COMPUTERISATION OF STAFF RECORDS

A   CASE   STUDY   OF

NATIONAL POPULATION COMMISSION,   MINNA

BY

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A C K N O W L E D G M E N T

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COMPUTERISATION OF STAFF RECORDS

CASE STUDY OF NATIONAL POPULATION COMMISSION

MINNA

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ABSTRACT

Computers are now actively used in almost every part
of the business world. This work presents the computeri-
sation of staff record in a typical organisation.

The approach first of all visualises the origin of
computers and their applications to business in general,
then give an insight to staff record and the application
of micro-computers.

The Personnel Information System works by automati-
cally updating the staff record whenever there is a
change received per any staff whenever there is alteration
in the system.

Throughout history people have searched for improved
ways to process data and communicate information.

The effectiveness with which information is generated
and communicated determines the rate of progress of
society and the fulfilment of its people. Modern society
is information driven putting at another way. Thus the
project is based on improving the use and implementation
of personnel information systems on micro-computers.

1:0 COMPUTERISATION

The term 'computer' could literally be used to identify any device that calculates. Initially, the computer was designed as a tool to manipulate numbers and solve arithmetic problems. This original use is understandable. Since most of the early designers and users were mathematicians, scientist and engineers. However, people began to realise that the computer could process symbols (e.g. alphabets symbols) as well as numbers. Therefore, the literal interpretation of the word 'computer' makes the word something of a misnomer, since the computer does more than just carry out addition, subtraction, multiplication and division. Indeed, the computer can read input data, transfer or move date, store and retrieve data, test data by logical operations and generate output results. In view of the fact that its functions are broader than just computing, the computer is sometimes more descriptively called an electronic data processor (EDP) or an automatic data processor (ADP).

Today, computers are active in almost all divi-
sions of science and technology, and are doing their
jobs efficiently. Apart from pure computational work,
they control production processes, run traffic, handle
statistical work, do economic planning, gather and
process information and solve logic and other pro-
blems.

All computers may be divided into two broad
classes, analog and digital. In turn, each of these
two classes may further be subdivided into general
purpose machines capable of tackling a wide range of
mathematical problems, and special purpose machines
dedicated to a narrow class of problems or even a
specific problem. Although, less versatile because
of the more regimented relations between their units,
special purpose computers are more reliable, use
control, arithmetic, storage and other units of a
simpler structure and are compact. The class of
special purpose computers includes, for example,
control computers, digital differential analysers and
a variety of hybrid computing systems.

Recent years have seen a marked increase in the use of hybrid computers, that is, machines combining analog and digital principles. Analog computers operate on mathematical variables which appears as continuously varying physical quantities. The basis of analog computers is modelling.

Analog Computers are convenient to run. Also they present solutions in a simple and graphic manner in almost no time. Unfortunately, they are rather inaccurate and assisted by the development in micro-electronics two forms of which, the micro-processor and the micro-computer. The electronics of computer have been leading users further into pure information processing (information storage, retrieval and dissemination) with little or no computational content at all, into what has been defined as information.

One example of information processing is what constitutes one of the most common business uses of a computer: the keeping of names and address for circulation control. We are all on the receiving end of name-and-address systems, directly with computer - printed stick on labels, envelopes, magazine wrappers and the like, and indirectly in the form of computer printed bills with a name and address appearing

through window envelopes. The sole function of this computer application is to set up, maintain, store and print out a customer's name and address (along with some other information to registration status).

Finally, computers and telecommunications have also contributed to the objectives of collecting and disseminating knowledge. Their versatility is limited. The class of analog computers include electric integrators to solve partial differential equations, electronic machines to solve ordinary differential equations, machines to solve algebraic and transcendental equations and special purpose analog computers.

Digital Computers deal with mathematics variables in the form of numbers which represent discrete values of physical quantities. Any number is represented as a combination of states of individual elements each of which can reside in several stable (or equilibrium states). Digital computers are versatile, accurate and can solve practically any mathematical problems and elaborate logical operations.

If in a system analog, and digital computers are combined we talk of a hybrid computer. They combine the merits of both analog and digital machines.

In their evolution, digital and analog computer have been mechanical, then electro mechanical, electrical and finally electronic. The advent of electronic computers in 1946 - 48 opened up wide vistas for fast and precise solution to mathematical and logical problems.

The extension of the boundaries of computing in data processing has also been - it is often said that automation is changing our way of life from labour-based society to a knowledge-based society, and therefore the organisation of knowledge bases must make a significant contribution to this process.

1:2 LITERATURE REVIEW

The history of census taking in Nigeria dated to the history of the country as early as 1863, that is, one year after the founding of the Colony of Lagos. It is made clear that the coverage of the 1911 census was limited. The first comprehensive census of the country was taken in 1921 after the amalgamation of the Northern and Southern Protectorates in 1914. The first elaborate national census was conducted in 1952/1953 while the first post independence census was taken in 1962/63, another attempt at an elaborate census was made in 1973. It is observed that eleven censuses had been conducted since the founding of the Colony of Lagos.

The National Population Commission Decree No.23, 1989 was promulgated, the establishment is composed of a Chairman, seven other members and a Director-General who shall be an ex-officio member, to be appointed by the President, Commander-In-Chief of the Armed Forces. The functions of the Commission shall:-

(A) Undertake the enumeration of the population of Nigeria periodically through censuses, sample surveys or other wise.

(B) Establish and maintain a machinery for continuous and universal legislation of births and deaths throughout the federation.

(C) Prepare and maintain a national framework for the delineation exercise for census and sample surveys.

(D) Collect, collate, and publish data on migration statistics.

(E) Research and monitor the national population policy and set-up a national population data bank.

(F) Arrange for the appointment and training of enumerators and all other categories of staff of the Commission.

(G) Provide information and data on population for purpose of facilitating national planning and economic development.

(H) Advise the Federal Government on any population and population related programmes and problems.

(I) Disseminate information and educate the general public about the functions of the Commission.

(J) Do all such things as may be considered by the Commission to be necessary, desirable, expedient, supplementary or incidental, to the performance of the functions or the exercise of the powers conferred on the commission under this decree.

1:3 THE ORGANISATIONAL CHART

The organisation structure and functions are as follows:-

The entire country is divided into seven zones of which Niger State Branch (the case study) falls under zone 6.

Here in Minna the Commission is divided into three Departments, which their respective Head of Department Administration, Technical are vital.

Under each of the Head of Department are the various Controllers and under them are the technical staff   All these staff are headed by the Director.

Information: This set are passed to the Director from the Personal Assistant to the Staff Officers, then to the Personnel Officer through to the Head of Department then to the Director.

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                        ┌──────────────┐
                        │   DIRECTOR   │
                        └──────┬───────┘
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│   TECHNICAL     │  │   TECHNICAL      │  │   TECHNICAL      │
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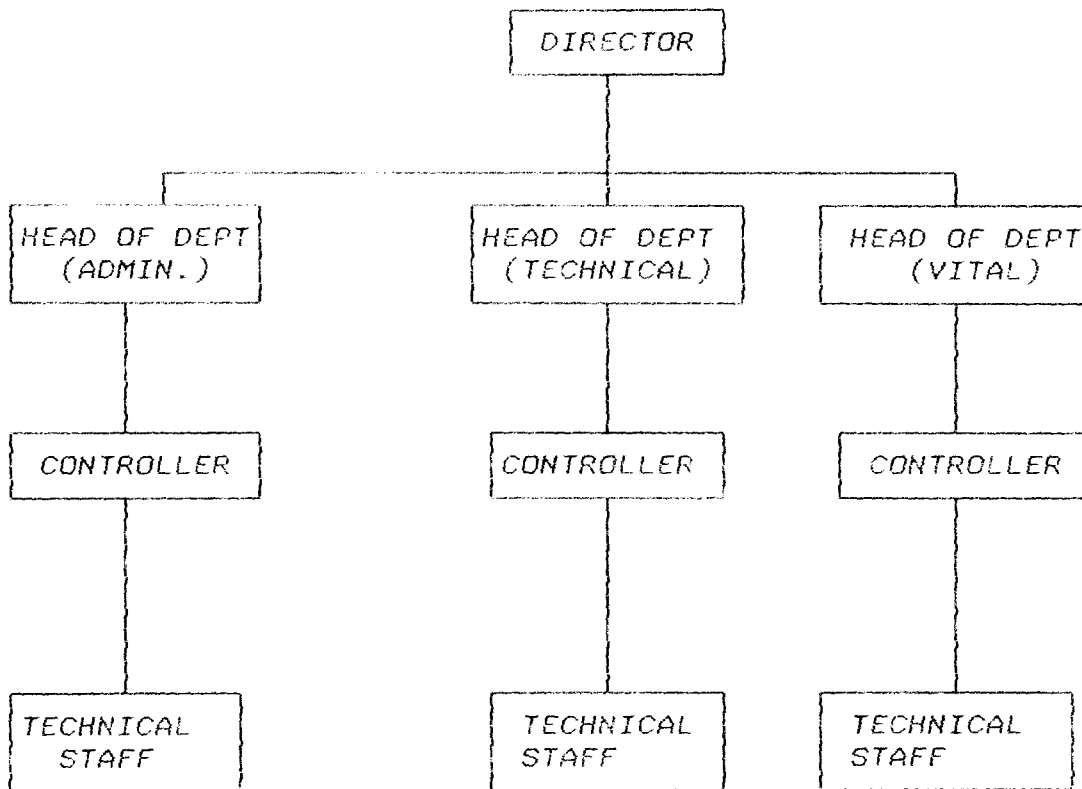
*ORGANISATIONAL CHART OF [NATIONAL POPULATION COMMISSION]

CHAPTER TWO

2:0 *FEASIBILITY STUDY*

> *PROJECT:*   *COMPUTERISED STAFF RECORDS (A CASE STUDY OF*
>
>   *NATIONAL POPULATION COMMISSION, MINNA)*
>
> *THE PROBLEM:*   *To seek and develop a system that would*
>
>   *ease storage and retrieval of staff*
>
>   *records.*
>
> *OBJECTIVES:*
>
> *(A) To investigate for other alternative, cost*
>
>   *effective and more efficient technique.*
>
> *(B) To reduce duplication of records.*
>
> *(C) To improve record keeping of staff.*
>
> *(D) To reduce management cost.*
>
> *(E) To minimise issue of cost records.*

2:1 *SYSTEM ANALYSIS*

> *The following methods were used in carrying out*
>
> *the analysis.*
>
> *i) Interviews: Asking Officers in-charge of the record*
>
>   *room.*
>
> *ii) Going through the existing records.*
>
> *iii) Studying the existing system and how it operates.*

2:2   OPERATION OF THE EXISTING SYSTEM

The keeping of records of the organisation are done directly y clerks in the file room.

2:2:1   STORAGE AND RETRIEVAL OF RECORDS

The newly employed staff goes to the Record room where a file is opened for him. These files are kept in the file cabinet according to their grade level and the position held, with the file number and names.

To retrieve any record, the file number, names and grade level must be known, with the information about any of these the clerk would go to the file cabinet and check for name of the file to be retrieved, (if the file number was supplied there is no need to check the name). He now goes to the cabinet and retrieve the file in question.

2:2:2   RECORD UPDATE

This is rarely carried out, usually once in a year as it includes large number of records. Where it is carried out it is done manually thus very tedious and time consuming.

He records the following particulars about the staff:-

- Name of Officer: ....
- File Number: ....
- Date of Birth: ....
- State of Origin: ....
- Marital Status: ....
- Qualification: ....
- Date of First Appointment: ....
- Present Appointment Date: ....
- Grade Level: ....
- Post: ....

The records are now gathered together to know the total number of staff in the organisation.

2:2:3 REGISTRATION OF STAFF

On the offer of employment to a staff, staff is expected to go to the open registry where all particulars needed will be collected to be entered in computer through the proposed system.

2:3 PROBLEM WITH THE EXISTING SYSTEM

The existing system pose the problem of

i) Storage: Information stored on files makes the files appear bulky and occupying more space in the cabinet.

ii) Retrieval: The speed of retrieval is very slow as one has to search for a particular file (among many) from which the information is to be obtained.

iii) Updating: It is always difficult as various information has to be entered into the file about changes that occur per staff, either in the case of mental status or when promotion or demotion or retirement occurs.

It poses boredom and inefficiency as different files have to be updated virtually every time.

2:4 PROPOSED COMPUTERISED PERSONNEL INFORMATION SYSTEM

The computerised personnel information is to develop an overall plan for an integrated personnel system. As the plan proves economically and technically feasible, particular phases of the integrated system can be computerised in a planned sequence.

... ..., ... the
... ... multiple files (including
... ... position, requirement, benefits,
... ... qualification and training. It also attempts
to keep up to date accounts so that inquiries may be
answered with timely and accurate information. As
a result, a great deal of duplication and inconsis-
tencies in existing files should be eliminated.

2:5 BENEFIT AND PURPOSE OF THE PROPOSED SYSTEM

The benefit accruing from the proposed system
includes:

1. *Speed:* The most obvious benefit of using a computer
is speed. The computer can perform calculations and
data processing more quickly than alternative methods
can. Work that might take human months, or even
years to complete manually may be accomplished in
hours or at most days by computer. For example, some
computers can do hundreds of thousands or even
millions of arithmetic operations per second.

2. *Accuracy:* The computerised personnel information
system with accurate data, will do the intended work
with a very high degree of accuracy. The computer
does exactly what the program tells it to do.

In addition, the computer does not get bored or fatigue thus avoiding the errors humans might well make under the same circumstances.

3. _Reliability:_ The computer can work almost twenty-four hours a day (with a little time out for equipment check out and maintenance). Everyday of the year, it still operate reliably. Modern electronic computers perform at high levels of reliability and equipment failures are very few.

4. _Retention:_ The computer can store and search massive files of data and programs. The content of the files does not fade or get lost, and it can be used time and again.

5. _Economy:_ The advantage of speed and accuracy can often be translated into dollar savings realised. Usually the per unit cost of processing data or doing computation by computers is considerably lower than by alternative means. (i.e. manual or mechanical methods). There can also other advantages for instance, more prompt billing can result in improved cash collections. Accurate records can reduce the frequency of bad decisions that were made because of unreliable or unavailable information.

6. _Wide Applicability:_ A computer can be used to solve a wide variety of problems that arise in science and business. The boundaries of what the computer can accomplish are limited only by the ability and imagination of its users.

CHAPTER THREE

3:0 SYSTEM SPECIFICATION

Design work rarely proceeds in a straight line an initial attempt at the logical structure may be superceded by a later improved version.

Two main stages are involved in the design. The first logical database. Structure is developed and the second, structure is translated into a design for a physical organisation.

Identifying Name Sets: The first step is to identify name sets for inclusion in the database structure. These are: Surname, Name, File Number, Date of Birth, State of Origin, Marital Status, Qualification, Date of first appointment, Present appointment date, grade level, and post.

Secondly, the construction of unique name. These include - the file number. Thirdly, the identification of relations. These rules can be defined in the database structure and associate a map with each one - example, A many-to-one relation between names and file number e.g. Surname   ) > File Number
            First Name)

Normalisation: Normalised files take a record as the
smallest unit of data which can be stored and manipu-
lated, to any of the items, the record structure is
then designed. A set of related fields called records
form part of the database structure. These are
FIELD NUMBER, FIELD DESCRIPTION, FIELD NAME, FIELD
TYPE AND FIELD WIDTH.

3:1 _INPUT SPECIFICATION_

Here a database file will be used. The database
file is: STAFF REC DBF. This would record the parti-
culars of all staff employed. The database file would
have 15 fields. The structure is shown below.

FIELD NO.	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH
1.	SURNAME	SURNAME	CHARACTER	10
2.	FIRST NAME	FIRST NAME	CHARACTER	10
3.	FILE NO.	FILE NO.	CHARACTER	9
4.	DATE OF BIRTH	D. OF BIRTH	DATE	8
5.	MARITAL STATUS	M. STATUS	CHARACTER	6
6.	STATE OF ORIGIN	ORIGIN STATE	CHARACTER	10
7.	QUALIFICATION	QUALIFICATN	CHARACTER	4
8.	GRADE LEVEL	GRADE LEVEL	CHARACTER	2
9.	POST HELD	RANK	CHARACTER	10
10.	DATE OF FIRST APPOINTMENT	DATE OF 1ST APPOINTMENT	DATE	8
11.	DATE OF PRESENT APPOINTMENT	DATE OF PRE-SENT APPTMT.	DATE	8
12.	SALARY	SALARY	NUMERIC	9
13.	DATE OF LAST PROMOTION	DATE OF LAST PROMOTION	DATE	8
14.	DATE OF LAST ANNUAL LEAVE	DATE OF LAST ANNUAL LEAVE	DATE	8
15.	DATE OF STUDY LEAVE	DATE OF STUDY LEAVE	DATE	8

3:2 OUTPUT SPECIFICATION

Normally, the starting point of any system design is the output, this shows how the output of the computerised system is to appear on the media, in this case, the screen display.

COMPLETED CTR LAYOUT FORM AND SCREEN OUTPUT

PROGRAM   STAFF RECORDS

1. SURNAME: ....

2. FIRST NAME: ....

3. FILE NO: ....

4. DATE OF BIRTH: ....

5. MARITAL STATUS: ....

6. STATE OF ORIGIN: ....

7. QUALIFICATION: ....

   ....

8. GRADE LEVEL: ....

9. POST HELD: ....

10. DATE OF FIRST APPOINTMENT: ....

11. DATE OF PRESENT APPOINTMENT: ....

12. SALARY: ....

13. DATE OF LAST PROMOTION: ....

14. DATE OF LAST ANNUAL LEAVE: ....

15. DATE OF STUDY LEAVE: ....

From the record the following enquiries could be made:

1. Total number of staff

2. The newly promoted

3. Staff due for promotion

4. Staff due for retirement

3:3 RESOURCES TO BE USED

1. HARDWARE REQUIREMENT

The hardware of a computer refers to the various mechanical, magnetic, electrical and electronic parts of the computer. The most powerful the features of the hardware component, the better the utilisation of the design system. For the hardware requirement a computer with the following specification will be ideal.

IBM AT or COMPATIBLE (Comprising of 80386 Intel processor, 20MHZ of speed, 640 KB RAM, 40 MB HARD-DISK, 1.2MB (5 ") Floppy Disk Drive, 1.44MB (3 ") Floppy Drive, VGA Adaptor, 1.41 VGA Monitor, English Keyboard (101 Keys)

2. SOFTWARE REQUIREMENT

The software of a computer system is a collection of programs that are responsible for the controlling of the activities of the computer.

The software requirements that are essential for the operations of the proposed system are as follows:

- DISK OPERATING SYSTEM. MS-DOS 3.3 OR HIGHER VERSION.

- DATABASE MANAGEMENT SYSTEM PACKAGE DBM'S DBASE 3 PLUS.

PERIPHERAL EQUIPMENT REQUIREMENT

1. _PRINTER:_ A printer is essential in obtaining hand copies of reports. In view of this printing mechanism mentioned below will satisfy the requirements.

- A FAST DOT MATRIX PRINTER. ESPON LQ 1050 OR EQUIVALENT.

- UPS, UNINTERRUPTED POWER SUPPLY

In order to avoid unnecessary interruption of power supply which may eventually lead to loss of information an uninterrupted power supply of about 500 VA will suit the purpose of this system. Acquisition of backup equipment is recommended to this effect.

PERSONNEL

A computer personnel is needed to be able to operate the computer, as the computer is nothing but an electronic robot.

CHAPTER FOUR

4.0 SYSTEM DESIGN

The system design stage is based upon the findings obtained from the feasibility study conducted. In designing the new system, several criteria were considered. Major consideration was given to the requirements of the end user.

Apart from considering the user's requirements detailed specification such as flexibility, user friendliness, ease of maintenance and efficiency of the system were born in mind.

4:1 SYSTEM DESIGN LIFE CYCLE

The emphasis of system design is to develop a new system that helps to achieve the goals and objectives of the organisation and overcomes some of the short - comings and limitation of the existing system.

Every system consists of a number of inter-related components. In order for the system to function properly, these components must work in harmony. Developing a detailed plan for a computer-based system include going through the following stages.

```
+---------------------+
| PROBLEM DEFINITION  |
+---------------------+
          |
          |
+---------------------+
|   SYSTEM ANALYSIS   |
+---------------------+
          |
          |
+---------------------+
|  FUNCTIONAL DESIGN  |
+---------------------+
          |
          |
+---------------------+
|  TECHNICAL DESIGN   |
+---------------------+
          |
          |
+---------------------+
|   IMPLEMENTATION    |
+---------------------+
          |
          |
+---------------------+
|      TESTING        |
+---------------------+
          |
          |
+---------------------+
|    EVALUATION       |
+---------------------+
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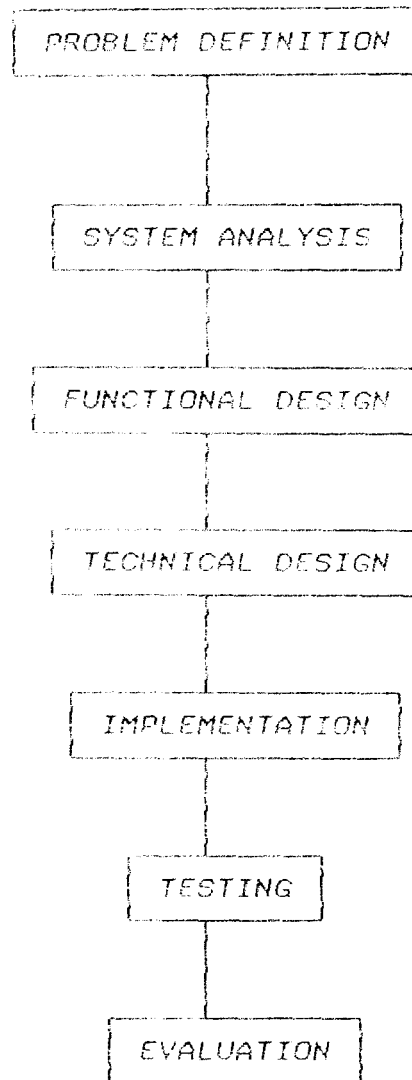
Problem Definition: Here the exact problem is deter-
mined.   Tools used include personal interviews with
the affected people a study of the existing system
was made.   The problem definition stage points out
the lapses involved in the existing system.

System Analysis: Here a number of possible solutions
to the problem were made, with rough estimates of cost
and benefit were developed.

Functional Design: The furnished system is considered as
whether it is going to be functional or not, inclusive
technical design ensuring that the system design is
feasible.

Implementation Stage: The program is actually coded and
debugged.   The analyst then spent time preparing
operating procedure, security procedures, backups
procedures and a solid test plan for the system.

Testing: A test plan is made, the system is tested under
realistic conditions.

Evaluation: The system is evaluated, found to be reliable
and useful.

4.2 _DESIGN OF THE SYSTEM_

The processing specification is a description
of the captioning of information into the database
file maintained by the system.   The following system
flow chart pictorially represent the processing speci-
fication of the design.

Diagram:

```
                            MAIN MENU
                                |
        ------------------------+------------------------
        |                       |                       |
  PERSONNEL FILES            REPORT                    EXIT
        |                       |
        |              ---------+---------
        |              |                 |
        |           PRINTER            SCREEN
        |              |                 |
  ------+------        |                 |
  |     |     |        |                 |
 ADD   EDIT  DEL       |                 |
RECORD RECORD RECORD   |                 |
                   ----+----        -----+-----
                   |       |        |         |
                SENIOR  JUNIOR   SENIOR    JUNIOR
                STAFF   STAFF    STAFF     STAFF
```
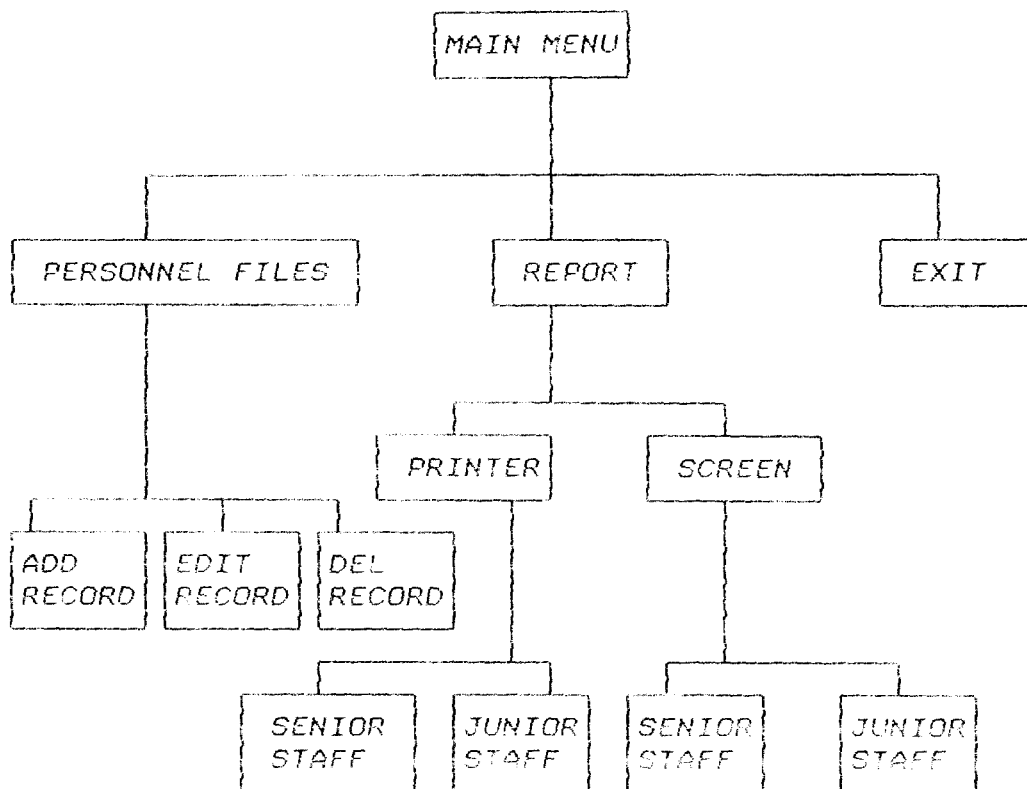
PROCEDURE

The system has been designed in such a way that not
much knowledge of computer is required from the user.
The following presents an instructional step for
operating the system.

At the A:>prompt;   type A:>STAFFREC.

This automatically load the program of staff record.
Then press any key to continue, immediately the screen
display a message - "ENTER YOUR CHOICE".

The user is expected to enter the choice number to be allowed entrance into the working area.

The menu of the system is as shown.

STAFFREC	ADD	EDIT	DELETE	REPORT	EXIT

PRESS ENTER	ADD NEW STAFF RECORD

When staff menu is chosen the following submenu are displayed under it.

ADD,   EDIT,   DELETE,   REPORT,   EXIT.

ADD: You can add new records by selecting update and append. Append take to the last record and add new records to it.

EDIT: Here, edit is used to bring about any change in the data base file. the database structure can also be edited. The content of the file is shown one by one and the content is displayed on the screen

DELETE: Delete option is used when a record is to be removed from the database file.

The record to be deleted is displayed and the computer first confirmed whether or not deletion should take place.

REPORT: Reports are generated from the database file; and the output is sent to the printer for the hand copy, as in the output specification.

EXIT: This means to quit.

The computerisation of the personnel data allows for the generation of reports from the master file. In categorising the senior staff list from grade level eight and junior staff list from grade level seven.

4.3 COST ANALYSIS

The estimated cost for implementing the design system is as shown.

1. Hardware: With the following components N75,000.

    a) 386 micro-processor (VGA)

    b) 640 KB Ram

    c) 40 MB Hard Disk

    d) 1.2MB 5 " 'floppy disk drive'

    e) 1.44MB 3 " 'floppy disk drive'

2. Implementation (installation)   N10,000.00

    Maintenance   7,000.00

    Dot Matrix Printer   25,000.00

    Stationery   5,000.00

    Uninterrupted Power Supply   18,000.00

CHAPTER FIVE

5.0 SYSTEM IMPLEMENTATION

5:1 SYSTEM WRITTEN PROGRAM

The choice of the programming language is an important factor to be considered when developing a system.

Dbase III+ was chosen as the programming language to be used in the development of this system. It was chosen because of its powerful and useful features it has.

The following are some of the features:

1. Information storage and Retrieval: DBase III+ handles storage, retrieval and organisation of information in an efficient manner better than other micro-computer-based DBMS e.g. COBOL.

2. User Friendliness: DBase III+ facility for the user queering language in processing information stored.

3. Programming Commands: It's commands are short, easy to coordinate and remember.

4. Debugging-DBase III+ include some features for tracking unwanted program bugs. Few programming languages offers such facilities.

5. *Report Generation:* It allows for customisation of reports.

5.2 *SYSTEM TESTING OF THE PROGRAM*

This is prepared so that the test requirement established during system design can be met. Both system and computer program test has been planned using deeper testing

Deeper Testing: Far more dangerous errors that allow a program to execute and generate a full quota of output that obtains a feed back on its performance. The result of our findings are compared to the original objectives stated previously. Our evaluation is set to answer the following questions.

a) Is the system performing as planned and actually delivering the benefit that were expected of it?

b) Are the user satisfied or are they having difficulties working with the new system?

c) Are the control that were set up functioning properly?

d) Is management satisfied with the information it is receiving?

e) What are the operating cost? Was the project completed within the expected budget?

5:3 *THE INSTALLATION*

The installation of the equipment to be used is done by the computer experts. The equipment which may comprise of the IBM PC or compatible double floppy or hard disk, IBM graphics or compatible printer and the software necessary to be used.

The software - database product arrives as a boxed manual containing one or more diskette, which may include a tutorial or demonstration diskette. Normally, it can be executed directly from these diskettes which should be suitably protected by taking backup files.

5:4 *SYSTEM CHANGE OVER*

Due to the similarity between the manual and the computerised system, it has been suggested that both should be run side by side for a period of time. This method of conversion is called *PARALLEL CONVERSION*, by this the old system is phased out slowly. This method of conversion also offer the opportunity of comparing the result of the old manual system and the new computerised system. The advantage of this method is that there is a backup system available incase of any disaster occurring.

5:5 SYSTEM MAINTENANCE

In order to protect against interruption of computer service, hardware requires regular maintenance. In large installations, preventive maintenance may be carried out each day at a specific time that is allotted for this purpose. If so, maintenance personnel may be assigned to the installation on a full-time basis, or may be given maintenance checks once a week, or be on an "on call" basis.

Preventive maintenance involves identifying and replacement of components that are likely to fail, and keeping mechanical parts properly adjusted.

5.6 PROGRAM MAINTENANCE

Program maintenance involves updating programs for necessary changes. Programs tends to be dynamic, and most of them are subject to periodic revisions. Some programs are subject to frequent modifications. Sometimes, when revisions are extensive, an organisation considers completely reprogramming the job instead. Specific programmers could be assigned to the job of program maintenance.

CHAPTER SIX

6.0 CONCLUSION

The principal goal of the thesis is to effectively design and develop a computerised system that would grossly reduce inefficiency, data duplication associated with the keeping of staff records. This system was designed, developed, debugged and costed by me of the existing data with the section and found to be working fine.

This project design and development was based on information gathered from the unit and the National Population Commission as a whole.

Generally, the project has helped me to know and understand what system design and development entails and how to go about it, not only in the school as a project but also for future needs.

In any modern library, information processing needs to be fast, efficient and error free. To achieve this, computers has to come in and moreso a system to do the processing must be developed.

6:1 _RECOMMENDATION_

This system, though tested and found to be good cannot be used as a reliable system since some of the technical aspects of National Population Commission work was not indept enough due to no good experience in organisation and system designing.

In view of things gained from this project, I would recommend that system analysis as a core course should be offered in all computer schools.

REFERENCES

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4. COMPUTERISED ACCOUNTS ON A SHOESTRING
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```
SET TALK OFF
SET ECHO OFF
SET SCOREBOARD OFF
SET COLOR TO G/B
***PROGRAM TO ADD MORE STAFF RECORD
CLEAR
USE STAFFREC.DBF
CLEA
DO WHILE .T.
*CLEAR
MORE
MFILENO = SPACE(5)
MSUR_NAME = SPACE(10)
MSTA_ORIGIN = SPACE(10)
MQUALIFICAT = SPACE(5)
MF_NAME = SPACE(10)
MDAT_BIRTH = CTOD/
MV_APP_DA = CTOD(/
MPER_APP_DA = CTOD(
MSALARY = 0.00
MGRADELEVEL = SPACE(2)
MPOST = SPACE(10)
MMAR_STATUS = SPACE(8)
MBANK = SPACE(10)
MSTILLEAVE = .T.
MMAL = .T.
CHOICE = ' '
@3,3 SAY "FILENO"
@3,26 GET MFILENO
@4,3 SAY "SUR_NAME"
@4,26 GET MSUR_NAME
@5,3 SAY "F_NAME"
@5,26 GET MF_NAME
@6,3 SAY "STA_ORIGIN"
@6,26 GET MSTA_ORIGIN
@7,3 SAY "DAT_BIRTH"
@7,26 GET MDAT_BIRTH
@8,3 SAY "POST"
@8,26 GET MPOST
@9,3 SAY "MAR_STATUS"
@9,26 GET MMAR_STATUS
@10,3 SAY "SALARY"
```

```
SET TALK OFF
SET ECHO OFF
SET STATUS OFF
SET COLOR TO G/B
CLEAR
**PROGRAM TO EDIT RECORD****
USE STAFFREC
DO WHILE .T.
MFILENO = SPACE(10)
MSUR_NAME = SPACE(10)
MF_NAME = SPACE(10)
MDAT_BIRTH = SPACE(10)
MSTA_ORIGIN = SPACE(10)
MMAR_STATUS = SPACE(10)
MGRADELEVEL = SPACE(04)
MPOST = SPACE(10)
MQUALIFICAT = SPACE(05)
MF_APP_DA = SPACE(08)
MPRE_APP_DA = SPACE(08)
MSALARY = SPACE(05)
MSTU_LEAVE = SPACE(05)
MANN_LEAVE = SPACE(05)
MBANK = SPACE(08)
READ
@1,20 SAY "FILENO"
@1,26 GET FILENO
@2,3 SAY "SUR_NAME"
@2,26 GET SUR_NAME
@3,3 SAY "F_NAME"
@3,26 GET F_NAME
@4,3 SAY "DAT_BIRTH"
@4,26 GET DAT_BIRTH
@5,3 SAY "STA_ORIGIN"
@5,26 GET STA_ORIGIN
@6,3 SAY "MAR_STATUS"
@6,26 GET MAR_STATUS
@7,3 SAY "GRADELEVEL"
@7,26 GET GRADELEVEL
@8,3 SAY "POST"
@8,26 GET POST
@9,3 SAY "QUALIFICAT"
@9,26 GET QUALIFICAT
@10,3 SAY "F_APP_DA"
@10,26 GET F_APP_DA
@11,3 SAY "PRE_APP_DA"
@11,26 GET PRE_APP_DA
@12,3 SAY "SALARY"
@12,26 GET SALARY
@13,3 SAY "STU_LEAVE"
@13,26 GET STU_LEAVE
@14,3 SAY "ANN_LEAVE"
@14,26 GET ANN_LEAVE
@15,3 SAY "BANK"
@15,26 GET BANK
READ
CHOICE = " "
@16,0 CLEAR TO 24,79
@18,1 SAY "    "
READ
```

```
SET TALK OFF
SET ECHO OFF
SET STATUS OFF
SET COLOR TO G/B
CLEAR
***PROGRAM TO DELETE RECORD***
USE STAFFREC
MFILENO = SPACE(10)
MSUR_NAME = SPACE(10)
MF_NAME = SPACE(9)
MDAT_BIRTH = CTOD("  /  /  ")
MSTA_ORIGIN = SPACE(15)
MMAR_STATUS = SPACE(10)
MGRADELEVEL = SPACE(9)
MPOST = SPACE(15)
MQUALIFICAT = SPACE(9)
MF_APP_DA = CTOD("  /  /  ")
MPRE_ACT_DA = CTOD("  /  /  ")
MSALARY = 000.00
MOUT_LEAVE =
MAN =
MBANK = SPACE(10)
DO WHILE .T.
@3,15 CLEAR TO 15,70
@3,16 TO 16,69 DOUBLE
@7,25 SAY "DELETE ANY RECORD"
@10,25 SAY "ENTER RECORD NUMBER TO DELETE"
READ
GO TOP
LOCATE FOR MFILENO = FILENO
@7,15 CLEAR TO 15,70
IF FOUND ()
@1,1 SAY "FILENO"
@1,8 GET FILENO
@2,1 SAY "SUR_NAME"
@2,10 GET SUR_NAME
@3,1 SAY "F_NAME"
@3,7 GET F_NAME
@4,1 SAY "DAT_BIRTH"
@4,10 GET DAT_BIRTH
@5,1 SAY "STA_ORIGIN"
@5,11 GET STA_ORIGIN
@6,1 SAY "MAR_STATUS"
@6,11 GET MAR_STATUS
@7,1 SAY "GRADELEVEL"
@7,11 GET GRADELEVEL
@8,1 SAY "POST"
@8,5 GET POST
@9,1 SAY "QUALIFICAT"
@9,11 GET QUALIFICAT
@10,1 SAY "F_APP_DA"
@10,9 GET F_APP_DA
@11,1 SAY "PRE_ACT_DA"
@11,11 GET PRE_ACT_DA
@12,1 SAY "SALARY"
@12,7 GET SALARY
@13,1 SAY "OUT_LEAVE"
@13,10 GET OUT_LEAVE
@14,1 SAY "ANN_LEAVE"
@14,11 GET ANN_LEAVE
@15,1 SAY "BANK"
@15,5 GET BANK
?
```