, for continuity and for the way to interact with the program.

Finally, the exit menu gives the option of quitting dBase IV, or jumping to the Dot prompt mode.

3.5.4 DESCRIPTION OF THE PANEL.

1. **DATE PANEL;** Database files are created in this panel. This contain data to be used in a data management environment.

2. **QUERRY PANEL;** Query files are created in this panel, to filter out records from the database. All query parameters are specified in the file so as to be able to list out records that meet the specified conditions.

3. **REPORT PANEL;** A report file generally contains information used for generating a report and is created and this file.

4. **LABEL PANEL;** This is used to create labels which will generate information from a database file.

5. **APPLICATION PANEL;** This is used for advanced dBase IV uses to either enter instructions in form of program or for application generation.

3.6 HARD WARE REQUIREMENTS.

3.6.1 HARDWARE.

The hardware of a computer refers to the various mechanical, magnetic, electrical and electronic parts of a computer.

A computer with the following hardware specification has been proposed.

1) IBM Pn.

INTER 80486 SX/33MHz EISA Processor - Tower Case

4MB RAM (EXPANDABLE OF 64MB)

200MB IDE, Harddisk, 15NS seek time

2 Serial I parallel parts

4 Fee Expansion Slat

3.5" Floppy disk drive

MONITOR

14" Colour SUGA (1024 x 768 PIXEL 0.28)

PRINTER

LaserJet Printer

Back Up Device:

External Tape drive

APC Smart Un-interuptable Power Supply (UPS).

2. SOFTWARE REQUIREMENT:

The software of a computer system is a collection of programmes that is responsible for controlling the activities of the computer. Software requirement essential as proposed are listed below.

i) MS-Dos Operating System Version 6.0

Tai Lored Program

Dbase IV.

ii) Consumable

Sonny Data Cartage,

3.5" HD Diskettes

5.25" HD Diskettes.

iii) Accommodation and Furniture

a) Computer Chair and Table

b) air condition.

3.7 SYSTEM CHANGE OVER.

The system change over plan includes a description of all the activities that must occur in putting the new system into operation.

The underlisted tasks were carefully planned as a pre-implementation stage.

i) Listing of all files for conversion

ii) Identifying all data required for building new files for conversion.

iii) Establishing procedures for cross checking both the existing and new system.

iv) Verifying conversion schedules.

Some of the most frequently occurring problems are missing documents, missing data or lost files and situations that were over looked during system development. The change over schedule should anticipate all these. It is envisaged that the system change over will not be whole scale but will be done in phases. This means processing current data using a combination of existing and the new systems.

The main attraction of parallel running is that the old system is kept alive operational until the new system has proved to be adequate. It allows the results of the new system to be compared with the old system before acceptance by the user, thereby promoting user confidence.

CHAPTER FOUR.

PROGRAM IMPLEMENTATION PHASE.

4.1 THE PROGRAM.

The proposed new system is to work with a detailed sequence of instructions, called the "PROGRAM", which the computer processes in the desired manner.

The program is written in some form of comptuer langauge, which is basically of two types, Viz: the instruction code of the particular computer, and the automatic programming language.

4.1.1 THE INSTRUCITON CODE:

The basic instruction language, called the machine code or machine language, consists of a numerical function code and an address of a unit of store on which the desired function is performed.

A sequence of machine instructions, is punched into tape or on codes, and is read into the computer store and obeyed one by one by the computer.

There are four main types of machine instructions.

a) Arithmetical

b) Transfer: Taking data from one part of the store to another.

c) Logical: Which allows a jump to another part of the store if a certain condition is present.

d) Input/Output and magnetic file instructions

1) Program Planning: problems were first appreciated, input data, and required output with formula needed were identified.

2) Program design: Set of rules required for solution to the problems, were defined.

3) Coding: Transforming solutions of the problems into forms understandable by the computer.

4) Debugging: Detecting and removing program errors.

5) Testing: Ascertaining program validity

6) Implementation: Making the program fully operational

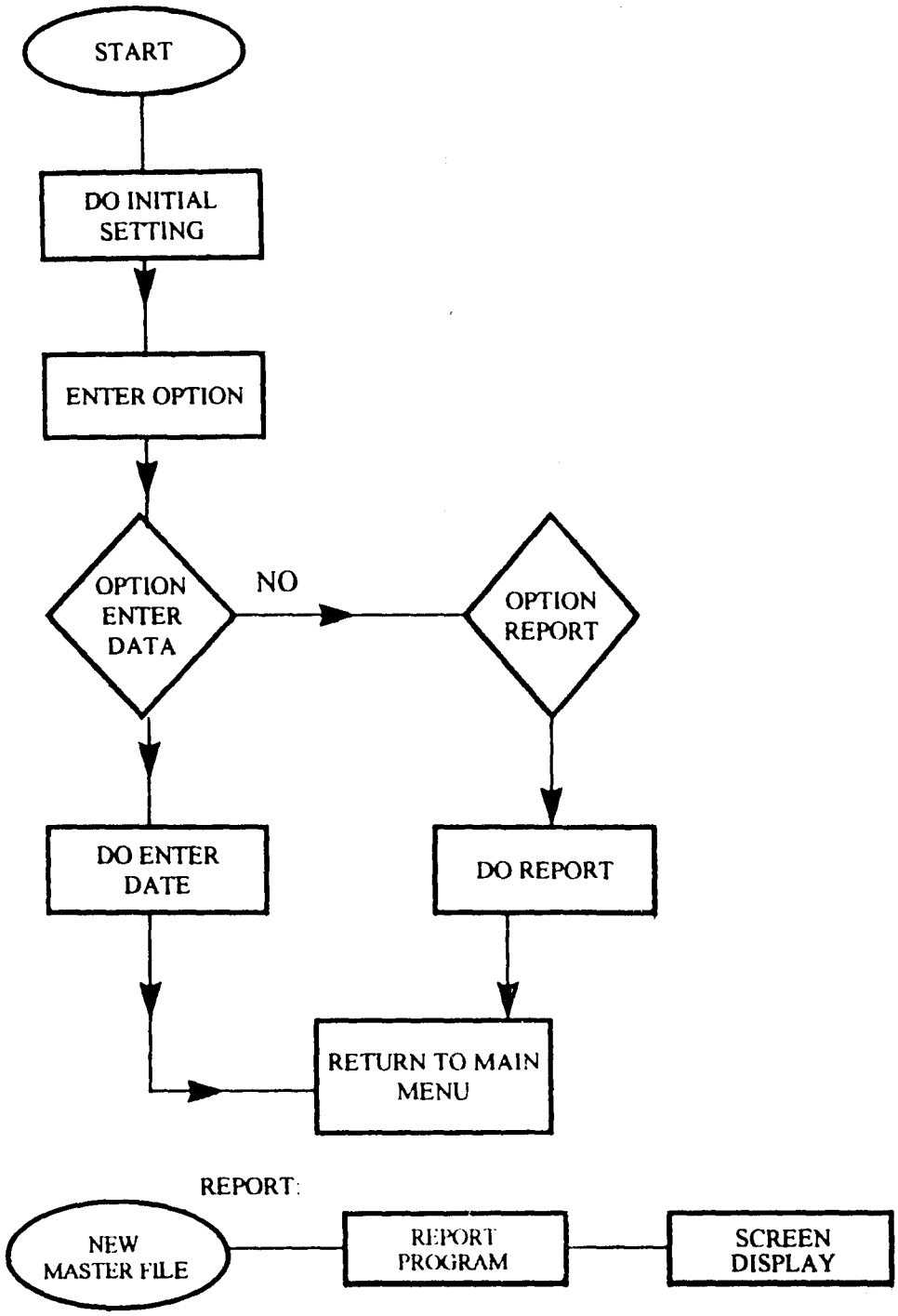
7) Documentation: Description of the program in the proper form for users and to enhance maintainability.

See appendix for developed programs.

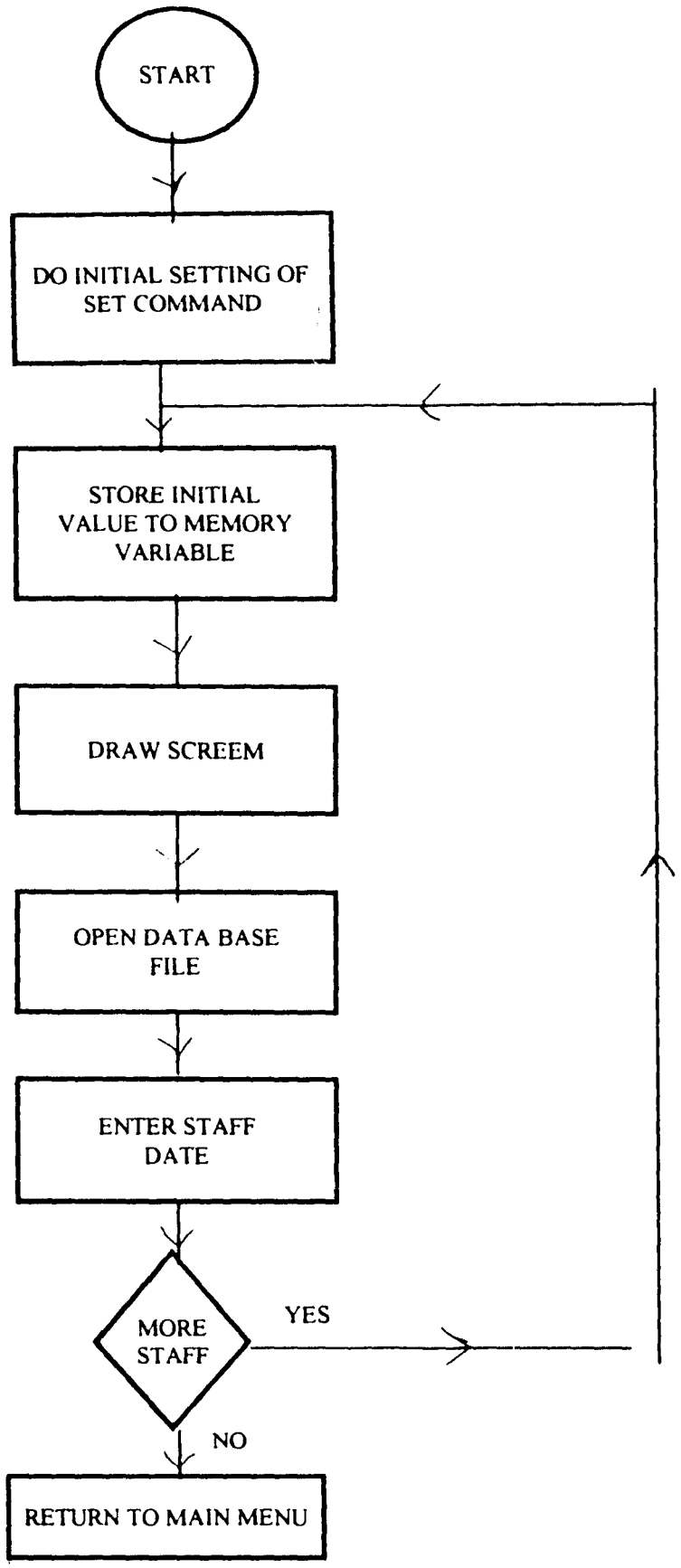
4.2 FLOWCHART OF THE PROPOSED SYTEM.

A flowchart is a graphic representation of the steps needed for solution to specific problems. It makes communication easy and unambiguous between computer experts and users.

MAIN MENU


START
DO INITIAL SETTING
ENTER OPTION
OPTION ENTER DATA
NO
OPTION REPORT
DO ENTER DATE
DO REPORT
RETURN TO MAIN MENU
REPORT:
NEW MASTER FILE
REPORT PROGRAM
SCREEN DISPLAY

ENTER NEW STAFF RECORD



4.3 INPUT/OUTPUT SPECIFICATION.

The input specification to the program will be the name of all personnel working in the various departments of science and technical schools board.

The output from the files are records of staff working the Science and Technical School Board. The reports could either be in hard copy or on the monitor.

4.4 PROGRAM USER MANUAL.

The program staff PRG is written in dBase IV. This program will replace the manual operation of preparation of nominal roll etc as well the maintenance of dBase IV! The complete program is shown in appendix.

4.5 SYSTEM IMPLMENTATION:

System implementation includes all tasks to be performed in converting to the new system, since the time when the decision to computerise was taken down to the time the new system is fully operational. The implementation stage includes.

i) **SYSTEM INSTALLATION**: As specified in chapter three, the installation of the system is done by a hardware specialist.

ii) **TRAINING NEEDS:** The existing personnel is given in house training to enable them have basic knowledge on operating the computer and other peripheral devices attached to it.

iii) **PROGRAM MAINTENANCE:** This involves routine updating of program to cope with changing needs of the organisation.

iv) **SECURITY METHOD**: Data has to be protected from unauthorised persons. And methods used to protect data include.

1) Introduction to password

2) Locking-up drive bays

3) back-up system: Refers to the copy of the database kept away from the main system.

CHAPTER FIVE.

SUMMARY AND CONCLUSION PHASE.

5.1 MERITS AND DEMERITS OF COMPUTERISATION.

From the simplest routine data processing system to be most elaborate real -time information system, the merit of computerisation, either in the formulation of policy, the control of operations, or the assessment of the degree to which organisational objectives and goals are attained can not be over emphasised.

This research conducted on computerisation of personnel management information system of Science and Technical Schools Board will achieve tremendous success in the following areas:

i) Reduction in staff strength: prior to computerisation more hands were required in the personnel department to carry out clerical and presentation routines. Computerisation has reduced the staff strength as only a few hands are now required to operate the new system, consequently reducing high wage bills and redundancy.

ii) Reduction in space occupied by files and file cabinets. Before computerisation, a large number of files was kept in large cabinets. This occupied large volume of space. Computerisation has drastically reduced this space occupied by these files and file cabinets.

iii) High speed of processing data and presentation of information:- the speed of a computerised system provides critical appraisal of operations.

iv) A computerised system, increases the operational span of control of a manager. Information is organised more concisely with the result of extending more concisely

with the result of extending the range of management thinking. Presents facts and statistics so that the decision arising from them is automatic, facts which hitherto were not presented to management due to conflicting demands on scarce clerical time and effort or were obscured in a mass of trivial detail, now clearly indicate conditions needing some urgent action.

v) Storage and information security! Prior to computerisation , personnel records kept in both open and secret registries were not protected from un-authorised persons, and this resulted in cases of missing files, defacing of pages of files, and secrets. The computerised system now guaranties information security from un-authorised persons, by the introduction of "Pass word" to the database which is known only to the database manager and the computer operator. Locking up drive bays so as to prevent un-authorised copying and entering of data.

vi) Cost Effective, Efficient: the introduction of the computer has greatly reduced the cost of buying paper file tags as cabinets which could even cost more than the computer itself.

Computers unlike humans are capable of operating under the most adverse condition for extended periods of time without showing sign of fatigue. They consistently provide the same result under all operating conditions and are therefore reliable and have a high degree of accuracy.

The new system will off course have some initial problems. Viz:-

i) Redundancy: With the new system, few hands are required, resulting in a large number of staff being redundant.

ii) Skill: the new system will require that skilled personnel are available to handle operations. There is therefore a need for training of personnel.

iii) The new system requires special operating conditions e.g. steady power supply, air conditioned rooms etc.

5.2 CONCLUSION.

In concluding this research, implementing this research, by introducing a computerised personnel management information system of the Science and Technical School Board, will greatly ensure effectiveness and efficiency of the personnel department.

The new system will provide a fast, reliable, and accurate means of processing data. The new system will provide security of information and reduce both the number of personnel to handle data and the amount of space required. It is also very cost effective.

5.3 RECOMMENDATION.

As a result of the finding of this research, the following recommendation are proffered to ensure success of the new system.

i) There is a need to establish a computer literacy centre in the board to train personnel in operating the new centre. This will reduce the cost of training staff outside.

ii) There is a need to have a separate computer room, fully air conditioned with sufficient lightening to house the new system.

iii) It is also important to recommend a generating plant to provide steady power or in the alternative, an un-interruptible power supply system. This will prevent system breakdown due to intermittent power outages.

iv) Though the most common use of the computer is in the making of low-level decision such as the implementation of a routine control policy. It is important that top-management be involved and committed to the new system.

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APPENDIX.

1.The PROGRAM

The main program control other sub programs such as append, correct, sack, list, and exit:

The main program:

```
** SET ENVIRONMENT
        SET TALK OFF
        SET STATUS OFF
        SET SCORE BAORD OFF.
*** INITIALS ENVIRONEMNT ***
        OPT=0
        TODAY = DATE ( )
        TIME  =  TIME ( )
        @ 2.5 TO 14,55 DOUBLE
        SET COLOUR TO *GIB
        @ 3.25 SAY "MAIN MENU"
        SET COLOUR TO R/G
        @ 3.8 SAY TODAY
        @4.25 SAY TIME
        SET COLOUR TO
        @4.45 TO @ 6.14
        @ 6.25 SAY "I"APPEND"
        @ 7.25 SAY "2" CORRET"
        @ 8.25 SAY "3" DELETE"
        @ 9.25 SAY "4" LIST
        @ 10.25 SAY "5" EXIT
        @ 12.10 SAY "ENTER CHOICE (1-5)" GETOPT PICT "8" RANGE 1.5
        READ
        *** EVALUATE OPTIONS.
        DO CASE
                CASE OPT - 1
                        DO APPEND
                CASE OPT - 2
                        DO CORRECT.
                CASE OPT = 3
                        DO DELETE
                CASE OPT = 4
                        DO LIST
                CASE OPT  =  5
                        DO EXIT.
```

2. THE APPEND PROGRAM:

The append program is a sub program to add new records to the existing record in the detabase file.

The append sub-program;-

```
*.....
*Name SCRMAS. FMT
*Date 26 - 06 - 2001
*Version dBase IV. FORMAT 2.0
*Notes format files use " " as delimiters!
*.....
Do While ....+
        CLEAR
                USE MAS
                SET TALK OFF
                SET ECHO OFF
                SET STATUS OFF
                SET COLOUR TO
*.....initialising variable.....
STORE O TO mFile NO.mBasic .mGrade - mH - allow - mI - allow, mT - allow.
STORE SPACE (12) TO mSname, mFname.
*...@ SAY GETS PROCESSING.....
        @5, O SAY "FILE NO" "get mfile No picture "9999"
        @8, 9 GET Msname PICTURE "xxxxxxxxxxxxxxxxxxxxxxx"
        @8,22 GET mfname PICTURE "xxxxxxxxxxxxxxxxxxxxxxx"
        @9.0 SAY "GRADE" get mGrade PICTURE "9"
        @11.0 SAY "BASIC" get mBasic PICTURE "999999.99"
        @12.0 SAY "HOUSE ALLOWANCE "get,MH-allow PICTURE "999999.99"
        @13.0 SAY "INSURANCE Allowance" Get m.I.allow PICTURE "9999.99"
        @14.0 SAY "TRANSPORT ALLOWNACE" Get mT-Allow PICUTRE "99999"
        READ
                LOCATE FOR mFile No  = File NO.
        IF FOUND ( )
                @19.6 CLEAR TO 21.74
                @20.22 SAY "This FNumber already exists".
                @21,22 SAY "Press ® To Register Staff".
                Do WHILE i = 0
                                i = IN KEY ( )
                END DO
                        IF CHR (i) & 'Rr'
                                        LOOP
                        ELSE
                                EXIT
                        ENDIF


                @ 19.6 CLEAR TO 21.74
                @ 20.22 SAY "Is this information correct? (Y/N)
```

```
            i   = 0
        DO WHILE i   = 0
            i   = INKEY ( )
END DO
        IF CHR(i) & 'yY'
                    LOOP
        ELSE
                    EXIT
        END IF
        END DO
        CLOSE  DATABASE
        •   EOP SCRMAS: FMT
```

3. THE LIST PROGRAM:

The program is a sub-program under the main program and lists the number of staff within a grade level of the whole of staff and prompt for move listing of automatic deletion to the main program.

```
THE LIST PROGRAM:
*.....
*Name          SCRMAS. FMT
*VERSION       dBASE IV FORMAT 2.0
*NOTES         FORMAT FILES USE ""as delimeters!
*.....
DO WHILE "t"
CLEAR
USE MAS
SET TALK OFF
SET ECHO OFF
SET COLOUR TO
*.... INITIALISING variables.....
STORE O T O m UpGrade, mLw Grade, *@ SAY Get "processing"
@5.O SAY "LOWER Grade" get mLw Grade "99"
@6.0 SAY "UPPER  GRADE" get mUpGrade "99"
READ
        IF mLw Grade > mUp Grade
@15, 20 SAY "Upper Grade must be higher or equal to lower grade"
Wait
Loop.
Else
CLEAR
@1,1 SAY "Listing of staff within grade" + L TRIM (STR (mLwGrade)+
                "and" + L TRIM (STR(mUpGrade).
DISPLAY FOR GRADE <=mUpGrade AND Grade> = mLwGrade Off
WAIT
@20.58 SAY CHR (i)
IF CHR(i)& 'YyNn'
                EXIT
ELSE
        .i=0
                LOOP
END IF
END DO
IF CHR(i) & Nn
@19.30 SAY'(c)orrect or (E)xit
.i=0
Do While .i=0
                .i = inKEY(.)
```

```
If CHR(i)&CcEe
                EXIT
END IF
END DO
If CHR(i)&Cc
        Loop
ELSE
        @0.0CLEAR TO 23.79
        @12.29 SAY "Registration abandoned"
        EXIT
END IF && FOR 'Cc'
END IF & & FOR' Nn'
IF CHR(i) & 'Yy'
APPEND BLANK
        REPLACE FILE NO WITH mFile NO, Sname with mSname
        REPLACE Fname WITH mFname, Grade with mGrade
        REPLACE BASIC WITH mBasic, H-ALloW with mH-ALLow
        REPLACE I- ALLOW WITH m I-allow, T-ALLOW WITH m T- ALLOW
        @19,6 CLEAR TO 21,74
        @20,22 SAY 'Any more registrations? [Y/N]'
                i=0
DO WHILE   i=0
                i=Inkey ( )
                @20,58, SAY CHR(i)
                If CHR(i)&'YyNn'
                        EXIT
                ELSE
                i=0
                        Loop
        END IF
        @19.6CLEAR TO 21.74
        @20.22 SAY ANY LISTINGS?(Y/N)
                i=0
        Do While .i=0
           .i = inKEY(.)
        @20,58 SAY CHR (i)
        If CHR(i)&YyNn
                EXIT
ELSE
                I=0
                LOOP
END IF
END DO
If CHR(i)&"Yy"
        LOOP
ELSE
        EXIT
        END IF
        END DO
CLOSE DATABASE
RETURN

* EOP: SCRMAS.F.M.T.
```

4. CORRECT PROGRAM.

The program automatically corrects a record or the whole record in the database file.

```
*.....
*Name          SCRMAS. FMT
*Date          26 - 06 - 2001
*VERSION       dBASE IV FORMAT 2.0
*NOTES         FORMAT FILES USE ""as delimeters!
*.....
DO WHILE "t"
CLEAR
USE MAS
SET TALK OFF
SET ECHO OFF
SET STATUS OFF
SET COLOUR TO
@.....Initialising Variables.....
STORE O TO mFile NO
*@SAY GETS Processing
@5.0 SAY "file No" get mFile No Dict "9999"
READ
LOCATE FOR mfile no  = Fileno
If NOT FOUND( )
@19.6 CLEAR TO 21, 74
@20,22 SAY' This File number does not exist'
@21,22 SAY "Press [R] TO RE-ENTER FILE NO'
      .i=0
      DO WHILE i = 0
                  i = IN KEY ( )
      END DO
      IF CHR (i) & 'Rr'
                  Loop
      ELSE
                  EXIT
      END IF
      ELSE
            STORE Sname To mSname
            STORE fname To mFname
            STORE GRADE TO mGrade
            STORE BASIC TO mBasic
            STORE H-allow To mH-allow
            STOTE T-allow To mT-allow
```

```
@8,0 SAY Names
@8,9 GET mSname PICTURE "xxxxxxxxxx"
@8,22 GET mFname PICTURE "xxxxxxxxxxxx"
@9,0 SAY "GRADE" get mGrade PICTURE "99"
@10,0 SAY "BASIC" get mBasic PICTURE "9999.99"
@11,0 SAY "HOUSE ALLOWANCE" get mH-allow PICTURE "999999.99"
@12,0SAY "INSURANCE ALLOWNACE"get mT-allow PICTURE "9999.99"
@13,0 SAY "TRANSPORT ALLOWANCE"get mT-allow PICTURE "9999.99"
        READ
        @19,6 CLEAR TO 21,74
        @20,22 SAY' is this information correct"? [Y/N]
                i=0
        DO WHILE i=0
                        i=INKEY ( )
                        @20,58 SAY CHR (i)
                        IF CHR (i) & "yYnN"
                                        EXIT
                        ELSE
                                i=0
                                Loop
                        END IF
        END DO
                IF chr(i)& "Nn"
                @19,6clear to 21,74 && to erase the message box
                @20,30 SAY'[c]orrect or [E]xit
                i=0
DO WHILE   i=0
                i=Inkey ( )
                If CHR(i)&CcEe
                        EXIT
        END IF
END DO
        IF CHR(i)&'Cc'
                Loop
ELSE
        @0,0 CLEAR TO 23,79
        @12,29 SAY 'correction abandoned'
                EXIT
        END IF && FOR Cc
END IF && for "Nn"
        IF CHR (i)& 'Yy'
        REPLACE FILE NO WITH mFile No, Sname with mSname
        REPLACE Fname WITH mFname, Grade with mGrade
        REPLACE BASIC WITH mBasic, H-ALLOW with mH-allow
        REPLACE I-ALLOW WITH  mI-allow, T-allow mT-allow
        @19,6 CLEAR TO 21,74
        @20,22 SAY 'Any more corrections? [Y/N]'
                        i=0
DO WHILE   i=0
```

```
                i=Inkey ( )
                @20,58, SAY CHR(i)
                If CHR(i)&YyNn'
                        EXIT
                ELSE
                        i=0
                        Loop
        END IF
        END DO
        If CHR(i)&Yy'
                        Loop
        ELSE
                        EXIT
        END IF
        END IF
        END DO
CLOSE DATABASES
RETURN
* EOP: SCRMAS.FMT.
```

5. DELETE PROGRAM.

```
        *.....
        *Name       SCRMAS. FMT
        *Date       26 - 06 - 2001
        *VERSION    dBASE IV FORMAT 2.0
        *NOTES      FORMAT FILES USE ""as delimeters!
        *.....
        DO WHILE "t"
        CLEAR
        USE MAS
        SET TALK OFF
        SET ECHO OFF
        SET COLOUR TO
@.....Initialising Variables.....
        STORE 0 TO MFILE NO
*@SAY GET Processing
@5.0 SAY "file No" get mFile No Dict "99999"
READ
LOCATE FOR mfile no  = Fileno
If NOT FOUND( )
@19.6 CLEAR TO 21, 74
@20,22 SAY' This File number does not exist'
@21,22 SAY "Press [R] TO RE-ENTER FILE NO'
         .i=0
        DO WHILE i = 0
                    i = INKEY ( )
        END DO
        IF CHR (i) & 'Rr'
                    Loop
        ELSE
                    EXIT
        END IF
        ELSE
              STORE Sname To mSname
              STORE fname To mFname
              STORE GRADE TO mGrade
              STORE BASIC TO mBasic
              STORE H-allow To mH-allow
              STOTE T-allow To mT-allow
        @8,0 SAY 'NAME'
        @8,9 GET mSname PICTURE "xxxxxxxxxx"
        @8,22 GET nFname PICTURE "xxxxxxxxxxxx"
        @9,0 SAY "GRADE" Get mGrade PICTURE "99"
        @10,0 SAY "BASIC" Get mBasic PICTURE "999999.99"
        @11,0 SAY "HOUSE ALLOWANCE" get mH-allow PICTURE "999999.99"
```

```
@12,0 SAY "INSURANCE ALLOWANCE" get mT-allow PICTURE "9999.99"
@13,0 SAY "TRANSPORT ALLOWANCE" get mT-allow PICTURE "9999.99"
        READ
        @19,6 CLEAR TO 21,74
        @20,22 SAY' sure, you want to sack this staff? [Y/N]"
                i=0
        DO WHILE i=0
                        i=INKEY ( )
                @20,58 SAY CHR (i)
                IF CHR (i) & "yYnN"
                                EXIT
                        ELSE
                                i=0
                                Loop
                        END IF
        END DO
                IF chr(I)& "Nn"
                0,0 CLEAR TO 23,79
                @12,29 say 'Deletion a bandoned'
                EXIT
        ELSE
                delete
                @19.6 CLEAR TO 21, 74
                @20,22 SAY 'Any more sacks?[Y/N]'
                i=0
DO WHILE   i=0
                i=Inkey ( )
                @20,58 SAY CHR( )
                If CHR(i)&'YyNn'
                        EXIT
                ELSE i=0
                        Loop
        END IF
END DO
        IF CHR(I)&'Yy'
                Loop
ELSE
                EXIT
END IF
END DO
CLOSE DATABASE
RETURN
* EOP: SCRMAS.FMT.
```