

**COMPUTERISATION OF THE ALLOCATION AND
INSTALLATION OF INTRODUCTORY TECHNOLOGY
EQUIPMENT IN SECONDARY SCHOOLS**

A CASE STUDY OF

ABUJA MUNICIPAL AREA COUNCIL

BY

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OF POST-GRADUATE DIPLOMA IN COMPUTER SCIENCE.**

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CERTIFICATION

This is to certify that to the best of my knowledge this work has been carried out by me, Kamaru Atoyebi Jimoh under the supervision of Dr. Yomi M. Aiyesimi of the Department of Mathematics/Computer Science, Federal University of Technology, Minna.

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DATE

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EXTERNAL EXAMINER

DATE

ACKNOWLEDGEMENT

I wish to place on record my gratitude to the many individuals without whom this study may not have seen the light of day.

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On the home front, I wish to thank Hajiya Rahmatu, Abdulmajid, Ahmed, Hamza, Hauwa and Maimuna for holding fort, while I was away at Minna.

DEDICATION

To, the memory of my late Father;

Pa Jimoh Atoyebi

who would have approved,

and all others who made it

possible and worthwhile.

ABSTRACT

This study investigated the computerisation of Introductory Technology tools and equipment. It looked at introductory technology and what constitutes its tools and equipment, workshops and installation.

Of special concern, this study dwelled on computers, the different classes obtainable and their applications. It also looked at computers and how they aid decision making in organisations and outlined the benefits that will accrue from computerisation.

It is the conclusion of this study that computer can act as an extension of both the hand and the brain, but cannot replace either. What it can do is tremendously increase the power of our designing.

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CHAPTER ONE

1.0 BACKGROUND OF THE STUDY

1.1 INTRODUCTION

The formal educational system in Nigeria at independence was patterned after the British system. The emphasis was on the maintenance of high quality instructions and evaluation. The educational system also reflected a bias towards the British models with its emphasis on the mastery of English as a pre-requisite for obtaining a pass in the general certificate of education, school certificate, the university degree examination and the adoption of the sixth form.

It would be recalled that many educators, trained in the united states, had criticised the British educational system with its non-vocational training facilities at the secondary school level and the wastage of the sixth form, a preparatory step for the universities.

With independence in 1960, Nigerians gradually started to re-examine their role in the world community of nations. Moving from being subjects of a colonial power towards being citizens of their own independent country and the world at large. At the same time, more educators expressed concern about the lack of relevance of the Nigerian educational system in meeting the pressing economic, social and cultural needs of the nation. They had opined that Nigerian school children were being educated to meet the needs of a foreign culture and were therefore better fit for export than life in their own country.

During the first post-independence decade, it became obvious to the various governments that the type of education inherited was not likely to satisfy Nigeria's aspirations. That there was a need therefore for a comprehensive review of the existing educational system in terms of structure, content, financing and the like. This made the Federal government to summon a seminar of distinguished educationalist under the chairmanship of chief Simon O. Adebayo in 1973 to deliberate on a national policy on education. The outcome of their deliberations was 35 page document titled NATIONAL POLICY ON EDUCATION. This document first published in 1977 and revised in 1981 looked into all aspects of the educational system, that is, from pre-primary to higher education.

The National policy on education (1977) introduced a new secondary school system, the 6-3-3-4 system, based on the American system of the junior and senior secondary schools. It also abolished the sixth form schools, and introduced a four year university education system along the system adopted by the colleges in the united states. In addition it recommended the use of continuous assessment in school.

1.2 THE JUNIOR SECONDARY SCHOOL

The 6-3-3-4 system sought to link primary education through a two-tier arrangement of secondary schools, with university education. The National policy on education stipulates that secondary education shall be given in two stages, each of three years duration. The curriculum of the first stage, the

junior secondary school, is both academic and pre-vocational while that of the second stage, the senior secondary is both academic and vocational. According to the National policy on education, the broad aims of secondary education within the Nigerian context are to:

- a) Prepare students for useful living within the society and
- b) Prepare those who are able for higher education.

In specific terms:

- i. Provide an increasing number of primary school leavers with the opportunity for education of high quality irrespective of sex, religion, social class or ethnic origin.
- ii. Diversify the curriculum to cater for a variety of talents, viz: the technically, commercially or academically oriented.
- iii. Develop and project Nigerian culture, art and language as well as the world's cultural heritage.
- iv. Raise a generation of people who can think for themselves, respect feelings of others, respect dignity of labour and live as good citizens
- v. Foster Nigerian unity with emphasis on the common ties that unite us in diversity and
- vi. Inspire students with desire for achievement and self improvement.

All students irrespective of their later callings (e.g medicine, Engineering, Technology e.t.c) will be exposed to both academic and prevocational course and one or two Nigerian language.

The specific objectives of the junior secondary school education are to develop in the students manipulative skills, otherwise known as manual dexterity, inventiveness, respect for dignity of labour and above all a healthy attitude towards things technical. At the same time students will be exposed to the usual basic academic course but with a different orientation.

1.3 TECHNOLOGY

Technology can be defined in many ways. One definition includes its view as an applied science, which sees technology as a product. This is clearly insufficient as technology is essentially an activity. A more comprehensive definition tends to take into account both the process and product dimension. An example of such a definition is:

Technology is the application of scientific and other knowledge to practical tasks by organisations that involve people and machines.

The essential foundation for technology is education. Foundation refers to a planned action that could lead to technological development. This means that technology must be based on a sound education which needs to begin at early age so that the recipients' minds are easily tuned in the desired direction.

Technology educators have recognized the fundamental direction in which technology education must proceed. According to the report of the Association of science educator's technology and science working party, cited in Allsop and Woolnough (1990), four strands of a balanced technological education have been identified.

These are :

- i Technological literacy: Students are exposed to the contents and methodologies of several different technologies;
- ii Technological awareness: This ensures that students are aware of the various implications of technological development;
- iii Technological capacity: Students are encouraged to develop skills in tackling technological problems;
- iv Information technology: This should serve as an integral part of different subjects or as a tool for specific tasks.

1.4 INTRODUCTORY TECHNOLOGY AT A GLANCE

In Nigeria, the foundation for technology is the introductory technology at the junior secondary school (JSS). Introductory technology is one of the four pre-vocational subjects introduced with the 6-3-3-4 system of education, others being: local craft, Home - Economics and Business studies.

Introductory technology content consist of components of technical drawing, metalwork, woodwork, Electronics, applied Electricity, building construction, automechanics, safety devices, Engineering materials, and food storage and preservation. These are presented as distinct but related components of technology. Emphasis is on exposition to both theory and

workshop practices with a view to acquiring knowledge and skills. This JSS programme serves as the foundation for technology despite the existence of a handcraft curriculum at the primary school and the exploratory primary science curriculum.

In the National policy on education, the objectives of introductory technology are:-

- i. To provide pre-vocational orientation for further training in technology.
- ii. To provide basic technological literacy for every day living.
- iii. To stimulate creativity.

Introductory Technology unlike integrated science where themes and concepts could be used as factors to attaining integration. In introductory technology, distinct components of technology are merely brought together to form a single subject without a single strand running across them. Introductory technology neither provides training for specific occupations nor aims at developing competencies, this is the responsibility of vocational education, rather it help pupils to explore the environment around them.

Introductory technology has general education goal which include:

- a) Availability for everybody
- b) Concerned with total personality
- c) Preparation for effective and efficient living irrespective of vocation.

The junior secondary sector of the NPE came into operation from October 1982 when the first batch of UPE pupils enrolled in 1976 completed their six years primary course.

1.5 GOVERNMENT INPUT

Both at the design and implementation stages, it was clear to government that introtech course would require considerable technical equipment and spare as well as highly trained specialist teachers. It was also clear to government that Nigerian schools neither had the equipment required by the programme nor the teachers in both number and quality.

The strategies adopted by government includes:

- The commissioning of the then Nigerian Educational Research council on behalf of the federal ministry of education to develop a curriculum for the subject to be widely distributed for use in all secondary schools.
- Compilation of the list of appropriate equipment by the federal ministry of education.
- The procuring of these equipment by commissioning their production in eastern Europe. In 1984/85 the federal government entered into a soft loan agreements with Bulgaria, Hungary and Czechoslovakia for the supply of pre-vocational workshop tools and equipment to all the junior secondary schools in the country. These equipment arrived in crates and containers and were shipped directly to the secondary schools for which

they had been ordered, presently their installation is on going with varying degree of success.

- A crash programme scholarships award scheme to Nigerians to train abroad in a variety of technical and technological areas to provide the required manpower. Some others trained in the United State of America under the Technical Teacher Training programme (TTTP).

1.6 EDUCATION DEPARTMENT

The Department of education started as a small unit within the federal capital Development Authority (FCDA) a parastatal which was established in 1976 to see to the provision of infrastructure and social services in Abuja, the federal capital territory of Nigeria. By the administrative set-up in Abuja, the department is what a ministry of education is to a state.

The department is headed by a Director in whose office there are sections that handle administration and accounting matters.

The department is made up of the following divisions:

EDUCATION RESOURCE CENTRE (ERC)

This is the servicing arm of the department. It provides services in the areas of curriculum development, measurement and evaluation, learning resources, guidance counselling, publications and continuing education. It is also responsible for school co-curricular programmes of academic nature as well as in- house staff development through seminars, workshops conference and short courses.

INSPECTORATE DIVISION

It is responsible for monitoring curricular and co-curricular activities with the major aim of ensuring effective quality control with regards to the corporate life of students in the schools. The division has three units namely: subject inspectorate, area inspectorate and zonal inspectorate.

PLANNING AND DEVELOPMENT DIVISION

This Division compiles educational statistics and plans the budget. It also plans for both infrastructure and equipment and monitors the provision of same. In addition, scholarship matters and the implementation of the national policy on education come under the schedule of planning and development.

SECONDARY AND HIGHER EDUCATION DIVISION

It sees to the day to day administration in order to ensure that classroom teaching and learning as well as co-curricular activities are effected as a matter of school routine. It also oversee the education of the handicapped in the FCT.

SCIENCE AND TECHNOLOGY DIVISION

This Division oversees the teaching and learning of science, technical and vocational education. Women education matters falls within the schedule of this division. It also undertakes the installation and maintenance of introductory technology equipment in all post-primary institutions in the FCT were such equipment are installed.

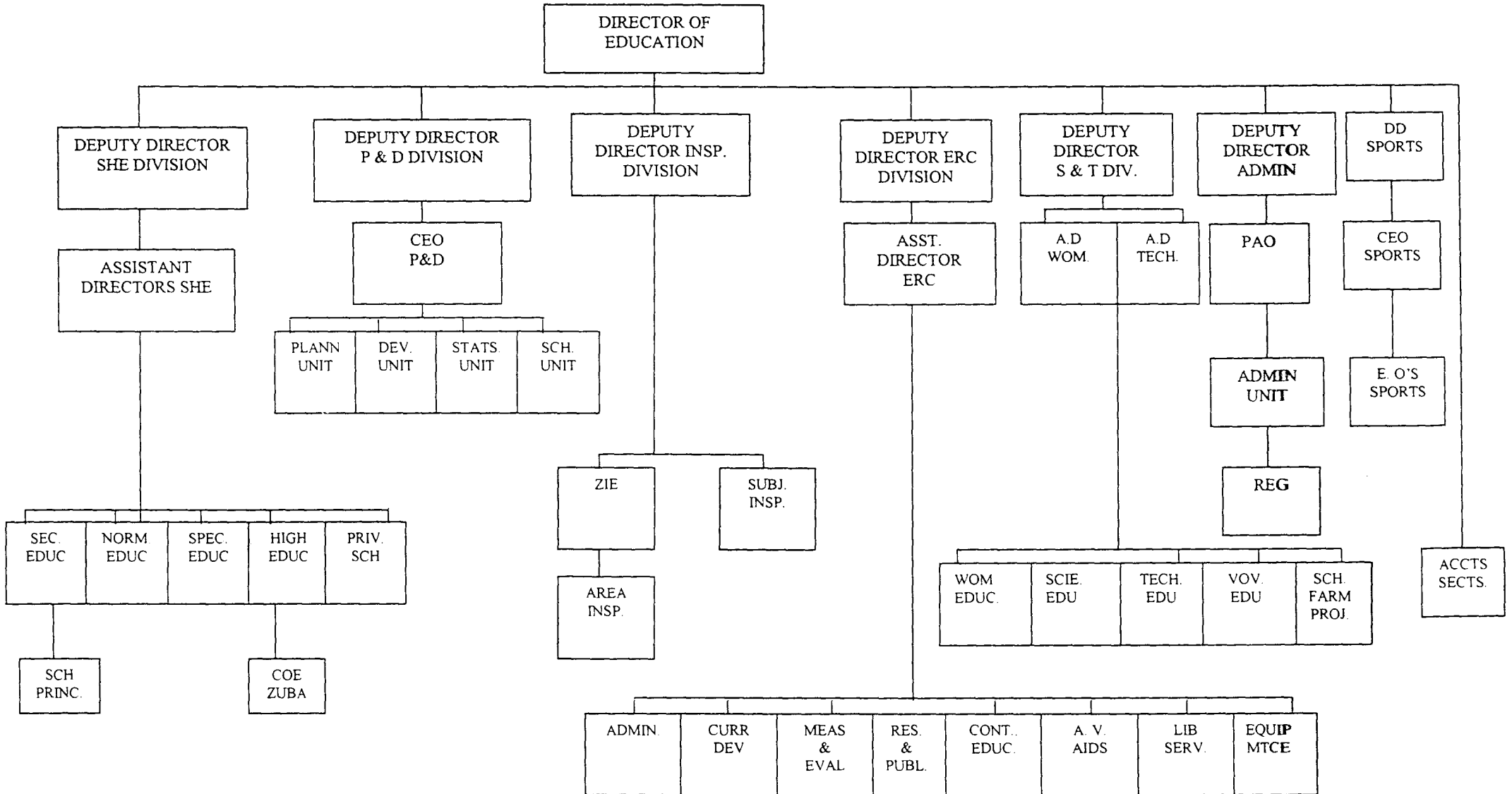
SPORTS DIVISION

The sports division takes charge of sporting activities in all schools in the FCT.

Altogether there are thirty-four (34) post-primary institutions (that are wholly government owned) in the federal capital territory. There is one federal government college each at Bwari and Kwali and a federal technical college at Orozo. In addition to the above, there are five (5) other post-primary institutions owned by non-governmental organisations.

The Municipal Area Council now has fourteen (14) post-primary institutions following the carving out of Bwari area council out of Abuja Municipal Area council. There are two (2) post-primary Institutions (private) in the Municipal Area Council viz: Loyola Jesuit college Gidan Mangoro and Regina Pacis Girls Secondary School Garki.

ORGANISATIONAL CHART OF THE EDUCATION DEPARTMENT FCDA
ABUJA AS AT MARCH 2000



1.7 PURPOSE OF STUDY

The main purpose of this study was to seek and develop a system that would ease the collection and storage of information on the allocation and installation of introductory technology tools and equipment in schools in the Abuja Municipal Area Council. Secondly, to provide a harmonized information on tools and equipment inventory in secondary schools within Abuja Municipal Area Council.

The main objective are :

- To study and analyse the activities of science and technology division of the F.C.D.A. education department who have responsibility for introductory technology.
- To observe the problems, associated with the existing information storage system in order to justify a need for a computerised tools inventory management system.
- To provide a logical and physical design of a computerised tools inventory management system.
- To describe the various operations of the proposed computerised system and its mode of operation.
- To eliminate delays that occasions the retrieval of information on tools and equipment in school workshops.
- To device a system that automatically generates a required form of report on tools and equipment in schools.

The above objectives will be pursued bearing in mind that there exist a system that has computerised information on teaching and non-teaching staff in schools, headquarter staff as well as on student in schools.

1.8 METHODOLOGY

The study employed both the interview and the search of Records.

During the interview, information was obtained about the organisation's objectives, procurement of introductory technology tools and equipment, their allocation, installation and problems with the existing system.

The study also engaged in record search to obtain quantitative information that established how much reliance can be put on the estimates given by the staff and management during the interview sessions.

1.9 SCOPE OF THE STUDY

Abuja the federal capital territory has six (6) Area councils, equivalent of local government in the state. The scope of this study was limited to the Abuja Municipal Area Council only.

1.10 LIMITATIONS

This study concentrated on determining the feasibility of redesigning and converting existing system to new hardware and developing new applications for existing hardware. There would be no need to convince management on the procuring of computers. The statistical section of the planning and

development division at the headquarters have both hardware and personnel and have had them for years.

CHAPTER TWO

2.0 RELATED LITERATURE REVIEW

2.1 COMPUTER

The term "computer" could 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 were mathematicians, scientist and engineers.

However, people began to realize that the computer could process symbols (e.g. alphabetic 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 data, store and retrieve data, test data by logical operations and generate output results.

A computer is an electronic, general -purpose problem solving machine which accepts data as inputs, processes the input in accordance to a pre-defined program so as to give the desired output as information. It has a further capability of storing data as may be required.

Peter Drucker (1995) has pointed out that human beings have developed two types of tools:

- i. those that add to their capabilities and enables them to do something they otherwise could not do (e.g. the aeroplane) and

- ii. those that multiply their capability to do that which they are already capable of doing (e.g. the hammer). The computer falls into the latter category.

Computerisation refers to the process of using a computer to control an operation or a system.

2.2 CHARACTERISTICS OF COMPUTERS

Computers come in so many different shapes and forms that it is not obvious what it is they have in common. Neither is it always obvious when we are using a computer. Computers displays the following characteristic to a greater or lesser extent depending on their type and application:

- a. the ability to perform calculations at very high speeds.
- b. the ability to take in information and to store that information for future retrieval or use.
- c. the ability to take in and store a sequence of instructions for the computer to obey. Such a sequence of instructions is called a program and must be written in the language of the computer.
- d. the ability to obey a sequence of program instructions, provided the instructions are stored within the computer. The program instructions will be obeyed in sequence, automatically, without the need for manual intervention at each step.
- e. the ability to use simple logical rules to make decisions for their own internal control, or for the control of some external activity.

- f. the ability to communicate with other systems.
- g. the ability to exploit a complex internal structure of micro-electronic circuitry in a variety of ways.

2.3 CLASSIFICATION OF COMPUTERS

Computers come in a wide variety of sizes, ranging from tiny hand held devices to some that are several feet in height and diameter. Over the years, computers have become smaller and smaller, but they have also become increasingly powerful. Computers can be classified by the way they process data and by their size. This work will classify computers by the types of logic they use and by purpose.

2.4 ANALOG AND DIGITAL COMPUTERS

In terms of logic used, there are two broad classes of computing devices: the Analog and the Digital.

The Analog computer does not compute directly with numbers, rather it measures continuous physical magnitude (e.g. pressure, temperature, voltage, length etc.) which represents, or are analogous to, the numbers under consideration. An example of an Analog device is the automobile speedometer which converts drive shaft rotation motion into a numerical indication by the speedometer pointer. Analog computers are used for Scientific, Engineering and process-control purposes. Because they deal with quantities that are continuously variable, they give only approximate result.

The digital computer operates by counting numbers. It operates directly on numbers expressed as digits in the familiar decimal system or some other numbering system. Digital computations results in greater accuracy.

While analog computers may, under ideal conditions, be accurate to within 0.1 per cent of the correct value, digital computers can obtain whatever degree of accuracy that is required simply by adding places to the right of the reference or decimal point. For instance, everyone who has worked arithmetic problems dealing with circles knows that pi (π) has a value of 3.1416. Actually however, the value is 3.14159... In 1959, a digital computer worked the value of π out to 10,000 decimal places in a short period of time. Digital computers, unlike analog machines, are used for both business data processing and scientific purposes.

In special situations (e.g. to simulate a guided missile system or a new aircraft design), desirable features of analog and Digital machines have been combined to create a HYBRID computer, Hybrid computers are powerful computing devices and as such they are mostly used to solve rather sophisticated problems such as those from the studies of process control and optimization and physical process described by a set of physical simultaneous ordinary positive differentiation.

2.5 SPECIAL PURPOSE AND GENERAL PURPOSE COMPUTERS

In terms of purpose, computers can be classified into two classes. They are special purpose and general purpose computers.

A special purpose computer, as the name implies is designed to perform one specific task. The program of instructions is built into, or permanently stored in the machine. Specialization results in the given task being performed very quickly and efficiently. A disadvantage, however is that the machine lacks versatility, it is inflexible and cannot be easily used to perform other operations, unless their circuit are redesigned.

A general-purpose computer is one that has the ability to store different programs of instructions and thus to perform a variety of operations. In short, the stored program concept makes the machine a general-purpose device, one that has the versatility to make possible the processing of a payroll one minute and an inventory control application the next. New programme can be prepared, and old programs can be changed or dropped. Because it is designed to do a wide variety of jobs rather than perform a specific activity, the general-purpose machine typically compromises certain aspects of speed and efficiency, a small enough price to pay in many cases for the advantage of flexibility.

2.6 APPLICATIONS OF COMPUTER

Different types of organizations and businesses commonly use computers to assist in such day-to-day operating activities as: sales order entry, inventory management and control, personnel management, payroll, accounting, security, general financial management etc.

Traditionally, the application areas of computers are divided into two groups:

- * Electronic data processing (EDP) also called automatic data processing and
- * Scientific application or number crunching.

The electronic data processing application emphasizes the collection of data and their storage, simple manipulations and presentation. This application enhances the improvement of decisions by providing better quality data.

While number crunching emphasizes computer performance of very many, possibly complicated, mathematical operations on the data in order to solve mathematical models, such as those of engineering and chemical problems .

These two groups gives rise to general applications of: scientific and business applications.

Scientific Processing and Business Processing Applications

The volume of input/output in scientific data processing is relatively small, and the speed with which these operations are performed is usually not too important. Computational speed, on the other hand is a critical consideration since the bulk of the total processing job involves complex calculation. Storage capacity need only to be sufficient to hold instructions, input data, intermediate and final computational results.

In contrast to scientifically oriented applications, business task generally require faster input and output of data and larger storage capacity. An examination of a typical business application will usually show that the volume of data input and information output is quite large. Computational speed is less critical in business applications because:

- i. Arithmetic operations performed on each input record represent a relatively small proportion of the total job and
- ii. The internal arithmetic speed of the slowest computer is frequently much greater than the speed of input/output devices.

The followings are more specific instances of applications of computer:

Computer in Agriculture:

Computers are used professionally by the people who choose to go into animal husbandry such as raising poultry, dairy cattle or beef cattle - to monitor breeding conditions, diet and environment. New types of disease - resistant plant are being produced through computer-based plant engineering and to monitor weather, water supplies, climate, soil composition, etc.

Computer in Industry:

Many industries are being transformed by the use of computers. Automobile and other product manufacturers use computer-based robots to do much of the work. Engineers and Designers are using computer aided design to design items from airplanes to zippers. In publishing, editing, typesetting,

page make-up, photo treatment, creation of illustrations and colour work can all be done electronically and much faster than ever before.

Computer in Education:

Educators have been involved with computer in teaching students about computers, teaching students a variety of subjects using computer-assisted instruction and using computers as classroom management tools as in computer-managed instructions. Computer classes are been offered in tertiary institutions. Schools libraries use computers to aid in library searches and in management.

Computer in Government:

Governments are by far one of the biggest computer users in the world. It would be impossible to collect, tabulate and categorize the colossal amount of data governments must deal with without the aid of computers. Examples of such usages abound in government tax office, citizen registration, statistical offices etc.

2.7 INTRODUCTORY TECHNOLOGY TOOLS AND EQUIPMENT

The 1977 education policy had emphasized that introductory technology at the junior secondary school should be practically oriented. It was in recognition of the need to make introductory technology functional and practical that the Federal Government procured and distributed to all states,

equipment and tools for introductory technology. The federal government had commissioned Messrs Techno-impex of Budapest, Hungary to produce the equipment according to specification. These equipment arrived in containers and crates and were shipped directly to the respective states. A container contains three (3) school units and a single school unit consists of four (4) workshops viz: woodwork, metalwork, electricity and mechanic shops.

In the federal capital territory, the introductory technology tools and equipment were shared out to schools in sets (equivalent to the suppliers unit).

The items constituting introductory technology tools and equipment can generally be grouped into handtools and machine tools. These items are composed of tools such as:

- i. Layout tools e.g. hammer, punch, steel rule, angle plate, V-block, micrometer etc.
- ii. Sawing and bench tools e.g. hacksaws, chisels, files, scrapers etc.
- iii. Drilling machines e.g. hand drill, portable electrical drills, pedestal drills, hand feed drills etc.
- iv. Hand forging tools e.g. gas forge, anvil, hammer etc.
- v. Machine tools e.g. lathe, grinding machine, surface planers, etc.
- vi. Electrical tools e.g. pliers, screw driver, soldering iron etc.
- vii. Electrical meters e.g. voltmeter, ammeter, multimeter, ohmmeter, oscilloscope, wattmeter, etc.

- viii. Auto-mechanic equipment e.g. plug spanner, battery, battery charger, spark plugs, spanners, air pump, etc.
- ix. Woodwork tools e.g. plane, hammer, saw, etc.
- x. Welding equipment e.g. oxy-acetylene welding equipment, welding torch, helmet, face shield, electric arc welding equipment, wire brush etc..
- xi. Cutting fluids and lubricants e.g. grease, oil, etc
- xii. Electrical materials e.g. wire, bulb, transistors, diodes, triodes, fuse, battery, switch, magnet, iron filing etc.

There are fourteen (14) government owned post-primary schools in Abuja Municipal area council and these got the following number of sets of introductory technology tools equipment:

1	Government Secondary School, Garki	2 sets
2	Government Secondary School, Wuse	2 sets
3	Government Secondary School, Tundun-Wada	2 sets
4	Government Secondary School, Gwarinpa	2 sets
5	Government Science Secondary School, Pyakasa	nil
6	Model Secondary School, Maitama	nil
7	Army Day Secondary School, Asokoro	2 sets
8	Army Day Secondary School, Maitama	2 sets
9	Command Secondary School, Gado Nasko Barracks	2 sets
10	Government Secondary School, Karu	3 sets
11	Government Secondary School, Karshi	3 sets
12	Government Secondary School, Nyanya	nil
13	Government Secondary School, Jiwa	2 sets
14	Government Secondary School, Airport	nil

2.8 INSTALLATION

Installation refers to removing the equipment from their factory packaging and placing them appropriately in the workshop for use, as well as priming the equipment for use, connecting electricity and water etc and mounting tools on work-tables.

While a workshop is a room or building in which productive work or manufacture on a small scale is carried out.

The Federal Capital Territory administration had from the outset assembled a pool of teachers of technical subjects from its schools, for training on the installation of these equipment, by the Hungarian suppliers of the tools and equipment. It is from these pool of teachers trained on the installation and maintenance of the equipment that a standing installation team has being constituted for installation and post-installation maintenance when required.

Schools requesting for installation are expected to:

- * Provide a building that would serve as the workshop
- * Secure the said building against theft by constructing burglary Proof on the doors and windows of the buildings. Fencing of the school, when available is considered an added advantage.

- * Ensure that the building that would serve as the workshop is connected to a 3-phase supply of electricity. It would be pertinent to point out that availability of electricity in the workshop building would not suffice, as some of the machines to be installed like the lathes, surface planer etc., have motors that run on 3-phase supply.

On satisfying this requirements, the Federal Capital Territory administration is requested to approve installation in a requesting school. Upon approval of such request by the administration, the installation team is invited, from their respective schools to come and carry out the installation. The same installation team is used for the maintenance of the equipment during post installation maintenance routine.

2.9 GENERAL BENEFITS OF COMPUTERISATION

Computers were invented in the 1940's for technical reasons to do things people could not do within a comparable time span. In the 1950's computers were purchased by some companies to handle payroll preparation and accounts receivable and payable. As the computer matured, people realized that reasons for computerization amongst others was that "better quality of information" improved decision making ... are benefits. That many real life examples of computer projects illustrate that the major benefits of computers are not in clerical cost displacement alone.

The benefits that should accrue from computerisation are:

Speed:

The most obvious benefit of using a computer is speed. The computer can perform calculation, retrieve data or process data more quickly than alternative methods can. Work that might take humans months, or even years to compute manually may be accomplished in hours or at most days by computer. Its ability to perform millions of calculations in one second has obvious implications for management practice. Transaction data can be summarized, compared to historical trends, checked for other relationships and reported quickly. This means that the management control cycle can be shortened.

Accuracy:

The repetitive nature of data-processing activities make them ideally suited to computer processing. Computers can tirelessly perform the same task again with complete accuracy and without complaint. In the same situation, human workers become bored and tired. They find the constant repetition of the same task tedious and begin to make errors. They begin to record information incorrectly write illegibly, transpose letters or numbers. Computers decrease bookkeeping errors. Decreased inaccuracy mean less uncertainty concerning stock, therefore less safety stock is required. Accurate records can reduce the frequency of bad decisions, decisions that were made because of unreliable or unavailable information.

Economic of Scale:

The cost of processing records manually can be calculated at a fixed cost per record. After the number of records surpasses a certain volume, the cost per record increases slightly for two reasons:

- i. at this point, the manual worker begins to make more errors, and it becomes necessary to maintain a closer check on the processing and
- ii. the sheer volume of data make the handling and storing of records increasingly difficult.

With a computer the cost per records decreases as the volume of records increases.

Ease of Handling:

This factor is directly related to the volume of data. The treatment of information recorded on paper and stored in ordinary files can be a time consuming task. There would even be misfiling which could result in irrevocable loss of file unless the file is accidentally discovered. The computer can store and search massive files of data and programs. The content of the files does not fade, get torn or get lost and it can be used over and over again.

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 ANALYSIS AND DESIGN

Analysis of a system is the procedural study of its operation in an attempt to discover what its basic problem are. This will involve an examination of all the facts gathered in order to make a proper assessment of the existing system, while the design is how the new system will be constructed. This is dependent on the information gathered during the analysis stage.

3.1 THE EXISTING SYSTEM

The existing system uses the traditional filing system for storage of information. To understand its workings, picture a typical office with desk, chair and a row of file cabinets along the wall. A wide variety of data on personnel, school pupils, school buildings, vehicles and other facilities are stored in these cabinets.

3.2 FEASIBILITY STUDY

In system development, feasibility study is an important stage. It involves the process of gathering and interpreting facts in order to acquire a proper understanding of the system and to assist in diagnosing the problems associated with it. The goal of the feasibility study is to identify as quickly as possible whether the benefits of a proposed project outweighs its expected

cost and disruption. The outcome of this study is used to determine what must be done to solve the problems that could emanate from the system.

An analysis of the existing system was conducted and this involved an investigation into the present order, with a view to determining how an efficient system could be developed. The investigation was carried out in collaboration with users of the existing system and staff whose schedule is introductory technology.

The following methods of investigation were employed in gathering data:

- i. Observation
- ii. Record Search
- iii. Interview
- iv. Questionnaire

Parts of the current system studied included: files, method and procedure, existing hardware and software, organisational chart, staff schedule of duty, daily processing activities, problems and short comings, etc.

The users of the existing system and staff whose schedule covers introductory technology made very useful suggestions and provided helpful insights which were incorporated into the design of the new system.

3.3 OBSERVATIONS ON THE EXISTING SYSTEM

During the analysis of the existing system the usual problems associated with information storage using manual filing system were encountered. some of these problems include:

STORAGE:- Information stored on files makes the files bulky and it occupies much space on the cabinet where the file is subjected to tear, misplacement etc

RETRIEVAL:- Often there is wrong filing or a file might be misplaced.

- Because files are spread among many filing cabinets, it takes too long to locate the required file and update them.
- Several officers work on a file, as a result, a file may be in circulation with action pending while a new correspondence arrives from other schools requiring the same file.
- The speed of retrieval of file is very slow as a search has to be conducted for a particular file among many, from which the information is to be obtained.

UPDATE:- It is always difficult to update, as new information tends to stand alone from relating information required to give the full picture. As such information contained in files tends to be disjointed.

REPORT:- The time taken to write a report in response to inquiry is too long.

In View of the above stated problems, a computerised storage of information on introductory technology tools/equipment is hereby proposed to replace the existing manual system.

3.4 SYSTEM DESIGN

The design of the proposed system was done to suit the analysis undertaken. The design takes into cognisance the software that would be applicable to the computerisation of the existing storage procedures, fits the existing hardware and best suit the objectives. It gives full consideration to both the required input and output as well as files that would be required by the system. The system was designed to meet all the requirement of the existing system and other additional facilities such as flexibility, user friendliness, ease of maintenance and efficiency of the system.

The design is expected to maintain files on inventory in each school's introductory technology workshop, provide up-to-date and accurate list of tools, and other reports when required. In addition, the system must have checks and controls that will prevent or at most, reduce input/output inaccuracies.

The system will also provide an efficient and effective use of the computer system in such a way that all the necessary inventory information gathering are carried out without wasting of much time.

3.5 CHOICE OF LANGUAGE

The proposed system will use Database Management system (DBMS). A database is a large group of stored, integrated data elements that can be retrieved and manipulated with great flexibility to produce information. DBMS is a comprehensive software tool that allows users to create, maintain and

manipulate an integrated (cross-referenced) base of business data to produce relevant management information. By integrated it is meant that records are logically related to one another so that all data on a topic can be retrieved by simple request.

3.6 FEATURES OF LANGUAGE CHOSEN

It used to be that programs were developed in a file processing environment, where users and requirements were treated in isolation from application program, which operated almost independently. Files and records were designed in such a way as to satisfy individual operational needs thus imposing organizational barriers with regards to the data. However, in most information systems, it is desirable to surmount these imposed barriers and assess data right across the organisation. This necessitated the adoption of database environment. In data processing environment, data is viewed as a whole irrespective of their type. Moreover, the integration of data of different types are linked by logical relationships through a DBMS.

The features of DBMS are as follows:

1. **Elimination of Data Redundancy:-** More storage becomes available when maintenance of redundant data elements among traditionally separate application files is rendered unnecessary.
2. **Easy File Updating:-** Because there is only one copy of each data element, all applications have access to the most current data. In case of updating, data is also changed in only one place.

3. **Data Independence and Simplification of Program Maintenance:-** In a DBMS the programs are much more independent of the data than in traditional file processing system. In a DBMS, information about the format and structure of the fields and records is contained in the data dictionary; the programs do not need to contain these detail, when a change in format of one or more data elements was necessary, only the data dictionary needs to be updated.
4. **Increased User Productivity:-** The ability of a DBMS to respond quickly to user request for additional information without involving the user in technical language manipulation encourages faster and more efficient work. The report generators and query languages associated with DBMS make them easy to use.
5. **Increased Security:-** Centralized control of access to and use of the database is easily established.
6. **Standardization of Data Definitions:-** Before DBMS, each application program could define similar elements of data with different names. However, the use of data dictionaries standardizes the names and description of data elements.

3.7 OUTPUT SPECIFICATION

Output refers to the results and information that are generated by a system. The output from a computer system are required primarily to communicate the results of processing to users or other system or more

importantly, to provide a permanent (hard) copy of these results for consultation. A computer performs its expected task internally and the result would not be produced until it is told to display them.

The design process of the output begins with the identification of the output the system must produce. This is why in designing of output for the proposed system, the need of the users were fully considered. Basically the output of the proposed system was designed to generate output in the form of hard copy reports. Two reports are to be generated from the system namely;

1. List of unallocated equipment
2. Equipment allocation report

The first report contains the details of the equipment yet to be allocated to any of the available school. The specification for this report are:

- i. Equipment Name
- ii. Quantity Available
- iii. Equipment Status

The second report list all the equipment allocated to each school. The information contained therein are:

- i. Equipment
- ii. Name of Schools Allocated Tools
- iii. Quantity
- iv. Status

3.8 INPUT SPECIFICATION

Input refers to the mode of entering data into a system. It is responsible for bringing about the desired output. It is a point of most contact with the users of the system and it is prone to errors. The system input states the source and type of data that needs to be supplied in to a system.

The input design would strive to:

- i. Produce a cost effective method of input
- ii. Achieve the highest level of accuracy possible.
- iii. Ensure that the input is acceptable to and is understood by the users.

In data entry, coding method in which conditions, words, ideas, or relationships are expressed by a code, are developed and used to reduce input task, control errors, and speed of the entire process. coding ensures that there are fewer details necessary in input without loss of information.

Furthermore, the input is designed to reject non-existing codes and in appropriate data entered. This is further accompanied by a message which gives instructions to the entire users.

The input data into the new system are of two forms:

- (a) For entering data into the system-one of the input forms enables one to enter information about school into the system. This will contain information about the followings:
 - i. School Code
 - ii. School Name
 - iii. School Address

- (b) The other input form enables the user to update the tool file as regards new tools and equipment procured. The specification for this input contains information such as:
- i. Tool Code
 - ii. Tool Name
 - iii. Equipment Serial No
 - iv. Quantity Procured
 - v. Date of Procurement
 - vi. Subject
 - vii. Tool type

3.9 FILE DESIGN

The file design gives the description of all the files used in a system. It includes the description of the contents of the files used and their structures. The proposed system is designed to use Database management system. Hence, the design of database file defines the description of all the files that will be used in the proposed system. The structure states the field names, field width associated with each of the files.

The proposed computerised introductory technology tools and equipment is designed to use four (4) Database files namely; school.DBF, TOOLS.DBF, GROUP.DBF and ALLOC.DBF

- i. **SCHOOL.DBF:** This database file is a file that contains the list of all schools in Abuja Municipal Area Council at any point in time. Its structure is as stated below:

S/NO	FIELD NAME	FIELD DESCRIPTION	FIELD TYPE	WIDTH
1	SCODE	SCHOOL CODE	CHARACTER	7
2	SNAME	SCHOOL NAME	CHARACTER	45
3	SADDR	SCHOOL ADDRESS	CHARACTER	40

- ii. **TOOLS.DBF:** This database file is a file that contains details of tool acquired. The structure of the file is as shown below:

S/NO	FIELD NAME	FIELD DESCRIPTION	FIELD TYPE	WIDTH
1	TCODE	TOOL CODE	CHARACTER	8
2	TNAME	TOOL NAME	CHARACTER	40
3	TSNO	TOOL SERIAL NO.	CHARACTER	10
4	QTY	QUANTITY	NUMERIC	4
5	DATE	DATE	DATE	8
6	SUBJECT	SUBJECT	CHARACTER	20
7	TTYPE	TOOL TYPE	CHARACTER	1

- iii. **GROUP.DBF:** This database file like a reference file and it contains details of groupings of equipment. Its structure is as shown below:

S/NO	FIELD NAME	FIELD DESCRIPTION	FIELD TYPE	WIDTH
1	TCODE	TOOL CODE	CHARACTER	8
2	TNAME	TOOL NAME	CHARACTER	40
3	QTY	QUANTITY	NUMERIC	6

- iv. **ALLOC.DBF:** This database file is a file that contains detail of allocation made to each school at any point in time. The structure of the file is as show below:

S/No	FIELDNAME	FIELD DESCRIPTION	FIELD TYPE	WIDTH
1	TCCODE	TOOLCODE	CHARACTER	8
2	TNAME	TOOL NAME	CHARACTER	40
3	SCODE	SCHOOL CODE	CHARACTER	7
4	SNAME	SCHOOL NAME	CHARACTER	45
5	SUBJECT	SUBJECT	CHARACTER	1
6	DATE	DATE	DATE	8
7	QTY	QUANTITY	NUMERIC	4

3.10 SYSTEM REQUIREMENT

System requirement refers to the hardware configuration for the new system. This is a collection of hardware which forms a complete computer system. The hardware are already in place, so are the personnel required to run the system. The hardware are such that will meet both the current and the

future needs of the organisation, with respect to the volume and types of data to be processed. The system would require some supporting software that would enhance the functioning of the system. other software that would provide supporting services, such as text preparation, data analysis, engineering design and other forms of data processing are already available. The new system is designed to work on a stand alone micro-computer.

Presently, the Department of Education has the followings:

1 Computer Hardware

- | | | |
|-----|--|-----------------|
| (a) | 1 CELERON Computer with the following configuration: | |
| | Pentium 333 mh ₃ | |
| | 32MB RAM | |
| | 6.4 GB Hard disk | (N 250,000) |
| (b) | 2 IBM Computers with: | |
| | Pentium 133mh ₃ | |
| | 16MB RAM | |
| | 2.1 GB Hard disk | (N 170,000 X 2) |
| (c) | 3 SVGA Colour monitor | (N 22,000) |
| | 3 windows '95 keyboards | (N 2,000) |
| | 3 mouses and pads | (N 800) |
| | 3.5" floppy Disk Drive | (N 2,100) |
| | Full Multimedia CD-ROM | (N 9,500) |
| | 1.2 KVA UPS | (N 35,000) |

SOLEX Stabilizer	(₦ 18,000)
SOLEX Surge Arrestor	(₦ 9,000)
(d) Computer printers:	
1 Laser Jet Printer (Laser 5L)	(₦ 48,000)
1 Epson Printer (LQ 2170)	(₦ 75,000)

The total cost of items on the ground is ₦ 804,000.

The new system is designed to work on a standard micro-computer linked in form of a network. The computer configuration comprises of micro-computers, printers and an uninterrupted power supply (UPS).

Three (3) micro-computers of not less than a Pentium micro-processor with a minimum RAM of 16MB and a speed of about 166 MHZ. One of the computers possesses a hardware disk capacity of about 1.7GB and a floppy disk drive unit providing for 3.5 inches Diskette. The remaining two possess a configuration that is less in terms of the speed and RAM capacity. The features of this micro-computer would ensure speedy retrieval of information and meet up with the future computer needs of the organization.

PRINTER: In the proposed system, a printer would be required for the generation of the necessary reports. in this regard, a printer of neat letter quality feature and speed of about 200 lines per minute with a maximum width of 132 characters per line, has been

installed. Also installed is an Epson printer (LQ2170), and a laser jet printer (5L) for the production of other important documents.

UPS: This facility which is already installed ensures constant power supply to the computer and its environment. it has the capability to automatically sustain power incase of power failure, to allow for continuity of job.

The dbase IV is needed to allow for modification of the siute of programs of the new system since they were develop in the environment. for the word processing package, the Word Perfect 6.0 is being use to produce text document that are of immense importance to the organization.

3.11 BENEFITS OF THE SYSTEM

The Education Department will derive the following benefits from this new system:

- It will enhance the efficient operation of the organization in terms of tools inventory control and management.
- It will create speedy ways of responding to enquiry in order to provide reliable way of formulating policy.
- It will ensure the avoidance of problems associated with the existing system enumerated elsewhere.

- It will ensure the creation of speedy ways of generating report from the system.
- It will enhance maintenance of data security.
- It will allow for modification in the design of the system after the new system is fully documented.

3.12 PHYSICAL DESIGN OF THE PROPOSED SYSTEM

This section deals with the physical construction of the logical design described earlier. It has to do with program specification for output, input, files and processing into computer software. The designing of the computer software is important to ensure that the actual programs produced perform all tasks as intended and to allow for future modification to be performed in an efficient manner and with minimum disruption to the design of the system. Hence, the documentation of the program specification are specified in the Appendix.

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.1 IMPLEMENTATION

Implementation is the stage that involve turning the design into a working system and then monitoring the operations of the system to ensure that it is working efficiently and effectively.

Implementation is that stage of system development where the conceptual requirement of the new system and the overall objectives are to be transformed into physical reality. This is the most crucial stage in achieving a successful new system that gives users confidence that the new system will work and be effective. It involves creating the final operating documentation and procedures converting files and using the new system.

4.2 DOCUMENTATION

Documentation is the process of describing how a system work. This is required to ensure a better understanding of the system by the users. Documentation serves as a reference text for the end users in case they run into one problem or another.

In documenting the new system, the mode of starting the system and the description of the new menu structure is discussed. This is to familiarize the potential user with full operational mode of the system and the required steps for getting a job done.

Hence, documentation will be described under two sub-headings:

- i Starting the system
- ii Description of the menu structure

4.3 STARTING THE SYSTEM

Once the new system is installed, it occupies a directory of its own.

Starting the system then involves the following steps:-

- * Boot the system to get the operating system prompt (i.e c:\>)
- * Type CD\SCHOOL + (ENTER KEY)
- * Type DBASE + (ENTER key)
- * Press (ESC key) takes the user to the dot prompt
- * Type DO SCHOOL + (ENTER key)

At this instance, the main menu is displayed on the computer screen and the user will be prompted to pick a choice.

4.4 DESCRIPTION OF THE MENU STRUCTURE

The menu structure will be described using the screen design that will be contained in the Appendix. The new system is composed of FIVE options which reflects the various facilities provided by the system. The options are: school management, Tools Distribution, Tools update, Report generation and system Exit.

At the main menu, the user will be prompted to enter a letter out of the specified ones and an appropriate action will be taken. Each of the options except the system Exit menu has a sub - menu. On selection of a letter, the appropriate sub - menu appears prompting the user to make another selection. Each of the listed options in the main menu is described below.

SCHOOL MANAGEMENT

This option is used to manipulate the details of the schools within Abuja municipal Area council. It has five submenu namely: Enter School Detail, change school Details, Display School Details, Cancel School Detail and the Submenu Exit.

These suboptions enables the user to carry out various forms of manipulation on school details in the form of entering the details of new schools, changing information about school details, cancelling a school details, displaying information of a school detail and quitting the submenu respectively.

TOOLS DISTRIBUTION

Tools are distributed among the schools within Abuja Municipal Area Council. This option contains the various operations that can be carried out on distribution of tools. The enter Distribution Detail is activated when tools are to be distributed among the schools in the area council. The change distribution detail is used when tools already distributed to a school is wrongly entered into the system so that the correct distribution would be effected. The

Display Distribution Detail is used to display the distribution details already entered. The cancel distribution detail is activated when tools already distributed is to be cancelled. There is also a submenu for quitting the submenu.

REPORT GENERATION

This option is used to display various reports available in the system from which the user is expected to select the appropriate report to be printed.

SYSTEM EXIT

This is the last option in the menu and when selected, it takes the user out of the system to the operating system prompt.

4.5 SYSTEM TESTING

System testing involves the use of test data to run the new system in order to ensure that the system works adequately before further operations commences. It is a key stage in system implementation. System testing is the stage at which the logical and the physical design are thoroughly examined to ensure their workability. It also serve as a confirmation that all is well and an opportunity to show the users that the system works as required.

This new system has been fully tested to ascertain its reliability. A user's acceptance test was performed on the new system. The test involved the users of the system in testing to confirm that the system is doing what it is

required to do. The user acceptance test was done using a set of selected test data which were entered into the system. The result obtained was compared with the result from previous run and they were found to be the same. In view of the foregoing, it is hereby concluded that the developed system is working accordingly.

4.6 SYSTEM CONVERSION

When a manual system is computerized, system conversion needs to be carried out. System conversion involves file conversion, file set up and changeover.

FILE CONVERSION: Is the changing of the existing files to the format and content required by the new system.

FILE SET UP: Is the process of setting up the converted files on the computer.

CHANGEOVER: Is the full replacement of all the old procedures by the new ones. Changeover may be achieved in a number of ways:-

DIRECT CHANGEOVER

The change is made at once. The old system is halted on a planned date and the new system is activated. This approach is most often used for small system or larger system for which a systems model was previously developed and thoroughly tested. Simply halting the old system and starting up the new system is a very simple approach; however this method carries some risks.

PARALLEL CHANGEOVER

This involves running the old system and the new system at the same time for specific period. The results of using the new system are compared to the old system. If the performance of the new system is satisfactory, use of the old system is discontinued. This approach is the safest because operations do not have to be shut down if the new system has problems; however, it is by far the most expensive and difficult approach to coordinate. This is the approach recommended for this system.

PHASED CHANGEOVER

This refers to changeover being handled one phase at a time. Some systems are just too broad in scope or are so large that the changeover must be carried out in phases to avoid the traumatic effect of trying to handle the changeover all at once.

If a system changeover is to be carried out at many locations in a widely dispersed organisation, the task can be very difficult to manage all at once. To conduct the changeover at one location at a time and ensure that it is working correctly before moving on to other locations is safer. This is called **PILOT CHANGEOVER**.

4.7 SYSTEM MAINTENANCE

System maintenance is not actually part of the systems development life cycle. It refers to adjustments that needs to be made to the system after the changeover. These adjustments may be needed because, as users gain

experience in using the new system, they may discover minor processing errors. Or government report regulations may change creating new requirement for the system to satisfy.

4.8 POST IMPLEMENTATION REVIEW

After a new system has been in operation for several months and any necessary systems maintenance has been done, a formal evaluation called post implementation evaluation of the new system takes place. This determines either that the new system takes place. This determine either that the new system is meeting its objectives or that certain things needs to be done so that it will. The systems evaluation report is prepared, this summarizes the extent to which the system meets the original objectives and includes a list of enhancements to be considered for future development and implementation.

The objectives of the post implementation review would be to:

- i. Determine whether the system goal and objectives have been achieve.
 - ii. Determine whether inventory procedure, operating activities, and other control has been improved.
 - iii. Determine whether user services requirements have been met while, simultaneously reducing error and costs
 - iv. Determine whether known or unexpected limitations of the system need attention.
- etc.

Any amendment procedure required, with the use of this system would have to be agreed upon with the users. The users are expected to identify any problem areas or external requirement of the system. Based on this the system will then be further designed to meet the requirement of the system.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

The adoption of computer-based system to replace manual procedures has in recent times, become the norm, where the cost benefit analysis result is in the affirmative. This is due largely, to the computers relevance in virtually all aspects of human endeavour.

This interest to computerise is further intensified by the capability of computers to perform a given set of procedures with all the required accuracy and efficiency. This is in addition to its almost non-existent error and its ability to accomplish any task with high speed and within a reasonable time.

From the exposition made in this study, it would be expected that a computer-based procedure such as is being proposed here, needs to be designed in a way that will achieve the benefits of computer usage in terms of speed, full automation of procedures, avoid constant problems, ensure data security etc. This is what this study has been able to achieve.

The pursuance of the installation of this newly designed system should be absolute as all the procedures have been tested and confirmed efficient. Therefore its application to inventory management will meet both the present and the future needs of the Education Department with regards to the Secondary Schools in its municipal Area Council and the Introductory Technology Workshops therein.

In recognition of the relevance of the computer and its capability, this newly designed computerised introductory technology tools and equipment is hereby proposed for adoption in the Education Department of the Federal Capital Development Authority Abuja. The installation of the proposed system is to achieve the maximization of the benefits stated elsewhere in this work.

5.2 RECOMMENDATION

The Federal Capital Development Authority Abuja has one of the most vibrant training programmes in the country. This is what my employers, the Education Department of the organisation has packaged for its staff that meet its laid down requirement. This vibrant training programme, which can be attested to by the number of its staff that have benefitted, should be sustained and is recommended to the ministry of education in all states of the federation.

Furthermore, I crave the indulgence of the FCT administration, to suggest that the possibility of providing all divisional heads with computer in their offices as a matter of deliberate policy, should be looked into earnestly.

The effective implementation of the provisions of the National Policy on education is being hampered. I would suggest that Science/Technical education boards needs to be instituted at all states levels and should be provided with the mandate and resources to oversee the Technical Colleges and introductory technology at the Secondary Schools.

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APPENDIX I: SCREEN OUTPUT

ABUJA MUNICIPAL AREA COUNCIL	
COMPUTERISED TOOLS ALLOCATION & INSTALLATION	
MAIN MENU	
A	----- SCHOOL MANAGEMENT
B	----- TOOLS DISTRIBUTION
C	----- TOOLS UPDATE
D	----- REPORT GENERATION
E	----- SYSTEM EXIT
Pick your choice (A, B, C, D, or E):	

FIGURE I

ABUJA MUNICIPAL AREA COUNCIL

COMPUTERISED TOOLS ALLOCATION & INSTALLATION

SCHOOL MANAGEMENT OPTION

- A ----- ENTER SCHOOL DETAIL
- B ----- CHANGE SCHOOL DETAIL
- C ----- DISPLAY SCHOOL DETAIL
- D ----- CANCEL SCHOOL DETAIL
- E ----- SUBMENU EXIT

Pick your choice (A, B, C, D, or E):

FIGURE II

ABUJA MUNICIPAL AREA COUNCIL

SCHOOL DETAIL ENTRY FORM

SCHOOL DETAIL (Press ENTER KEY to Exit): SC/0020

SCHOOL NAME: GOVERNMENT SECONDARY SCHOOL, GARKI

LOCATION: AREA 7, MOSHOOD ABIOLA ROAD, ABUJA

DATE OF REGISTRATION: 21/03/97

SAVE SCHOOL DETAILS (Y/N):

FIGURE III

ABUJA MUNICIPAL AREA COUNCIL

SCHOOL DETAIL MODIFICATION FORM

SCHOOL DETAIL (Press ENTER KEY to Exit): SC/0020

SCHOOL NAME: GOVERNMENT SECONDARY SCHOOL, GARKI

LOCATION: AREA 7, MOSHOOD ABIOLA ROAD, ABUJA

DATE OF REGISTRATION: 21/03/97

SAVE CHANGES (Y/N):

FIGURE IV

ABUJA MUNICIPAL AREA COUNCIL

SCHOOL DETAIL DISPLAY FORM

SCHOOL DETAIL (Press ENTER KEY to Exit): SC/0020

SCHOOL NAME: GOVERNMENT SECONDARY SCHOOL, GARKI

LOCATION: AREA 7, MOSHOOD ABIOLA ROAD, ABUJA

DATE OF REGISTRATION: 21/03/97

DISPLAYING SCHOOL DETAILS - Press any key ...

FIGURE V

ABUJA MUNICIPAL AREA COUNCIL

SCHOOL DETAIL CANCELLATION FORM

SCHOOL DETAIL (Press ENTER KEY to Exit): SC/0020

SCHOOL NAME: GOVERNMENT SECONDARY SCHOOL, GARKI

LOCATION: AREA 7, MOSHOOD ABIOLA ROAD, ABUJA

DATE OF REGISTRATION: 21/03/97

TO DELETE SCHOOL DETAILS (Y/N) :

FIGURE VI

ABUJA MUNICIPAL AREA COUNCIL

COMPUTERISED TOOLS ALLOCATION & INSTALLATION

TOOLS DISTRIBUTION OPTION

- A ----- ENTER DISTRIBUTION DETAIL
- B ----- CHANGE DISTRIBUTION DETAIL
- C ----- DISPLAY DISTRIBUTION DETAIL
- D ----- CANCEL DISTRIBUTION DETAIL
- E ----- SUBMENU EXIT

Pick your choice (A, B, C, D, or E):

FIGURE VII

ABUJA MUNICIPAL AREA COUNCIL

TOOLS DISTRIBUTION ENTRY FORM

ALLOCATION NO. (Press ENTER KEY to Exit): 0022

TOOLS CODE: WW/0001 - HAND TOOL NO. 5

SCHOOL CODE: SC/0020 - GOVERNMENT SECONDARY SCHOOL, GARKI

DATE OF DISTRIBUTION: 12/12/99

SAVE ALLOCATION DETAILS (Y/N):

FIGURE VIII

ABUJA MUNICIPAL AREA COUNCIL

TOOLS DISTRIBUTION MODIFICATION FORM

ALLOCATION NO. (Press ENTER KEY to Exit): 0022

TOOLS CODE: WW/0001 - HAND TOOL NO. 5

SCHOOL CODE: SC/0020 - GOVERNMENT SECONDARY SCHOOL, GARKI

DATE OF DISTRIBUTION: 12/12/99

SAVE CHANGES (Y/N):

FIGURE IX

ABUJA MUNICIPAL AREA COUNCIL

TOOLS DISTRIBUTION DISPLAY FORM

ALLOCATION NO. (Press ENTER KEY to Exit): 0022

TOOLS CODE: WW/0001 - HAND TOOL NO. 5

SCHOOL CODE: SC/0020 - GOVERNMENT SECONDARY SCHOOL, GARKI

DATE OF DISTRIBUTION: 12/12/99

DISPLAYING ALLOCATION DETAILS - Press any key ...

FIGURE X

ABUJA MUNICIPAL AREA COUNCIL

TOOLS DISTRIBUTION CANCELLATION FORM

ALLOCATION NO. (Press ENTER KEY to Exit): 0022

TOOLS CODE: WW/0001 - HAND TOOL NO. 5

SCHOOL CODE: SC/0020 - GOVERNMENT SECONDARY SCHOOL, GARKI

DATE OF DISTRIBUTION: 12/12/99

TO DELETE ALLOCATION DETAILS (Y/N) :

FIGURE XI

ABUJA MUNICIPAL AREA COUNCIL

COMPUTERISED TOOLS ALLOCATION & INSTALLATION

TOOLS UPDATE OPTION

- A ----- ENTER TOOLS DETAIL
- B ----- CHANGE TOOLS DETAIL
- C ----- DISPLAY TOOLS DETAIL
- D ----- CANCEL TOOLS DETAIL
- E ----- SUBMENU EXIT

Pick your choice (A, B, C, D, or E):

FIGURE XII

ABUJA MUNICIPAL AREA COUNCIL

TOOLS ENTRY FORM

TOOLS CODE: WW/0001

CATEGORY: WOOD WORK

TOOLS DESCRIPTION: HAND TOOL NO. 5

COST OF PURCHASE: #

12,000.00

DATE OF PURCHASE: 12/07/98

EQUIPMENT MAKE: C11B5

MODEL NO: M1045

CAPACITY:

SAVE TOOLS DETAILS (Y/N):

FIGURE XIII

ABUJA MUNICIPAL AREA COUNCIL

TOOLS MODIFICATION FORM

TOOLS CODE: WW/0001

CATEGORY: WOOD WORK

TOOLS DESCRIPTION: HAND TOOL NO. 5

COST OF PURCHASE: #

12,000.00

DATE OF PURCHASE: 12/07/98

EQUIPMENT MAKE: C11B5

MODEL NO: M1045

CAPACITY:

SAVE CHANGES (Y/N):

FIGURE XIV

ABUJA MUNICIPAL AREA COUNCIL

TOOLS DISPLAY FORM

TOOLS CODE: WW/0001

CATEGORY: WOOD WORK

TOOLS DESCRIPTION: HAND TOOL NO. 5

COST OF PURCHASE: #

12,000.00

DATE OF PURCHASE: 12/07/98

EQUIPMENT MAKE: C11B5

MODEL NO: M1045

CAPACITY:

DISPLAYING TOOLS DETAILS - Press any key ...

FIGURE XV

ABUJA MUNICIPAL AREA COUNCIL

TOOLS CANCELLATION FORM

TOOLS CODE: WW/0001

CATEGORY: WOOD WORK

TOOLS DESCRIPTION: HAND TOOL NO. 5

COST OF PURCHASE: #

12,000.00

DATE OF PURCHASE: 12/07/98

EQUIPMENT MAKE: C11B5

MODEL NO: M1045

CAPACITY:

TO DELETE TOOLS DETAILS (Y/N):

FIGURE XVI

ABUJA MUNICIPAL AREA COUNCIL
=====

TOOLS DISTRIBUTION REPORT
=====

C. NO	TOOLS DESCRIPTION	SCHOOL NAME	ALLOC.DATE
022	HAND TOOL NO. 5	GOVERNMENT SECONDARY SCHOOL, GARKI	12/12/99
012	SWITCH BOARD	JUNIOR SECONDARY SCHOOL, WUSE	01/10/99
033	504 S/CAR-AB123ABC	GIRLS DAY SECONDARY SCHOOL, GARKI	01/03/99

FIGURE XVII

APPENDIX II: SOURCE PROGRAM

FCDA.PRG

```
set talk off
set status off
set scoreboard off
set bell off
set date british
do while .t.
    clear
    @ 1,13 to 23,65 double
    @ 2,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
    @ 3,14 to 3,64 double
    @ 4,18 say 'COMPUTERISED TOOLS ALLOCATION & INSTALLATION'
    @ 5,14 to 5,64
    @ 8,35 say 'MAIN MENU'
    @ 9,20 to 19,59
    @ 10,25 say 'A ----- SCHOOL MANAGEMENT'
    @ 12,25 say 'B ----- TOOLS DISTRIBUTION'
    @ 14,25 say 'C ----- TOOLS UPDATE'
    @ 16,25 say 'D ----- REPORT GENERATION'
    @ 18,25 say 'E ----- SYSTEM EXIT'
    @ 21,21 say 'Pick your choice (A, B, C, D, or E):'
do while .t.
    choice1 = ' '
    @ 21,58 get choice1 picture '!'
    read
    if choice1 $ 'ABCDE'
        exit
    endif
```

```
enddo
do case
  case choice1 = 'A'
    do school
  case choice1 = 'B'
    do distrib
  case choice1 = 'C'
    do update
  case choice1 = 'D'
    do rep
  otherwise
    exit
endcase
enddo
clear
return
```

SCHOOL.PRG

```
set talk off
set status off
set scoreboard off
set bell off
set date british
do while .t.
  clear
  @ 1,13 to 23,65 double
  @ 2,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 3,14 to 3,64 double
  @ 4,18 say 'COMPUTERISED TOOLS ALLOCATION & INSTALLATION'
  @ 5,14 to 5,64
```

```

@ 8,28 say 'SCHOOL MANAGEMENT OPTION'
@ 9,20 to 19,59
@ 10,23 say 'A ----- ENTER SCHOOL DETAIL'
@ 12,23 say 'B ----- CHANGE SCHOOL DETAIL'
@ 14,23 say 'C ----- DISPLAY SCHOOL DETAIL'
@ 16,23 say 'D ----- CANCEL SCHOOL DETAIL'
@ 18,23 say 'E ----- SUBMENU EXIT'
@ 21,21 say 'Pick your choice (A, B, C, D, or E):'
do while .t.
  choice1 = ' '
  @ 21,58 get choice1 picture '!'
  read
  if choice1 $ 'ABCDE'
    exit
  endif
enddo
do case
  case choice1 = 'A'
    do school1
  case choice1 = 'B'
    do school2
  case choice1 = 'C'
    do school3
  case choice1 = 'D'
    do school4
  otherwise
    exit
endcase
enddo
clear
return

```

SCHOOL1.PRG

```
use school
do while .t.
  clear
  @ 2,10 to 21,71 double
  @ 17,11 to 17,70 double
  @ 3,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 4,26 to 4,53 double
  @ 6,28 say "SCHOOL DETAIL ENTRY FORM"
  @ 7,28 to 7,51
  mscode = space(7)
  @ 9,13 say 'SCHOOL DETAIL (Press ENTER KEY to Exit):' get mscode
picture 'SC/9999'
  read
  if mscode = space(7)
    exit
  endif
  go top
  locate for scode = mscode
  if found()
    @ 19,17 say 'SCHOOL CODE ALREADY EXIST - Press any key ...'
    set console off
    wait
    set console on
  loop
endif
store space(40) to msname
store space(45) to msaddr
store ctod(' / / ') to mdate
@ 11,13 say 'SCHOOL NAME:' get msname picture '@!'
```

```

@ 13,13 say 'LOCATION:' get msaddr picture '@!'
@ 15,13 say 'DATE OF REGISTRATION:' get mdate
read
@ 19,26 say 'SAVE SCHOOL DETAILS (Y/N):'
do while .t.
  choice = ' '
  @ 19,53 get choice picture '!
  read
  if choice $ 'YN'
    exit
  endif
enddo
if choice = 'Y'
  append blank
  replace scode with mscode,sname with msname
  replace saddr with msaddr,date with mdate
endif
enddo
use
clear
return

```

SCHOOL2.PRG

```

use school
do while .t.
  clear
  @ 2,10 to 21,71 double
  @ 17,11 to 17,70 double
  @ 3,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 4,26 to 4,53 double

```

```

@ 6,24 say "SCHOOL DETAIL MODIFICATION FORM"
@ 7,24 to 7,54
mscode = space(7)
@ 9,13 say 'SCHOOL DETAIL (Press ENTER KEY to Exit):' get mscode
picture 'SC/9999'
read
if mscode = space(7)
    exit
endif
go top
locate for scode = mscode
if .not. found()
    @ 19,17 say 'SCHOOL CODE DOES NOT EXIST - Press any key ...'
    set console off
    wait
    set console on
    loop
endif
msname = sname
msaddr = saddr
mdate = date
@ 11,13 say 'SCHOOL NAME:' get msname picture '@!'
@ 13,13 say 'LOCATION:' get msaddr picture '@!'
@ 15,13 say 'DATE OF REGISTRATION:' get mdate
read
@ 19,29 say 'SAVE CHANGES (Y/N):'
do while .t.
    choice = ''
    @ 19,49 get choice picture '!
    read
    if choice $ 'YN'

```

```
        exit
    endif
enddo
if choice = 'Y'
    replace scode with mscode,sname with msname
    replace saddr with msaddr,date with mdate
endif
enddo
use
clear
return
```

SCHOOL3.PRG

```
use school
do while .t.
    clear
    @ 2,10 to 21,71 double
    @ 17,11 to 17,70 double
    @ 3,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
    @ 4,26 to 4,53 double
    @ 6,27 say "SCHOOL DETAIL DISPLAY FORM"
    @ 7,27 to 7,52
    mscode = space(7)
    @ 9,13 say 'SCHOOL DETAIL (Press ENTER KEY to Exit):' get mscode
picture 'SC/9999'
    read
    if mscode = space(7)
        exit
    endif
go top
```

```

locate for scode = mscode
if .not. found()
  @ 19,17 say 'SCHOOL CODE DOES NOT EXIST - Press any key ...'
  set console off
  wait
  set console on
  loop
endif
msname = sname
msaddr = saddr
mdate = date
@ 11,13 say 'SCHOOL NAME:' get msname picture '@!'
@ 13,13 say 'LOCATION:' get msaddr picture '@!'
@ 15,13 say 'DATE OF REGISTRATION:' get mdate
clea gets
@ 19,17 say 'DISPLAYING SCHOOL DETAILS - Press any key ...'
set cons off
wait
set cons on
enddo
use
clear
return

```

SCHOOL4.PRG

```

use school
do while .t.
  clear
  @ 2,10 to 21,71 double
  @ 17,11 to 17,70 double

```



```

@ 3,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
@ 4,26 to 4,53 double
@ 6,24 say "SCHOOL DETAIL CANCELLATION FORM"
@ 7,24 to 7,54
mscode = space(7)
@ 9,13 say 'SCHOOL DETAIL (Press ENTER KEY to Exit):' get mscode
picture 'SC/9999'
read
if mscode = space(7)
    exit
endif
go top
locate for scode = mscode
if .not. found()
    @ 19,17 say 'SCHOOL CODE DOES NOT EXIST - Press any key ...'
    set console off
    wait
    set console on
    loop
endif
msname = sname
msaddr = saddr
mdate = date
@ 11,13 say 'SCHOOL NAME:' get msname picture '@!'
@ 13,13 say 'LOCATION:' get msaddr picture '@!'
@ 15,13 say 'DATE OF REGISTRATION:' get mdate
clea gets
@ 19,23 say 'TO DELETE SCHOOL DETAILS (Y/N):'
do while .t.
    choice = ' '
    @ 19,55 get choice picture '!'
```

```
read
if choice $ 'YN'
  exit
endif
enddo
if choice = 'Y'
  delete
  pack
endif
enddo
use
clear
return
```

DISTRIB.PRG

```
set talk off
set status off
set scoreboard off
set bell off
set date british
do while .t.
  clear
  @ 1,13 to 23,66 double
  @ 2,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 3,14 to 3,65 double
  @ 4,18 say 'COMPUTERISED TOOLS ALLOCATION & INSTALLATION'
  @ 5,14 to 5,65
  @ 8,27 say 'TOOLS DISTRIBUTION OPTION'
  @ 9,18 to 19,62
  @ 10,21 say 'A ----- ENTER DISTRIBUTION DETAIL'
```

```

@ 12,21 say 'B ----- CHANGE DISTRIBUTION DETAIL'
@ 14,21 say 'C ----- DISPLAY DISTRIBUTION DETAIL'
@ 16,21 say 'D ----- CANCEL DISTRIBUTION DETAIL'
@ 18,21 say 'E ----- SUBMENU EXIT'
@ 21,21 say 'Pick your choice (A, B, C, D, or E):'
do while .t.
  choice1 = ' '
  @ 21,58 get choice1 picture '!
  read
  if choice1 $ 'ABCDE'
    exit
  endif
enddo
do case
  case choice1 = 'A'
    do distrib1
  case choice1 = 'B'
    do distrib2
  case choice1 = 'C'
    do distrib3
  case choice1 = 'D'
    do distrib4
  otherwise
    exit
endcase
enddo
clear
return

```

DISTRIB1.PRG

```
select 1
  use school
select 2
  use tools
select 3
  use distrib
select 3
do while .t.
  clear
  @ 3,3 to 22,76 double
  @ 18,4 to 18,75 double
  @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 5,26 to 5,53 double
  @ 7,25 say "TOOLS DISTRIBUTION ENTRY FORM"
  @ 6,23 to 8,55
  mano = spac(4)
  @ 10,6 say 'ALLOCATION NO. (Press ENTER KEY to Exit):' get mano
picture '9999'
read
if mano = space(4)
  exit
endif
go top
locate for ano = mano
if found()
  @ 21,16 say 'ALLOCATION NO. ALREADY EXIST - Press any key ...'
  set console off
  wait
  set console on
```

```

loop
endif
mtcode = space(7)
mscode = space(7)
mdated = ctod(' / / ')
msdesc = space(40)
mtdesc = space(45)
@ 12,6 say 'TOOLS CODE: ' get mtcode pict '!!!/9999'
read
@ 12,27 say '- '
select 2
go top
loca for tcode = mtcode
mtdesc = tdesc
@ 12,29 get mtdesc
clea gets
@ 14,6 say 'SCHOOL CODE:' get mscode pict '!!!/9999'
read
@ 14,27 say '- '
select 1
go top
loca for scode = mscode
msdesc = sname
@ 14,29 get msdesc
clea gets
@ 16,6 say 'DATE OF DISTRIBUTION:' get mdated
read
select 3
@ 20,24 say 'SAVE ALLOCATION DETAILS (Y/N):'
do while .t.
choice = ' '

```

```
@ 20,55 get choice picture '!'  
read  
if choice $ 'YN'  
    exit  
endif  
enddo  
if choice = 'Y'  
    append blank  
    replace tcode with mtcode,tdesc with mtdesc  
    replace dated with mdated,ano with mano  
    replace scode with mscode,sname with msdesc  
endif  
enddo  
close all  
clear  
return
```

DISTRIB2.PRG

```
select 1  
    use school  
select 2  
    use tools  
select 3  
    use distrib  
select 3  
do while .t.  
    clear  
    @ 3,3 to 22,76 double  
    @ 18,4 to 18,75 double  
    @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
```

```

@ 5,26 to 5,53 double
@ 7,22 say "TOOLS DISTRIBUTION MODIFICATION FORM"
@ 6,20 to 8,59
mano = spac(4)
@ 10,6 say 'ALLOCATION NO. (Press ENTER KEY to Exit):' get mano
picture '9999'
read
if mano = space(4)
  exit
endif
go top
locate for ano = mano
if .not. found()
  @ 21,16 say 'ALLOCATION NO. DOES NOT EXIST - Press any key ...'
  set console off
  wait
  set console on
  loop
endif
mtcode = tcode
mscode = scode
mdated = dated
msdesc = sname
mtdesc = tdesc
@ 12,6 say 'TOOLS CODE: ' get mtcode pict '!!/9999'
@ 12,27 say '-'
@ 12,29 get mtdesc
@ 14,6 say 'SCHOOL CODE:' get mscode pict '!!/9999'
@ 14,27 say '-'
@ 14,29 get msdesc
@ 16,6 say 'DATE OF DISTRIBUTION:' get mdated

```

```

clea gets
@ 12,6 say 'TOOLS CODE: ' get mtcode pict '!!/9999'
read
@ 12,27 say '- '
select 2
go top
loca for tcode = mtcode
mtdesc = tdesc
@ 12,29 get mtdesc
clea gets
@ 14,6 say 'SCHOOL CODE:' get mscode pict '!!/9999'
read
@ 14,27 say '- '
select 1
go top
loca for scode = mscode
msdesc = sname
@ 14,29 get msdesc
clea gets
@ 16,6 say 'DATE OF DISTRIBUTION:' get mdated
read
select 3
@ 20,29 say 'SAVE CHANGES (Y/N):'
do while .t.
    choice = ' '
    @ 20,49 get choice picture '! '
    read
    if choice $ 'YN'
        exit
    endif
enddo

```



```
if choice = 'Y'
    replace tcode with mrcode,tdesc with mtdesc
    replace dated with mdated,ano with mano
    replace scode with mscode,sname with msdesc
endif
enddo
close all
clear
return
```

DISTRIB3.PRG

```
use distrib
do while .t.
    clear
    @ 3,3 to 22,76 double
    @ 18,4 to 18,75 double
    @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
    @ 5,26 to 5,53 double
    @ 7,24 say "TOOLS DISTRIBUTION DISPLAY FORM"
    @ 6,22 to 8,56
    mano = spac(4)
    @ 10,6 say 'ALLOCATION NO. (Press ENTER KEY to Exit):' get mano
picture '9999'
read
if mano = space(4)
    exit
endif
go top
locate for ano = mano
if .not. found()
```

```
@ 21,16 say 'ALLOCATION NO. DOES NOT EXIST - Press any key ...'  
set console off  
wait  
set console on  
loop  
endif  
mtcode = tcode  
mscode = scode  
mdated = dated  
msdesc = sname  
mtdesc = tdesc  
@ 12,6 say 'TOOLS CODE: ' get mtcodes pict '!!/9999'  
@ 12,27 say '-'  
@ 12,29 get mtdesc  
@ 14,6 say 'SCHOOL CODE:' get mscode pict '!!/9999'  
@ 14,27 say '-'  
@ 14,29 get msdesc  
@ 16,6 say 'DATE OF DISTRIBUTION:' get mdated  
clear gets  
@ 20,15 say 'DISPLAYING ALLOCATION DETAILS - Press any key ...'  
set console off  
wait  
set console on  
enddo  
use  
clear  
return
```

DISTRIB4.PRG

```
use distrib
```

```

do while .t.
  clear
  @ 3,3 to 22,76 double
  @ 18,4 to 18,75 double
  @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 5,26 to 5,53 double
  @ 7,22 say "TOOLS DISTRIBUTION CANCELLATION FORM"
  @ 6,20 to 8,59
  mano = spac(4)
  @ 10,6 say 'ALLOCATION NO. (Press ENTER KEY to Exit):' get mano
picture '9999'
  read
  if mano = space(4)
    exit
  endif
  go top
  locate for ano = mano
  if .not. found()
    @ 21,16 say 'ALLOCATION NO. DOES NOT EXIST - Press any key ...'
    set console off
    wait
    set console on
    loop
  endif
  mtcode = tcode
  mscode = scode
  mdated = dated
  msdesc = sname
  mtdesc = tdesc
  @ 12,6 say 'TOOLS CODE: ' get mtcode pict '!!/9999'
  @ 12,27 say '-'

```

```

@ 12,29 get mtdesc
@ 14,6 say 'SCHOOL CODE:' get mscode pict '!!/9999'
@ 14,27 say '-'
@ 14,29 get msdesc
@ 16,6 say 'DATE OF DISTRIBUTION:' get mdated
clea gets
@ 20,21 say 'TO DELETE ALLOCATION DETAILS (Y/N):'
do while .t.
    choice = ' '
    @ 20,57 get choice picture '!'
    read
    if choice $ 'YN'
        exit
    endif
enddo
if choice = 'Y'
    delete
    pack
endif
enddo
use
clear
return

```

UPDATE.PRG

```

set talk cff
set status off
set scoreboard off
set bell off
set date british

```

```

do while .t.
  clear
  @ 1,13 to 23,65 double
  @ 2,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 3,14 to 3,64 double
  @ 4,18 say 'COMPUTERISED TOOLS ALLOCATION & INSTALLATION'
  @ 5,14 to 5,64
  @ 8,30 say 'TOOLS UPDATE OPTION'
  @ 9,20 to 19,59
  @ 10,23 say 'A ----- ENTER TOOLS DETAIL'
  @ 12,23 say 'B ----- CHANGE TOOLS DETAIL'
  @ 14,23 say 'C ----- DISPLAY TOOLS DETAIL'
  @ 16,23 say 'D ----- CANCEL TOOLS DETAIL'
  @ 18,23 say 'E ----- SUBMENU EXIT'
  @ 21,21 say 'Pick your choice (A, B, C, D, or E):'
do while .t.
  choice1 = ' '
  @ 21,58 get choice1 picture '!'
  read
  if choice1 $ 'ABCDE'
    exit
  endif
enddo
do case
  case choice1 = 'A'
    do update1
  case choice1 = 'B'
    do update2
  case choice1 = 'C'
    do update3
  case choice1 = 'D'

```

```
        do update4
    otherwise
        exit
    endcase
enddo
clear
return
```

UPDATE1.PRG

```
use tools
do while .t.
    clear
    @ 3,3 to 22,76 double
    @ 18,4 to 18,75 double
    @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
    @ 5,26 to 5,53 double
    @ 7,32 say "TOOLS ENTRY FORM"
    @ 6,31 to 8,48
    mtcode = space(7)
    @ 10,6 say 'TOOLS CODE (Press ENTER KEY to Exit):' get mtcode picture
'!!/9999'
    read
    if mtcode = space(7)
        exit
    endif
    go top
    locate for tcode = mtcode
    if found()
        @ 21,18 say 'TOOLS CODE ALREADY EXIST - Press any key ...'
        set console off
```

```

wait
set console on
loop
endif
@ 10,6 clear to 10,68
@ 10,6 say 'TOOLS CODE:' get mrcode
clea gets
store space(5) to mmake,mmode,mcapa
mdatep = ctod(' / / ')
mcost = 0
mcdesc = spac(25)
mtdesc = spac(45)
@ 10,35 say 'CATEGORY:' get mcdesc pict '@!'
@ 12,6 say 'TOOLS DESCRIPTION:' get mtdesc picture '@!'
@ 14,6 say 'COST OF PURCHASE: #'
@ 14,25 get mcost picture '999,999,999,999.99'
@ 14,48 say 'DATE OF PURCHASE:' get mdatep
@ 16,6 say 'EQUIPMENT MAKE:' get mmake picture '@!'
@ 16,34 say 'MODEL NO:' get mmode
@ 16,55 say 'CAPACITY:' get mcapa picture '@!'
read
@ 20,26 say 'SAVE TOOLS DETAILS (Y/N):'
do while .t.
  choice = ' '
  @ 20,52 get choice picture '!
  read
  if choice $ 'YN'
    exit
  endif
enddo
if choice = 'Y'

```

```
append blank
replace tcode with mrcode,tdesc with mrdesc
replace datep with mdatep,cost with mcost
replace capa with mcapa,cdesc with mcdesc
replace make with mmake,mode with mmode
endif
enddo
close all
clear
return
```

UPDATE2.PRG

```
use tools
do while .t.
  clear
  @ 3,3 to 22,76 double
  @ 18,4 to 18,75 double
  @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 5,26 to 5,53 double
  @ 7,26 say "TOOLS MODIFICATION FORM"
  @ 6,24 to 8,54
  mrcode = space(7)
  @ 10,6 say 'TOOLS CODE (Press ENTER KEY to Exit):' get mrcode picture
  '!!/9999'
  read
  if mrcode = space(7)
    exit
  endif
  go top
  locate for tcode = mrcode
```



```

if .not. found()
  @ 21,18 say 'TOOLS CODE DOES NOT EXIST - Press any key ...'
  set console off
  wait
  set console on
  loop
endif
@ 10,6 clear to 10,68
@ 10,6 say 'TOOLS CODE:' get mtcode
mmake = make
mmode = mode
mcapa = capa
mdatep = datep
mcost = cost
mcdesc = cdesc
mtdesc = tdesc
@ 10,35 say 'CATEGORY:' get mcdesc pict '@!'
@ 12,6 say 'TOOLS DESCRIPTION:' get mtdesc picture '@!'
@ 14,6 say 'COST OF PURCHASE: #'
@ 14,25 get mcost picture '999,999,999,999.99'
@ 14,48 say 'DATE OF PURCHASE:' get mdatep
@ 16,6 say 'EQUIPMENT MAKE:' get mmake picture '@!'
@ 16,34 say 'MODEL NO:' get mmode
@ 16,55 say 'CAPACITY:' get mcapa picture '@!'
clea gets
@ 10,35 say 'CATEGORY:' get mcdesc pict '@!'
@ 12,6 say 'TOOLS DESCRIPTION:' get mtdesc picture '@!'
@ 14,6 say 'COST OF PURCHASE: #'
@ 14,25 get mcost picture '999,999,999,999.99'
@ 14,48 say 'DATE OF PURCHASE:' get mdatep
@ 16,6 say 'EQUIPMENT MAKE:' get mmake picture '@!'

```

```

@ 16,34 say 'MODEL NO:' get mmode
@ 16,55 say 'CAPACITY:' get mcapa picture '@!'
read
@ 20,29 say 'SAVE CHANGES (Y/N):'
do while .t.
    choice = ' '
    @ 20,49 get choice picture '!
    read
    if choice $ 'YN'
        exit
    endif
enddo
if choice = 'Y'
    replace tcode with mcode,tdesc with mtdesc
    replace datep with mdatep,cost with mcost
    replace make with mmake,mode with mmode
    replace capa with mcapa,cdesc with mcdesc
endif
enddo
close all
clear
return

```

UPDATE3.PRG

```

use tools
do while .t.
    clear
    @ 3,3 to 22,76 double
    @ 18,4 to 18,75 double
    @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'

```

```

@ 5,26 to 5,53 double
@ 7,29 say "TOOLS DISPLAY FORM"
@ 6,27 to 8,52
mtcode = space(7)
@ 10,6 say 'TOOLS CODE (Press ENTER KEY to Exit):' get mtcode picture
'!/9999'
read
if mtcode = space(7)
    exit
endif
go top
locate for tcode = mtcode
if .not. found()
    @ 21,18 say 'TOOLS CODE DOES NOT EXIST - Press any key ...'
    set console off
    wait
    set console on
    loop
endif
@ 10,6 clear to 10,68
@ 10,6 say 'TOOLS CODE:' get mtcode
mmake = make
mmode = mode
mcapa = capa
mdatep = datep
mcost = cost
mcdesc = cdesc
mtdesc = tdesc
@ 10,35 say 'CATEGORY:' get mcdesc pict '@!'
@ 12,6 say 'TOOLS DESCRIPTION:' get mtdesc picture '@!'
@ 14,6 say 'COST OF PURCHASE: #'

```

```

@ 14,25 get mcost picture '999,999,999,999.99'
@ 14,48 say 'DATE OF PURCHASE:' get mdatep
@ 16,6 say 'EQUIPMENT MAKE:' get mmake picture '@!'
@ 16,34 say 'MODEL NO:' get mmode
@ 16,55 say 'CAPACITY:' get mcapa picture '@!'
clea gets
@ 20,18 say 'DISPLAYING TOOLS DETAILS - Press any key ...'
set cons off
wait
set cons on
enddo
use
clear
return

```

UPDATE4.PRG

```

use tools
do while .t.
  clear
  @ 3,3 to 22,76 double
  @ 18,4 to 18,75 double
  @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
  @ 5,26 to 5,53 double
  @ 7,26 say "TOOLS CANCELLATION FORM"
  @ 6,24 to 8,54
  mtcode = space(7)
  @ 10,6 say 'TOOLS CODE (Press ENTER KEY to Exit):' get mtcode picture
'!!/9999'
  read
  if mtcode = space(7)

```

```

    exit
endif
go top
locate for tcode = mrcode
if .not. found()
    @ 21,18 say 'TOOLS CODE DOES NOT EXIST - Press any key ...'
    set console off
    wait
    set console on
    loop
endif
@ 10,6 clear to 10,68
@ 10,6 say 'TOOLS CODE:' get mrcode
mrcode = mrcode
mcode = code
mcapa = capa
mdatep = datep
mcost = cost
mcdesc = cdsc
mtdesc = tdsc
@ 10,35 say 'CATEGORY:' get mcdesc pict '@!'
@ 12,6 say 'TOOLS DESCRIPTION:' get mtdesc picture '@!'
@ 14,6 say 'COST OF PURCHASE: #'
@ 14,25 get mcost picture '999,999,999,999.99'
@ 14,48 say 'DATE OF PURCHASE:' get mdatep
@ 16,6 say 'EQUIPMENT MAKE:' get mrcode picture '@!'
@ 16,34 say 'MODEL NO:' get mcode
@ 16,55 say 'CAPACITY:' get mcapa picture '@!'
clea gets
@ 20,24 say 'TO DELETE TOOLS DETAILS (Y/N):'
do while .t.

```

```

choice = ' '
@ 20,55 get choice picture '!'
read
if choice $ 'YN'
    exit
endif
enddo
if choice = 'Y'
    delete
    pack
endif
enddo
use
clear
return

```

REP.PRG

```

use tools
do while .t.
    clear
    @ 3,3 to 22,76 double
    @ 18,4 to 18,75 double
    @ 4,26 say 'ABUJA MUNICIPAL AREA COUNCIL'
    @ 5,26 to 5,53 double
    @ 7,26 say "TOOLS CANCELLATION FORM"
    @ 6,24 to 8,54
    mtcode = space(7)
    @ 10,6 say 'TOOLS CODE (Press ENTER KEY to Exit):' get mtcode picture
'!!/9999'
    read

```

```

if mrcode = space(7)
    exit
endif
go top
locate for tcode = mrcode
if .not. found()
    @ 21,18 say 'TOOLS CODE DOES NOT EXIST - Press any key ...'
    set console off
    wait
    set console on
    loop
endif
@ 10,6 clear to 10,68
@ 10,6 say 'TOOLS CODE:' get mrcode
mmake = make
mmode = mode
mcapa = capa
mdatep = datep
mcost = cost
mcdesc = cdesc
mtdesc = tdesc
@ 10,35 say 'CATEGORY:' get mcdesc pict '@!'
@ 12,6 say 'TOOLS DESCRIPTION:' get mtdesc picture '@!'
@ 14,6 say 'COST OF PURCHASE: #'
@ 14,25 get mcost picture '999,999,999,999.99'
@ 14,48 say 'DATE OF PURCHASE:' get mdatep
@ 16,6 say 'EQUIPMENT MAKE:' get mmake picture '@!'
@ 16,34 say 'MODEL NO:' get mmode
@ 16,55 say 'CAPACITY:' get mcapa picture '@!'
clea gets
@ 20,24 say 'TO DELETE TOOLS DETAILS (Y/N):'

```

```
do while .t.  
  choice = ' '  
  @ 20,55 get choice picture '!'  
  read  
  if choice $ 'YN'  
    exit  
  endif  
enddo  
if choice = 'Y'  
  delete  
  pack  
endif  
enddo  
use  
clear  
return
```