COMPUTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM FOR DR. ABUBAKAR IMAM LIBRARY MINNA

BY

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PGD/MCS/99/2000/932

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SEPTEMBER 2001

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A PROJECT SUMMITTED TO THE DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A POST GRADUATE DIPLOMA IN COMPUTER SCIENCE.

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APPROVAL PAGE

This project has been read and approved by the undersigned on behalf of the department of mathematics and computer science, federal university of technology, Minna, Niger State as meeting the partial requirements of the award of postgraduate Diploma in the Department of Mathematics and Computer Science, Federal University of Technology Minna.

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DR. YOMI AIYESIMI
(PROJECT SUPERVISOR)

…… DATE……

DR. S. A. REJU
(HEAD OF DEPARTMENT)

…… DATE……

EXTERNAL EXAMINER

CIRCULATION

This project (Computer assisted library services management system for Dr. Abubakar Imam Library, Minna) is compiled in partial fulfillment of the requirement for the award of postgraduate diploma in Computer Science of the Federal University of Technology, Minna.

It is therefore for the specific circulation to the following:

1. Department of Mathematics/Computer Science, Federal University of Technology, Minna, Niger State.
2. The Library

   Federal University of Technology, Minna, Niger State.
3. Members of the Assessment Board.
4. Malungi I.N.

THE AUTHOR

Any attempt for further circulation of this project will definitely require the single or combined authority of the Federal University of Technology, Minna and the Author.

MALUNGI I. N.

DEDICATION

In the name of Almighty Allah this work is dedicated to my wives, children, my late father, M. Hussein Moh'd and mother Hajiya Amina Hussein.

ACKNOWLEDGEMENT

My first and foremost appreciation and gratitude go to the Director of Niger State Library Board, Mall Moh'd B. Ibrahim, who granted me permission to pursue this programme. I also have to extend my hearty appreciation and gratitude to my entire family for their tolerance and patience in bearing the rigour of my absence from them.

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I wish to acknowledge all those whose previous works I have willing made use of in this project.

Finally, I would like to acknowledge any other people who contributed one way or the other to the accomplishment of this project.

Thanks to Almighty Allah

Thanks to you all.

ABSTRACT

Provision of library services since the time immemorial has been on manual basses. But today, due to technological development and information explosion, the use of computers are being employed.

Public library services in Niger State, which started in Bida around 1962, is age old enough to swerve to the use of computers along with academic and libraries.

The project investigated the processes, problems and prospects of computerization and how these problems could be solved.

Data was collected, analysed and transformed into a programming language of Database Management System (DBMS) with special reference to Microsoft Visual FoxPro 6.0.

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CHAPTER ONE

1.0 INTRODUCTION

Provision of library services started in Niger State when the Northern Regional library in Kaduna established its first Branch library at Bida with an estimated stock of 2000 volumes in 1962 to serve Niger province. In 1967, Niger Province was merged with Sokoto province to form North-Western State, thereby inheriting the already existing branch library at Sokoto and Bida. With the creation of Niger State in February 1976, the library in April 1976 moved to Minna with her share of assets of library materials and inherited the Bida branch library. The State library services started operating in Minna in two offices with her Bida branch at Bida. The library started developing and was being tossed from Ministry of Information and Education until 1st Dec. 1991 when it became Board under the supervision of Ministry of Information. It has four branches at Bida, Suleja, Kontogora and Rijau.

In fact, Niger State library Board is an administrative phrase covering public library services to the general public and at post primary schools levels. Library services at the headquarters was named after a renowned scoholar from Kagara, author of a popular Hausa book, "Magana Jarice", Dr. Abubakar Imam. Dr. Abubakar Imam library being accommodated together with the administrative section of Niger State library Board in the State library complex was commissioned by the then Military Governor of the State, Col. Lawan Gwadabe on 31st December 1991.

Niger State was one of the first provinces in the Northern Region to utilize public library services. It is a fact that public libraries anywhere assume a focal point where clientele of diversified age groups, socio-political-economic backgrounds and status; cultural and religious interests converge to utilize all the available resources relevant to their individual or groups needs.

They acquire variety of informative materials in the formats of books, serial publications, slides, phonograph records, tapes, manuscripts, disk and diskettes etc. public libraries play indispensable role in the life of the community. They promote and inculcate reading culture among grown ups, adolescents and children and even the handicapped.

Today, we are in the age of information explosion. The previous main medium of information which used to be in forms of books and serial publications are too voluminous and thus occupy too much space. This makes their retrieval system too cumbersome.

Information materials are no longer in the format as printed materials alone, but also in non-printed forms e.g. tapes, discs and diskettes which require their respective hardware for displaying information contained in them. For this and other purposes, the services of computers are necessary. Textbooks, serials and reference books are now available in non-printed format.

Computers which have now become common everywhere can be described as general-purpose manipulatable electronic and programmable automatic machines that accept data, process them, store them and make them available to their users an instruction. Computers restrictive data to

become information. They are very powerful and versatile in the sense that they process information in many different forms, with text, sound, video and computer generated graphics.

Computers can make use of global network to communicate with other information based systems. This information which computer process form the basis of knowledge itself.

Irrespective of the types and sizes of computers, they have the following devices: -

- Input device (keyboard) – this is where data or instruction is passed to CPU. Another input device is mouse
- CPU (Central Processing Unit) – this is where data/instruction passed to it through keyboard or mouse is processed or refined.
- Memory – this is where information is stored before and after processing. This is part of CPU in the system unit.
- Output device – this is where the processed and stored information are displayed. This device is usually a visual display screen called monitor or printer if the information is needed in hard copy i.e. printed format.

Documents are stored or save on hard discs and diskettes, simply looking at disc will not reveal the contents. The word processing system must be used for this purpose. Read the information on the word processing system to see how information is stored on and retrieved from the disc or diskettes.

Each disc is given a title and is divided into blocks in the same way that a book is titled and divided into pages.

Finding an item on disc is just the same way as finding an item from a book through the index.

The user instructs the word processor to display the index of the chosen disc. If the needed item is on the index of the disk, the user then instructs the computer to load the title (item) e.g. "load sports 2" into the word processor.

The use of computer based systems in libraries and information centers is increasing. Computers are used to assist in variety of functions such as maintaining and providing access to catalogues of the library collections managing the issuing and returning of library materials, acquisition of new library materials, controlling of the serial publications and making it easier and faster the retrieval of information from the data bases relating to the bibliographic data, or even full text of documents etc.

1.1 STATEMENT OF THE PROBLEM

Many technological innovations have the habit affecting the lives of individuals. They have helped the human race to become the superior member of the animal kingdom and so as a result we have attained a comfortable and higher form of existence than other members.

These innovations serve some vital beneficial purposes and apart from benefits many of them have side effects. For example, drugs or injections administered to some patients use to have side effects on the unfortunate ones.

Today, technological advancement has led us to development of computers and their applications in all the services or operations of both private and public organizations and even at your individual home.

It is a habit of some Computerised organizations to lay-off a high percentage of their workforce on the based that most of the work that were being performed by these workers would now be performed by computers.

Retaining these workers would mean double expense on the organization while sacking means swelling the population of the labour market.

Another problem or issue is, what would happen when the computers breakdown after these workers have been sacked?

1.2 OBJECTIVE OF THE STUDY

One of the purposes of this study is to highlight or stress on the need of computerisation of this library Dr. Abubakar Imam Library Minna.

The study also aims at drawing attention of the authorities to the new technological innovations as applicable to public library services.

It is hoped that if the suggestions that will be offered are taken and the library is computerised, it will entice, encourage and improve reading culture of the community there by reducing the rate and degree of illiteracy to a bare minimum.

1.3 SIGNIFICANCE OF THE STUDY

This study is intended to highlight and acquaint the research to the application of computer to public library services in Dr. Abubakar Imam library, Minna.

It is hoped that the study after completion will bring most of the staff and clientele of the library under study to the limelight of computer age. It will also encourage some staff to go for computer training at various levels.

1.4 SCOPES AND LIMITATION

Niger state library Board has five services points – Bida Branch Library, Suleja Branch library, Kontagora Branch library, Rija Branch library and Dr. Abubakar Imam library at the headquarters, Minna.

This study is limited to Dr. Abubakar Imam library services at the headquarters, Minna. This is due to financial constraints on my part.

Success of any research work rests on the degree of cooperation of the respondent with the researcher. It is therefore hoped that there will be maximum co-operation from the respondents.

1.5 RESEARCH METHOD

In my quest for data collection for the purpose of this study, I intend to use the following methodologies:

a). To administer questionnaire on some selected staff of one of the computerized libraries in Minna - FUT

b). To hold interviews with the director of Niger state Library services, Minna.

c). To hold discussions with some selected staff of FUT library (computer unit).

1.6 RESEARCH QUESTIONS

This study is intended to provide answers or solutions to the following issues:

a). Why has this library not been computerised since?

b). Why computerizing library service?

c). What do the staff and users of this library stand to gain from the computerization?

d). What are the likely side – effect of the computerization on staff and users of this library?

e). How will the computerization be carried out?

f). What happens when computers fails to work?

CHAPTER TWO

2.0 LITERATURE REVIEW

In the course of this study, some related publications have been reviewed. Despite the acute dearth of publications an computerization of libraries, I have been able to lay my hand on some that are relevant to computer applications as applicable to library services management.

For the purpose of convenience, the chapter is treated under subtitle as follows:

2.1 WHAT IS COMPUTER

It is a fact that there is no argument regarding the unlimited scope of use of computers in the study of science, technology and all other areas of human endeavour. Thus computers can be described as general purpose electronic and programmable automatic machines that accept data, process it, store it and make the data available (retrieve) to their users on instruction.

In line with the above description, Datatek Computer Consultants in their handout, titled introduction to computer operation, define computer as "an electronic, general purpose problem solving machine which accept data as input, processes the input in accordance to a predefined program so as to give the desired output as information".

2.2 COMPUTER AWARENESS

The awareness of computers can be traced as far back as the period immediately after they were invented and put in circulation.

Discussing on this issue, Gates, J.K. in his book, introduction to librarianship (published in 1976), under the heading of Automation in libraries, describes electronic digital computer as the most versatile and helpful of all the machines, instruments and devices which have been produced to assist in carrying out many of man's important tasks and that the "age of automation" or "age of advanced mechanization" can be dated from the time when the first of these electronic devices was switched on in 1946 at the Army Proving Grounds in Abendeen, Maryland for providing high speed computational assistance in new uses for the continued steadily since that time and today almost all areas of human endeavour are affected by computer either directly or indirectly.

On the application of computer on library system, writes that the use of computer based system in libraries and information unit have become commonplace all over the world. He points out computers are used to assist in variety of functions such as maintaining and providing access to the catalogue items in the collection, managing the issuing and returning of items from the collection, the acquisition of new items from the collection, controlling the serial publications all allowing the retrieval of information from data bases relating to bibliographic data, financial or numeric data or the full text of documents. All these are brought about by the awareness of the computer applications.

Computer awareness has brought about computerisation of many libraries and specially designed home–made application packages for use by Computerised libraries.

In Nigerian library association (NLA) in one of its publication announced that on the 8th day of January, 2001, a new library, "The Z.O. Dibiazue Memorial Libraries " located at 196A, Awolowo Road, Ikoyi, was opened to public. The library is said to have over 10,000 volumes of books as well as tapes and CD ROMs covering most discipline.

The association's publication also reports on digital imaging, which can as well be referred to as scanning, digitization, image capture and digital reforming. All this term are said to mean taking a physical object and essentially making an electronic photograph of it.

An image of physical object is captured and converted to digital format that can be stored electronically and accessed via computer. The physical object could be printed text, e.g. A4 documents, newspapers, books, photographic, manuscripts, microfilms or transparencies etc.

Efforts are on in propagating for the wider use of the specially designed homemade application package for use by Computerised libraries in Nigeria.

Raw Materials Research and Development council (RMDC) in collaboration with a private computer company, BERAM Ltd have embarked on development of X – LIB. Library Automated system in 1996. The system was said to have been demonstrated with wide acceptance at the 1997 annual conference of the association of Government libraries (AGOL) and later at the annual conference of Nigerian Library Association.

To further propagate for it wider acceptability the RMDC in year 2000 commenced a series of workshops on X – LIB across the country.

2.3 STORAGE AND INFORMATRION RETRIEVAL

On information storage and retrieval in a Computerised library system, Tedd says but storing and retrieving computer- based information in libraries and information units mean storing and retrieving bibliographic information on documents which contain the information.

These documents are usually classified and indexed to enable their retrieval. New documents to be added to the collection are equally indexed using the appropriate technique and then input. Documents are retrieved from the collection by formulating a search strategy using appropriate terms and matching these with the descriptions of the documents in the collection to provide a set of retrieved references which are hopefully relevant.

Olanlokun and Salisu discuss information storage and retrieval under database management system. They quoted Molino's definition of database as being "a stock of bibliographical references stored electronically with retrieval mechanisms which ensure easy and effective access". Libraries use computer to analyse information required, index, store and retrieve it as required.

In doing this, files are created and maintained. Arrangement in most database organizations can be sequential or serial link such that each record is directed to its successor.

2.4 WHY COMPUTER

Libraries go computer in order to serve their clientele in the most efficient manner, with speed, consistency and accuracy, among other reason.

On the above issue, Tedd advances the following reasons for libraries adoption of computer - based library system.

1. To improve services to library users by providing access to a library's catalogue on line thereby allowing searches of vast quantities of the published literature to specific fields stored on CD -ROM, and enabling the production of management information.

2. Many librarians have found that they have not been able to recruit more staff and that their work loads have increased, e.g. increase in the number of students using academic libraries or by the services being used by those enforced leisure time more in period of world recession. In order to cope with such situation, many Liberians have decided to use computer system.

3. Libraries may decide to have to have a common system as a result of merging, e.g. the reorganization of local authorities in Britain in 1970s resulted in many public libraries acquiring computer based library systems.

4. Another reason for the computer based library system may be that the task may be completed more quickly, accurately and with increased control than with previous systems (manual). Such tasks are clerical routine and repetitive that is prone to human error.

5. Computers are well known with consistency. Unlike human beings computers do not get bored or tired on repetitive jobs. If computers are to

add or multiply 6,6971 and 5,619 twenty times they will do it effectively and accurately with consistent answers each time.

6. Computers are used for storage, retrieval and transfer of information. They store vast amount of information on such magnetic median like magnetic tapes disks (hard disks and diskettes). Floppy diskettes are also used to transfer information from one computer to another computers do not only store information but equally retrieve information.

7. Computers accuracy, consistency, efficiency in executing instructions is done with a fantastic speed any human effort can imagine.

2.5 PROCESS OF COMPUTERIZATION

Computerization of a library involves a great deal of planning evaluation, selecting and implementation of the new system. Because of the high cost involved, it is necessary to adhere to recognized procedures, such as selecting CD- ROM drives and associated software for networking in the case of large library with many branches. The degree of formality varies from library to library depending on their sizes.

Tedd stated, "before any computer system is installed or used in a library, a formal study should be undertaking to ascertain the feasibility of the new system and to justify to the management the need for the new system. The general terms of reference should be defined and the constraints be they timing, technical, financial staffing or political should be identified."

The first requirement of any library is the information needs of its users and the ideal objective of the new system in comparation with the old system to determine their relationship.

In the course of the feasibility study, some members of the study group may decide to visit libraries with similar systems which the library intend to set up to provide insight to their equipments involved and how its works and also to provide an opportunity for the discussion of the whole system so as to crystallize the ideas.

There is the need for the identification of the manufacturers of suitable hardware, specific library software, turnkey systems or supply of suitable services, in order to gather the idea of the capital and maintenance costs involved.

The breaking down of the format of the report of the feasibility study to be submitted to the management is like this:

- A short general description of the present system;
- Problems of the existing system;
- Possible solutions;
- Outline cost of the possible solution;
- Profits likely to accrue from the system;
- A description of the work required before a solution can be chosen;
- The scale and timing of implementing the new system;
- Implications for the staff, space requirements, institutional policy"

If the costs and benefits of implementing the new system are not justified, then there is the need that a more efficient method of operating the present system may have to emerge and if it is

approved, then an efficient senior staff member should be appointed to coordinate the remaining stages.

A formal feasibility study must satisfy the following criteria:

- Operational feasibility
- Technical feasibility
- Economic feasibility

Operational feasibility has to do with the workability of the processed information system when developed and installed.

The technical feasibility seeks to clarify if the processed project can be done with the current equipment, existing software technology and the available personnel.

Economic feasibility is tested by understanding the assessment of the cost of implementing the projects Vis–a-vis the benefits derived from implementing the project.

It should be noted that one of the reasons for computerisation of library services is to improve user services. A full feasibility study and its compliance based economic advantage cannot be strictly observed in computerization of library services as it is uses in the case of industries or commerce which are completely profit maximinization oriented. Thus the question of economic viability does not play much significant role, but benefits is be derived in terms of improved user services.

2.6 PROBLEMS AND FAILUREE OF COMPUTER BASED LIBRARY SYSTEM

Actually, computer-based libraries face varies problems. Their problems are either from the beginning of the process, the process.
Tedd discusses theses problems under the heading of hardware, software and finance. He begins with the hardware as including failure of suppliers to supply the necessary price and be able to provide a suitable maintenances service.

Furthermore, a hardware specified may prove to be unsuitable to cope with the amount of data to be processed or not to be able to respond fast enough. Users to not like working at an online works station if the computer system takes a significant time to respond to each request.

Under software, he states that the problem might arise if it has not been properly designed, implemented, tested and documented. The packages may also contain more errors than those earlier released.

On financial resources, he says in adequate financial resources for acquiring the necessary hardware, developing software, educating and training staff, planning, designing and implementing the system are all possible problems.

ACCOMMODATION

One other problem is accommodation modern computers are relatively tolerant with regard to environmental requirements. Northeless, some expanses will be involved in setting the computer room. There are: -

a). Air condition: most computers require some form of air conditioning, particularly where disc units are involved.

b). Tiled flooring and ceiling with ceiling fans.

c). Power supply – very often, a special power supply has to be laid on the computer.

ANXILIARY EQUIPMENTS

Other type of equipments such as input preparation units, storage back-ups and output units are needed.

Consumables and staff are other area of significant cost which can be built up. Consumables like disc packs can be particularly expensive. Staff can be build up in the areas of system analyst, programming, operating and the preparation of data towards large central configurations serving a number of users remote from the machines, but linked by data transmission lines.

All these are very expensive which if not fully taken care of can cause serious failure of the project.

Some computer – based library system also fail shortly after being computerised. These are due to certain reasons. Tedd gives the following reasons:

1. When the aims of the system are too vaguely defined and/ or when its final users are not defined.
2. Length and unpredictableness of the decision-making.
3. Lack of proper checks during the development of the project.
4. When the people involved are not properly prepared.
5. Resorting too often and at the wrong times to unsuitable consultants.

6. The new automated system has been decided upon an old manual one which was disorganized and inefficient.

7. User are trained too long before the system is put into use.

CHAPTER THREE

3.0 DATA PRESENTATION AND ANALYSIS.

This research study is aimed at finding out the problems of a computerized library in the process of computerization and how these problems were combated. I also wished to identify the prospect of computerization and how the computerized library changed over from manual to computer system.

Some of the questions or issues that the researcher set out to address in his investigations are:

1. Why computerization library services?
2. What do the library staff and users stand to gain from computerization?
3. Is there any likely side effect of computerization on the staff and users?
4. Should a computerized library completely abandon manual and rely on computer alone?

It is in view of the aims partly stated above that I have decided to collect data using questionnaires, interviews, personal visits and discussions with some selected staff and users.

A set of questionnaire was administered on the staff of FUT library (see appendix A .1) Minna, and interview questions were administered on the executive Director of Niger State library services, Minna.(see appendix A.2)

Discussions were also held with some of the staff of the cataloguing/computer unit of FUT library to shade more light on certain issues not properly covered in the questionnaire.

The choice of FUT library was made because it was the only computerized library around. It is therefore intended to serve as a model for the library under study. Response scores of 50% and above are the right (facts) responses.

DISTRIBUTION OF QUESTIONAIRES

Total No. Of questionnaires distributed	No. Of questionnaires returned	% Of questions returned	No. of questionnaires not returned	% No. of questions not returned
30	26	86.67	4	13.33

30 questionnaires were distributed to the staff of the Computerised library. Out of the 30 questionnaires distributed, 26 or 86.67% were returned, 4 0r 13.33% were not returned.

The high rate of return could be due to constant visit of the investigation of the library and unreserved cooperation of the respondents who know the value of the research work.

The 4 or 13.33% of unreturned questionnaires could be due to the fact that ASUU, to which all the professional librarians are members were on strike.

Questions 1 and 2 are meant to find out the total number of sections and years of service of the respondents respectively. The number of years a person has served in an organization determines the degree or level of his knowledge about that organization.

The response to a question one shows that the library has the following sections:

1. Cataloguing / computer unit
2. Circulation unit
3. Reference unit
4. Serial unit.

Q3. When did your library change to the use of computer?

TABLE II

YEAR OF CHANGE OVER TO COMPUTER

No. of Respondents	1992		1995		1996		1997	
	No.	%	No	%	No	%	No	%
26	24	53.84	-	-	-	-	12	46.15

This question was armed at finding the year the library started entering bibliographic records (cataloguing) of the library materials into computer.

The response in table II above indicates 14 or 53.84% of the total respondents gave 1992 while 12 or 46.15% gave 1997.

The responses to this question output have been unanimous. Lack of unanimousness could be done to the fact that the project took various stages.

Further equerries showed that the library started entering its materials into computer in 1992 while, the commissioning of the computerization took place in 1997. This could be the reason why 1997 scored 46.15%

Q4. HOW DO YOU CHANGE OVER?

TABLE III

CHANGE OVER METHOD

No. of Respondents	Parallel Running		Direct change over	
	No.	Percentage (%)	No.	Percentage (%)
26	24	92.30	2	7.70

This question is meant to find out whether the library uses both computer and manual systems in entering bibliographic records and other library services of its library materials or relying only on computer.

The response in the table III shows that 24 or 92.30% of the total respondents gave parallel running as change over method while 2 or 7.70% of the total respondents gave direct change over. Some of the reasons that might have motivated the library to use parallel running against direct change over may include: -

a). Parallel running gives enough room to study the system and compare them – old and new methods.

b). It does not leave the users in suspense when the new system fails or there is power failure or computer virus.

The reason for the 2 or 7.69% for direct change – over might be that the respondents were not very familiar with computer system

Q5. WHY DID YOUR LIBRARY GO COMPUTER?

This question required the respondents to give some of the likely reason why the library went computer. The number of reasons enumerated by various respondents are as follow :-

A - To facilitate effective library services

B - To facilitate accurate records

C - For quick retrieval of information

D – For consistency and efficiency.

TABLE IV

REASONS FOR COMPUTERIZATION

No. of Respondents	A		B		C		D	
	No.	%	No	%	No	%	No	%
26	26	100	20	76.92	15	57.69	14	53.84

This question is to enable the investigator generalize why libraries computer their services.

As shown by table IV above, 26 or 100% of the total respondents have unanimously indicated that libraries computerize their services so as to be able to serve their users effectively. Here, all the activities that can be performed in the library through computer are lumped in side library services.

Facilitating of accurate records recorded 20 or 76.92% of the total respondents. Quick retrieval of information and, consistency and efficiency recorded 15 or 57.59% of the total respondents. Quick retrieval of

information and, consistency and efficiency recorded 15 or 57.69% and 14 or 53.84%respectively. These could not record unanimous response of 100% because points might have been regarded as being part of the effective library service offered by computer.

Q6. Do you know where the computer sets were purchased? Yes / No.

Q7. If Yes, where?

These two questions above sought to known the company from where the computers were purchased.

The response by the respondents are as follows :-

A – BUSICON LAGOS

B – NO IDEA

TABLE V

COMPUTER SUPPLIER

No. of Respondents	A		B	
	No.	%	No	%
26	24	92.30	2	7.69

24 or 92.30% of the total respondent supplied Busicon Company in Lagos as the supplier of the computers while 2 or 7.69% stated that they had no idea of the supplier. While 92.30% of the total respondents were curious to know the supplier, 7.69% of the total respondents were not interested in the affairs of the whole thing.

Q8. What are the names of the brand of your computers?

The responses are as follow :-

A – ICL

B – Royal

C – Pentium II

TABLE VI

BRAND OF COMPUTERS IN USE

No. of Respondents	A		B		C	
	No.	%	No	%	No	%
26	26	100	26	100	26	100

As shown in the table VI above, the respondents unanimously gave the brand of computers being used in the library as ICL, royal and Pentium II. This unanimous response of 100% was as a result of the respondents curiosity, to know the facts and facts are always the same anywhere.

Q10. How many computers do you have in each of the services points and others?

Service points and others with No of computers: -

A - Cataloguing / computer unit – 3

B - Reference Unit – NIL

C - Serial 1

D - Circulation 1

E - Charging and Discharging counter - 1

F - Librarian's Office - 1

TABLE VII

NO OF COMPUTERS IN EACH SERVICE POINT / SECTION

No. of Respondents	A		B		C		D		E		F	
	No.	%	No	%	No	%	No	%	No	%	No	%
26	26	100	26	100	26	100	26	100	26	100	26	100

As indicated in table vii above, the number of respondents to each of the service points / sections is 100%. This is because the number of computers in each of these sections are facts and visible and therefore cannot be opinion which has the possibility of variations from individual to individual.

Q 15. What library automation system do you use? E.g. X – Lib, CD / ISIS, TIN LIB etc

Questions 14 and 15 seek to know the type of library software being used by the library.

TABLE VIII

LIBRARY AUTOMATION SOFTWARE IN USE

No. of Respondents	X - LIB		CD / ISIS		TIN LIB	
	No.	%	No	%	No	%
26	-	-	-	-	26	100

The requirements in the both questions 14 and 15 are the same. The response as indicated in table VIII above shows that the library adapts TIN LIB automation software. The response was 100% because the software is known to all the respondents.

Q16. How did you obtain software application packages?

Although this question is an open question giving the respondents change of stating ranges of answers, they unanimously stated that the library obtained software application packages through "LOCAL PURCHASE". This could be so because it might be relatively chapter.

Q17. Have your computers ever developed any problems? Yes/ No

Q18. If yes, what method did you adapt?

A - manual

B - waited until the computers were repaired.

What was required of the respondents in questions 17 and 18 is yes or No and if Yes, they should indicate whether for the period that the computers were off, the library continued serving its patrons by using manual system or the library folded its arms until when the computers were repaired.

TABLE IX

METHOD OF LIB. SERVICES WHEN COMPUTERS FAILED

No. of Respondents	A		B	
	No.	%	No	%
26	26	96.15	1	3.85

25 or 95.15 % of the total respondents indicated that the library resorted to "manual system" of service when the computer failed to work, and 1 or 3.8 % responded that the library waited until when computers were repaired. This last response could be as a result of the respondents being as a result of the respondent's ignorant of what was expected of him. The

users should not be held at ransomed simply because the computers have failed to work. The library has to device a means of serving its patrons which 96.15 5 of the respondents have indicated.

Q19. How did you bring the computers back to work?

Here, the respondents were given chance to state the methods by themselves. The following responses were supplied: -

A - We invited the Vendor/ supplier of the computers.

B - Computers lying wasted and unrepaired

TABLE X

METHOD OF RESTORING FAILED COMPUTERS BACK TO WORK

No. of Respondents	A		B	
	No.	%	No	%
26	24	92.30	2	7.70

24 or 92.30 % of the total respondents indicated that when computers failed to work, the library called on the supplier of the computers to came and repair or up -grade the computers as the case might be. 2 or 7.70% of the total respondents could be those who never cared to familiarize themselves with the system so as to be able to know the affairs of things

Q20. How do your patrons obtain information from the computers i.e. do they operate computers by themselves or you do it for them?

This question aims at finding out the level of the patron's accessibility to the computers. The responses given are: -

A – We do it for them

B – They operate the computer by themselves

C – Both A and B

TABLE XI

LEVEL OF PATRONS' OPERATION OF COMPUTERS

No. of Respondents	A		B		C	
	No.	%	No	%	No	%
26	-	-	-	-	26	100

100% response have indicated that some patron are assisted while some do operate by some do operate by themselves. After teaching computers they are later allowed to do it by themselves. But yet, some of them still have to be assisted at all times.

Q21. What problems did you come across in the process of computerization?

This question gave the respondents opportunity of listing the problems encountered in the process of computerisation.

The following problems were listed: -

A – Should the library start with re-cataloguing the old books of start afresh together with the new books?

B – Limited number of computer literate staff

C – Erratic power failure

TABLE XII

PROBLEM IN THE PROCESS OF COMPUTERIZATION

No. of Respondents	A		B		C	
	No.	%	No	%	No	%
26	26	100	26	100	26	100

Each of the problems A – C as shown above recorded 100% response. There cold be some other problems but these might be too mentioned.

Q22. How did you overcome these problems?

Here, the respondents were expected to list some remedies to the problems stated in question number 21

The remedies supplied were: -

A – Start fresh cataloguing.

B – On the job training and sending of some staff outside the library for training

C - Provision of stand- by generator

TABLE XIII

REMEDIES TO PROBLEMS IN TABLE XII

No. of Respondents	A		B		C	
	No.	%	No	%	No	%
26	26	100	26	100	26	100

Each of the remedies in table XIII above recorded 100% response of the total respondents. These remedies were as a result of response to question 21 and presented in table XII.

Q23. Please compare the manual you were using before and the computer you are using now.

The response to this question above can be summed as follows: -

A – Computer is faster

B – Computer is more accurate, efficient and consistent

C – Information is safer with computer

COMPARISM OF COMPUTER WITH MANUAL

No. of Respondents	A		B		C	
	No.	%	No	%	No	%
26	26	100	26	100	26	100

The response presented instable XIV above is the comparism of computer with manual system of library services. The responses A – C are the advantages of computer over manual while reverses of these responses in table XIV directly apply to question number 24. Thus question number 24 is treated again.

Each of the responses in table XIV recorded 100% response. This unanimous response could be due to the fact that all the respondent have been working, with these computers for some time now and were therefore conversant with their prospective and problems.

Discussion were made with the staff who work directly with the computers in the cataloguing / computer unit for further clarification. Bellow is the abstract of the discussion made.

National University Commission (NUC) gave FUT library one computer called ICL in 1992, and this motivated the library to go computer. The lady typist in the library who was put in–charge of the computer started computer training privately. She was later sent for training officially.

The library started entering records of library materials using local software designed by a lady staff of the University computer centre. In 1997, NUC directed that all the University libraries should revert to the use of TIN LIB library automation system. The library tried to convert to TIN LIB. The conversion was not possible and the library had to start fresh cataloguing from the beginning.

For this, FUT bought six Pentium II computers for the Library, and the university computer centre gave the library one Royal computer. Thus computerization of FUT library was commissioned in 1997.

The TIN LIB system stopped functioning in early February 2000 as a result of millennium bug (Y2K) and have not been working since then.
Firn Link Company was invited to come and update the software. It came and did the job, but half hazardly. The company itself is now said to be in disarray.

All what the computers needed now is up dating, except the Royal and ICL that broke down.

Cataloguing/computer unit has three computers. One of the three is called server while the remaining two are called data entry.

There are two computers in circulation section. One is used for charging and discharging while the other one called OPAC is used by the patrons to have access to the library materials stored in the server.

There is one computer in the serial section. Most of the serial publications are catalogued here.

There is another computer in the librarian's office. The librarian uses this computer to have access to both materials and administration at the same time.

The library uses Local Area Network (LAN). It is adaption of this that enables patrons to have access to information from the server through other computers. Somebody using computer for data entry can instruct another person using OPAC to wait for some time by issuing out a command.

As stated earlier in the preamble to this chapter, interview was held with the director of Niger state library Board, Minna.

I wish to state here that information collected from the Director on question number one has already been treated in the introduction to this project.

Responding to question numbers two and three on whether he had any intention of computerizing his library and where he expected to get find fund the project; he said yes, and that he was expecting donations from voluntary organizations, especially Book Aid International (BAI) that has been donating books and also promised to donate computers. He said government would also not hesitate to assist.

On why his library has not been computerized since, he said the resource to do it were not there. There was no money to buy computers backed with lack of personnel who would man the computers.

On why he wanted his library to go computer now, he said he has been motivated by the fact that knowledge was increasing astronomically, thus we are in the age of information explosion. Knowledge was no more recorded in books alone, but also in tapes, filmstrips, disc and diskettes which needed the services of their respective hardware. He therefore needed computers for effective library services in areas such as information retrieval, charging and discharging of books, accuracy and consistence of record keeping etc.

On the acquisition of bolt hardware and software, he said that he would appeal to both voluntary organizations and Government for assistance.

On the number of computers he would like to acquire for the first time at least two (2).

On the level of computer literacy of his staff, he said there was one of his senior staff on PGD computer course at F.U.T, Minna. He added that there were some other staff who showed icon interest and love for computers.

Responding to maintenance, he said he would solicit for financial assistance from the government.

On the benefit of computerized library services to both staff and clienteles, the director said the effort would first of all exposes both of them

to the electronic technological advancements with its diverse capabilities in library services and other areas.

On the side effect of computerized library services on his staff, he said he even needed more categories of staff right now, and even after computerization, he would supervise to oversee the activities of the readers to guard against theft and mutilation. Again, the manual bibliographic record keeping would continue to go along with that of computers so that any problems with computers would not paralysis the library services.

On whether he had any other things to add apart from what he had said so far, he said one was not always certain about the electric power supply. This means that one would need a stand-by generator machine. Another thing was the computer virus which used to be problem same to same already to be computerized systems.

3.1 SOFTWARE DEVELOPMENT

Generally, software is used to describe all forms of program that control the activities of computers, procedures and associated documentation. Thus it enables us to exploit the capabilities of a computer.

There are two basic types of software: System software and application software.

System software are programs supplied by computer manufacturers, designed to control the operation of the computer system. They are meant to assist users in the use of the computer system e.g. controlling of the operations required to move data into and out of a computer. Examples of system software are operating system, translators and editors.

Application software is a general program usually written by the users or programmer for specific application or local use. Examples of application software are application packages and local or home made packages.

Application packages are a collection of fully documented programs designed to perform a particular data processing task in more than one organizations or institutions. It is made up of pre-written and tested programs that are designed by experts to perform one or more specific purposes. Examples of these packages include- word processing, spreadsheet, X-lib, Tin Lib e.t.c.

Home made packages are programs written to solve local problems within a particular organization. Such programs are designed to suit the organizations.

X-Lib and Tin Lib are specifically designed for Library automation. They have acquisition module, cataloguing module, circulation and serial modules, modules or queries/enquiries.

3.2. THE PROGRAMMING LANGUAGE.

From the previous analysis, it is important to say that the proposed system is going to be used to store large number of data/information and time-to-time retrieval of record. Due to this fact, the choice of the programming language chosen for the development of the system is database Management System (DBMS) package with special preference to Visual FoxPro.

FEATURES OF THE PRAGRAMMING LANGUAGE.

The choice of Visual FoxPro arose because of the following reasons and features posed by the application software.

1) It is easy to write an interactive user interface program and also simple to understand,
2) It is users friendly,
3) It reduces data redundancy,
4) Data integrity can be maintained,
5) Provides easy and greater access to information,
6) Individual database file can be designed to meet specification requirement of a particular functional unit of an organization,
7) The Visual FoxPro allows the source program to be compiled to an executable file, thereby allowing the program to be run independent of the application software that was used in coding the program for example, Visual FoxPro,
8) It has quality graphical users interface,
9) It is easy to maintain and to debug; it has debugging tools.

3.3 ELEMENTS OF DESIGN

Design of input

The following input design should be considered:

a. Data to input

b. Medium to use

c. How the data should be arranged or coded.

d. The dialogue to guide the users in proving input

e. Data items and transaction needing validation to detect errors.

f. Methods for performing input validation and steps to follow when errors occur.

The design decision for handling input specifies how data are accepted for computer processing. The design of input also includes specifying the means by which end-users and system operators direct the system on which action to take.

The system is designed to be on-line which include a dialogue between the users and the system. Through the dialogue the users request system services and tell the system when to perform a certain function.

The arrangement of messages and comments as well as the placement of data headings and titles on display screen or source documents which is equally part of input design should be considered. The system should be user friendly.

3.4 DESIGN OF OUTPUT

This is the display of the results of the data displayed as information for the consumption by the users or in printed format. (See appendix B).

In the library system, the displayed information indicates the availability or otherwise of the materials, and if available, it directs the users to where they can be obtained in the shelves.

For many end-users, output is the main reason for developing the system and the basis on which they will evaluate the usefulness of the application.

(See appendix C) Most end-users will not in anyway operate the information system or either will use the output from the system.

3.5 DESIGN OF CONTROL.

Human beings are not one hundred percent perfect at all times. Some minor or serious mistakes are therefore likely to be made in entering data or requesting for performance of certain functions.

In any case of mistakes, the services of delete key, undo and redo etc menus are employed.

3.6 COST AND BENEFITS

DEVELOPMENT COST

Buying of computers for the library services management system can be costly even at the developmental level. The cost of five computers to be installed at various workstations can be estimated at #90,000.00 each and server at #100,000.00 while two-laser jet printers will cost at #5,000.00 per computer.

#50,000.00 can be allocated to staff training, #15,000.00 for software and #10,000.00 for miscellaneous expenses, thus totaling #725,000.00.

OPERATING COST

The operating cost in terms of consumables, maintenance, utilities etc can be estimated at #260,000.00.

LAN:

For effective control and integrated operation so as to enable more overall effective services, the systems should be connected with Local Area Network (LAN). The network materials such as hub at least (10 ports), cat 5 cables, RJ45 plug e.t.c. Can be estimated at #50,000.00.

Hence, development, operating and Local Area Network costs will amount to #1,035,000.00.

BENEFITS

There are distinct benefits to the system. The library will be serving its clientele faster and gain better speed.

Installation of new controls and improved procedures along with the new system will reduce errors and unnecessary delays. The Local Area Networking will enable integrated services. I.e. intercommunication among all the computers at the workstations.

More clientele will be attracted to the library. More members coming in mean more recognition by the general public and the government.

Despite the fact that it will not be possible to value the benefit that the new system will produce in Naira value, they will at the long run be noticeable and classified as intelligible.

The new system will have an anticipated life span of four to five years and in the later years, the cost of using and maintenance will increase.

3.7 INSTALLATION STEPS

This is the process of transferring the developed software from the floppy disk to a permanent storage device called the hard disk. Developed software from the floppy disk to a permanent storage device called the Hard disk.

However, due to vast improvement in recent operating systems, the installation of the software is a very simple operation.

The procedure as follows:

STEPS	PROCEDURE	RESULT
1. Go to start	Click	Start popup menu is displayed.
2. Run submenu	Click	Run dialog box displayed.
3. Insert LIBRARY SOFTWARE diskette into A:\	-	-
4. Type the source drive (A:\)	Browse	Content of A:\ displayed.
5. Select set-up	Double – click	Installation begins.
6. Follow the instruction that follows.	Click	Installation in progress.
7. Destination.	-	Software installed C:\ successfully.

BRINGING THE SOFTWARE FROM C:\ TO WINDOW PROGRAM SUBMENU

STEPS	PROCEDURE	RESULT
1. Go to start	Click	Start popup menu displayed
2.Setting submenu	Click	-
3. Choose taskbar and	Click	Taskbar dialog box

start menu		displayed
4. Select start menu program	Click	-
5. Browse to select LIBRARY software	Double click	-
6. Select folder (program)	Click	
7. Destination	Click	LIBRARY software copied into program submenu.

CHAPTER FOUR

4.0 SYSTEM DESIGN

Having gone through some related publications on Computerised library service, interviews and discussion with the Director of Niger State library services, administration of questionnaire and discussions with some selected staff of Computerised library services (FUT, Minna), I was able to understand some necessary information on the process of computerization of library services system.

Some of the features that the new system should have such as cataloguing system, acquisition system, processing control etc. were identified.

The design process begins with the identification of information that would be required by the user of the system as output. This also describes the data to input or store.

4.1 CATALOGUING SYSTEM

Cataloguing is the process of bibliographic description of library materials. When developing computer - based cataloguing system, the following points should be considered:

I. The aims and likely use by library staff and users should be analyzed so that it can be decided what data elements or fields should be included in the bibliographic records,

II. There should be regularly produced back - up of the catalogue cards or computer printed book form so that users have something to

consult if the OPAC for one or the other is unavailable (OPAC is used to substitute catalogue cards, comfishe, comfilm or computer printed book form).

III. There could also be OPAC on CD ROM to introduce a user - friendly, powerful and fast search facility.

4.2 ACQUISITION SYSTEM

Purchasing materials for library's collection accounts for a large percentage of any library budgets. With the computer - based acquisitions systems, there are variety of options with the bibliographic networks, library suppliers, library management providers etc. all offering products to assist with the process of acquisitions.

Basic function of acquisitions system include - selection of items or receiving recommendations of items to be purchased and establishing that those items are not already on order; preparing order – forms or notes to be sent to book dealers; maintaining details of items on order or in process; generating claims to be sent to book dealers for items not received; maintaining the accounts, accessioning the items on arrival and keeping statistics.

A file of suppliers with their full particulars are maintained and a code linking to that file is entered at the time of the order so that it is not necessary to input full supplier details with each order.

4.3 CIRCULATION SYSTEM

One of the basic features of computer based charging or circulation system is the recording of details about the items on loan and to when it is loaned.

There are often links between all the modules in the computer - based library services management systems e.g. between OPAC and circulation system, acquisition and serial system etc.

The method of processing circulation data over the year has been changed from batch system to hybrid system which is a mixture of batch and on-line. This system ensure that as soon as an item is issued or returned, the relevant file is immediately up dated so that if accessed via the OPAC, the appropriate information is given. However, some kind of back-up system may be necessary so that when either the telecommunications linking one services station to the other fails, the back up will be resorted to, so that an off - line mode of data concerning issues and returns can be processed later.

In the circulation module, the following criteria should be defined

a). Number of items particular categories of borrowers can have out at a time

b). The various loan periods for different borrowers.

In issuing out books, details of the books and the borrowers need to be recorded. This is achieved by allocating a unique number to both books and borrowers. The types of numbers to be used include: - accession number, ISBN and copy number and random number.

In returning, only the book number needs to be recorded and the circulation module calculates the amount to be paid as fine when the book is overdue. Provisions are also made in the circulation module for renewals, reservations, enquiries etc.

4.4 SERIAL CONTROL

The basic requirement of a serial module include: -

i. Selecting suitable titles for purchase,
ii. Generating purchase order
iii. Receiving the issues and claiming for issues not received
iv. Keeping current and accurate details of serials holdings,
v. Allowing access (possibly via OPAC) to details of current holdings,
vi. Organizing for completed volumes to be bound.

4.5 IMPLEMENTATION

This is part of all the activities that take place to convert from the old system to the new one. The new system may be completely new replacing the existing manual system or a major modification to an existing system. Whichever be the case, proper implementation is necessary to provide a reliable system to meet the organizational requirement.

There are three aspects of implementation training of personnel, conversion procedures and the post implementation review.

4.6 TRAINING OF PERSONNEL.

Quality of training received by the personnel involved with the system in various capacities determines the success or failure of any designed system. Those who will be associated with the system should know in details what their roles will be and how they can use the system. They should know the capability of the system.

System operators must ensure that they can effectively handle all the possible operations of both routine and extraordinary. Training of operators should include such fundamentals as how to turn the equipment's, installation of new equipments such as a new computer system, special terminals or different data entry equipment.

They should have the knowledge of what constitute normal operations and use, and be familiar with actions they need to take such as mounting of magnetic disks or tapes, copying files, changing disk drives etc.

4.7 CONVERSION

This is the process of changing from the old system to the new system. There are four methods of handling a system's conversion - parallel system, direct cutover, pilot system and phase - in method. Each of this method should be considered in the light of opportunities that it offers and problems that it may cause. However, certain situations dictates the use of one method over the others, even though other method may be more beneficial. In normal circumstances, system conversion should be accomplished as quickly as possible because long conversion periods increase the possible frustration and difficulty of the task for all person involved.

PARALLEL RUNNING

This is the processing of current data by both the old and new system to crosscheck the result. This system keep the old system alive and co-operational until the new system has been proved for at least on system cycle, using full live data in real co-operational environment of place, people, equipment and time. This allows the results of the new system to be compared with the old system before acceptance by the user, thus promoting user confidence.

This system has the set back of extra cost of running two methods at the same time.

DIRECT CUTOVER

This is the complete replacement of the old system by the new system at a sweep. This system is essentially the least expensive, but very risky. For the purpose of security, the old system may hold in abeyance to safeguard the event of major failure of the new system so that the organisation may revert to the old system.

PILOT RUNNING

This system is similar to parallel running in concept. Data from one or more previous periods for the whole or part of the system is run on the new system after results have been obtained from the old system and the new results are compared with the new system.

STAGED CHANGE OVER OR PHASE - IN METHOD

Here, the new method is introduced piece by piece. A complete part or logical section is committed to the new system while the remaining parts

or sections are processed by the old system. It is only when the selected part is operating satisfactorily that the remainder is transferred.

This method reduces the risk involved in direct changeover of the whole system and enables the users to learn from mistakes made as the changeover progresses.

This method has set back of creating problems of controlling the selected parts of the old and new system and also tends to prolong the implementation period.

4.8 POST IMPLEMENTATION REVIEW

After the implementation and conversion are completed, a review of the system is usually conducted by users and analysts to determine how well the system is working and whether adjustments are needed or not.

The review also enables the gathering of information for the maintenance of the system. No system is ever complete because it should be maintained, as changes are required due to internal developments such as users or other activities and external developments such as new legal requirements etc.

The review provides the first source of information for maintenance requirements and the system's output quality deserves special attention.

4.9 MAINTENANCE

Maintenance involves the making of changes and adjustments of the system. Some of the most frequent changes requested by information requirements may be revised as a result of system usage or changing operational needs. At times, oversights that occurred during the

Federal university of Technology

Dept. of Maths / computer Science

Minna.

2nd March, 2001.

Sir,

QUESTIONAIRE FOR COMPUTERISED INSTITUION (F.U.T. LIBRARY).

In the partial fulfillment for the award of post Graduate Diploma in computer science of the Federal University of Technology, Minna, I designed this questionnaire to gather information concerning – "Computer Assisted Library Services Management System" for Dr. Abubarkar Imam Library, Minna, so that we can find solution to problems where there are likely to be any.

I would therefore like you to please supply me with the required information by filling in this questionnaire. Any information you supply will be treated in confidential and will be restricted to the purpose of this study.

1. Unit /sectrian ……
2. For how long have you been working in this library?……
3. When did your library change over to the use of computer? ……
4. How did you change over (P/S tick one expect otherwise).
    a. We were running both manual and computer before finally settling on computer
    b. We just change from manual to computer immediately
5. Why did your library go computer? ……
6. Do you know where the computer sets were purchase? Yes / No
7. If yes, where? ……

APPENDIX A. 1

developmental process need to be corrected. Sometimes, the need will arise to capture additional data for storage in database.

4.10 PROGRAMMING

See appendix D for the programe source code.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION & SUGGESTIONS

5.1 SUMMARY

The historical perspective of public library services in the state shows that computerization of public library services management has long been overdue. Public library started in the state as far back as 1962 when a branch library was opened in Bida. The services have been a manual basis till today.

One of the main objectives of this study was to stress the need of computerization of the public library services management at least in the state capital. Related published materials and some selected topics were reviewed to introduced application of computers in library services.

Interview questions were administered and the director of the library under study and discussions were made with the staff and staff and readers of the library, in addition to personal observation to find out the level of interest of the level of interest of the organization to computerize its services.

Questionnaire was also administered on one of the already computerized library services (FUT), Minna. This was meant to serve as a model for the library under study.

5.2 CONCLUSION

Interview response from the management of library under study indicated that even though the management was not financially sound, it was very much interested and hoped to computerize its services. It was expecting donations from voluntary agencies and government both in kind

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d. The library should get a computer for each of the service points or units of the library, and one in the Director's office for both professional and administrative control.

e. Two of the commonest library software is TIN-LIB and the latest one is X-LIB. The library should therefore choose one of these two.

f. Integration of computers at all the service points and Director's office can be achieved with the installation of LAN (Local Area Network)

g. The management should provide a stand-by generator to remedy any NEPA disappointment.

and financially. The library has not been able to go computer since due to lack of finance; and the management has not been motivated as a result of this present age of information explosion and the desire of the library to offer faster and more effective services to its users.

The FUT library which was used to serve as a model to the library understudy started computer is a 1992 and was commissioned in 1997. Tables three and four show that the library used parallel running system of changeover and computerize its services to facilitate effective services respectively.

Table seven shows that each of the services points has a computer, except reference section and there was one computer in the library office for effective control and administrative services.

Further explanation show that there was a server for the integration of the other computer of each service points connected with local Area Network.

Table eight shows that the library used TIN library software by 100% response while 96.15% response-table nine indicated that the library resorted to manual services whenever the computers failed to work.

Table ten shows that suppliers of the computers are called upon whenever the computers failed to work and 100% response in table eleven indicates that library users are taught how to use the computers and later left alone after they were through.

The problems faced during the computerization process were where to start, lack of computer literates and erratic power failure as shown on table twelve. These problems were overcome by fresh cataloguing of all the

library materials, on the job training of the staff and provision of stand by generator, as indicated in table thirteen.

SUGGESTIONS

Questionnaires administered on the staff of a computerized library systems and discussions made with them in addition interview held with the Director of the library under study have opened opportunities for offering some suggestions. It is hoped that these suggestions would be of benefit to the management, staff and users if the library.

a. All the library staff should be trained so as to be computer literates in order for them to be able to handle these computers and lead users through.

b. The management should provide adequate security for the equipments against such things like: -

- Fire
- Natural disaster
- Environmental problems
- Sabotage.

c. Anybody taking charge of the data processing department should provide adequate security for the files to avoid loss of data. Such securities are: -

- Back-up copies of files
- Authorized password for users.
- Scope and limits of access.
- Installation security.

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8. What is the name of the brand of your computers? .....

9. How many services points do you have in your computer? .....

10. How many computers do you have in each of the services point and other? (Please indicate below).

a. Circulation .....

b. Reference .....

c. Serial .....

d. Documentation .....

e. Cat. And Classification .....

f. Librarian's office

g. Charging & discharging counter .....

h. Others.....

11. Did you receive any computer training before your library was computerized?

Yes / No

12. How did you come to known how to operate on your computer.....

.....

13. What is the level of your computer literacy? (pls. tick as appropriate)

a. On the hob training

b. Certificate in computer

c. Diploma in computer

d. PGD in computer

e. BSC in computer

14. Please, list the sort ware (application packages) being used by year computers.....

15. What library automation system do you use? E.g. x – Lib, CD / ISIS, TIN LIB, e.t.c……

16. How did you obtain software application packages……

17. Have your computer s ever developed any problems? Yes / No

18. If yes, what method you adapt?

    a. Manual

    b. Waited until the computers were repaired

19. How did you bring back the computers to work? ……

20. How do your patrons obtain information from the computers i.e. do they operate computers by themselves or you do it for them? ……

21. What problems did you come across in the process of computerizing?

    ……

22. How did you overcome these problems?

23. Please compare the manual you were using before and the computer you are using now? ……

24. It is a fact every advantage has its own disadvantages of computerization

……

25. Please, provide any other information that you think is necessary and I forgot to ask you ……

APPENDIX A. 2

Federal university of Technology

Dept. of Maths / computer Science

Minna.

2nd March, 2001.

Sir,

SAMPLE OF INTRODUCTORY LETTER TO THEDIRECTOR, NIGER STATE LIBRARY SERVICES MINNA.

I am a PGD computer student-working project as a partial fulfillment for the requirement of Post Graduate Diploma of Federal University of Technology, Minna.

The project is on – "Computer Assisted Library Services Management System for Dr. Abubarkar Imam Library, Minna".

I shall be very grateful for your cooperation and response to my interview questions which need background information on the above subject.

I would therefore like to know when it will be most convenient to you to give me audience on this topic.

Your cooperation and response will be highly treated in confidential.

Yours Faithfully,

.....

ISAH N. MALUNGI

Federal university of Technology

Dept. of Maths/Computer Science

Minna.

2nd March 2001.

Sir,

"SCHEDULE OF INTERVIEW WITH THE EXECUTIVE DIRECTOR NIGER STATE LIBRARY SERVICES MANAGEMENT SYSTEM FOR DR.ABUBAKAR IMAM LIBRARY, MINNA"

Please sir, could I have a brief genesis of your library?

Do you have any intension of going computer?

Where do you expect to get fun i.e. is it going to be from internally generated revenue or direct from government?

Why have do you not been able to go computer since?

Why which to go to computer?

How do you hope to acquire both hardware and software [computers and their application packages]?

About how many computers would you like to acquire for the first time?

Do you have qualified or computer literates to man the computers when acquire and installed?

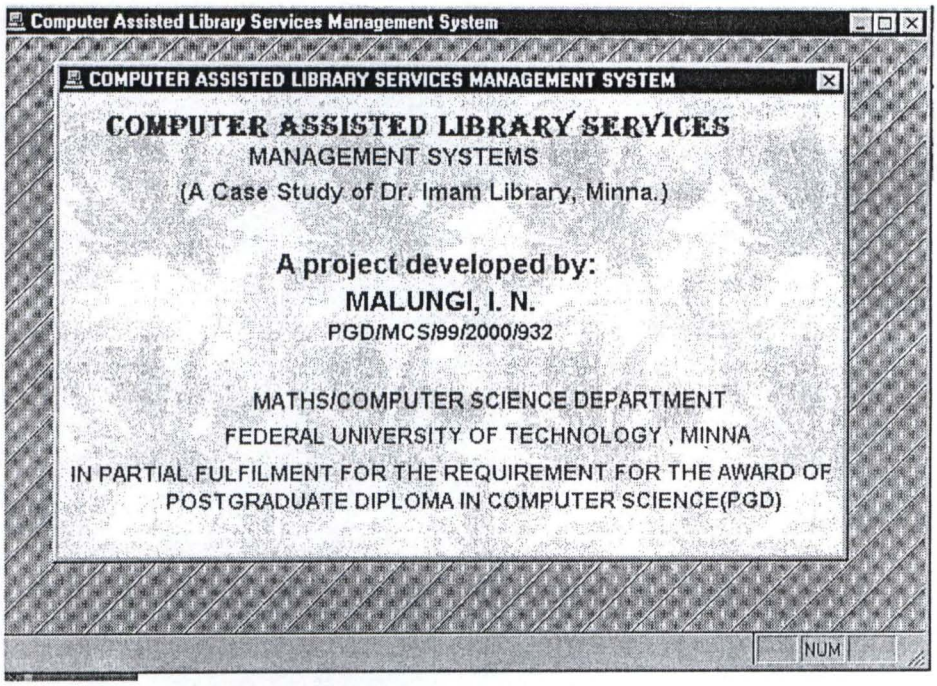
How would you maintain them?

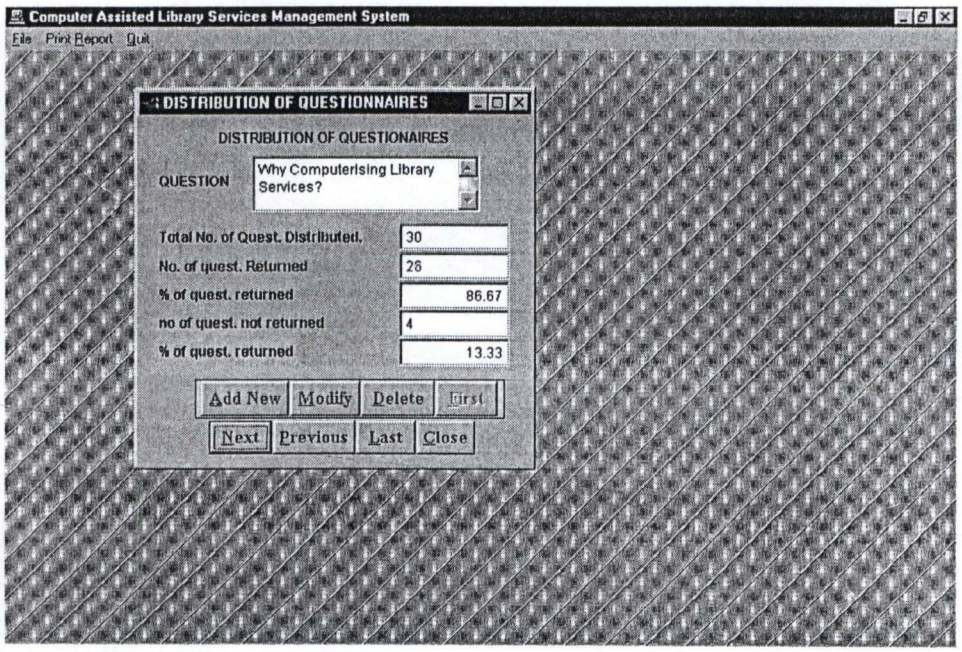
Of what benefit will this gigantic effort be to both your staff and clientele?

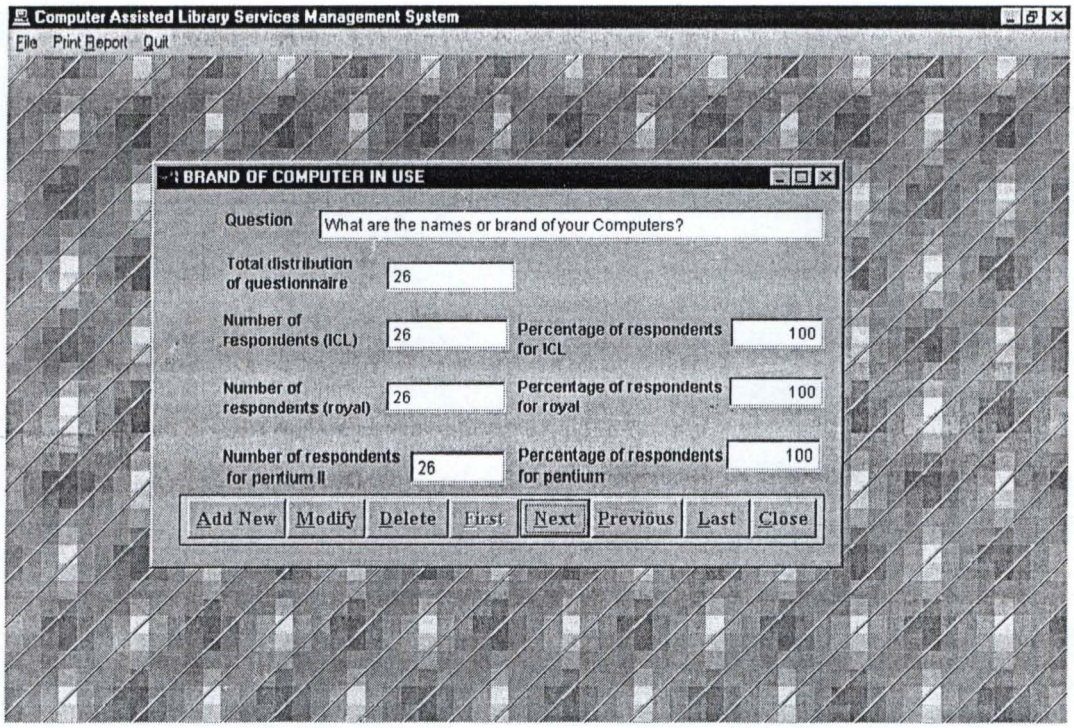
Will there be no any side effect on the workforce of your staff?

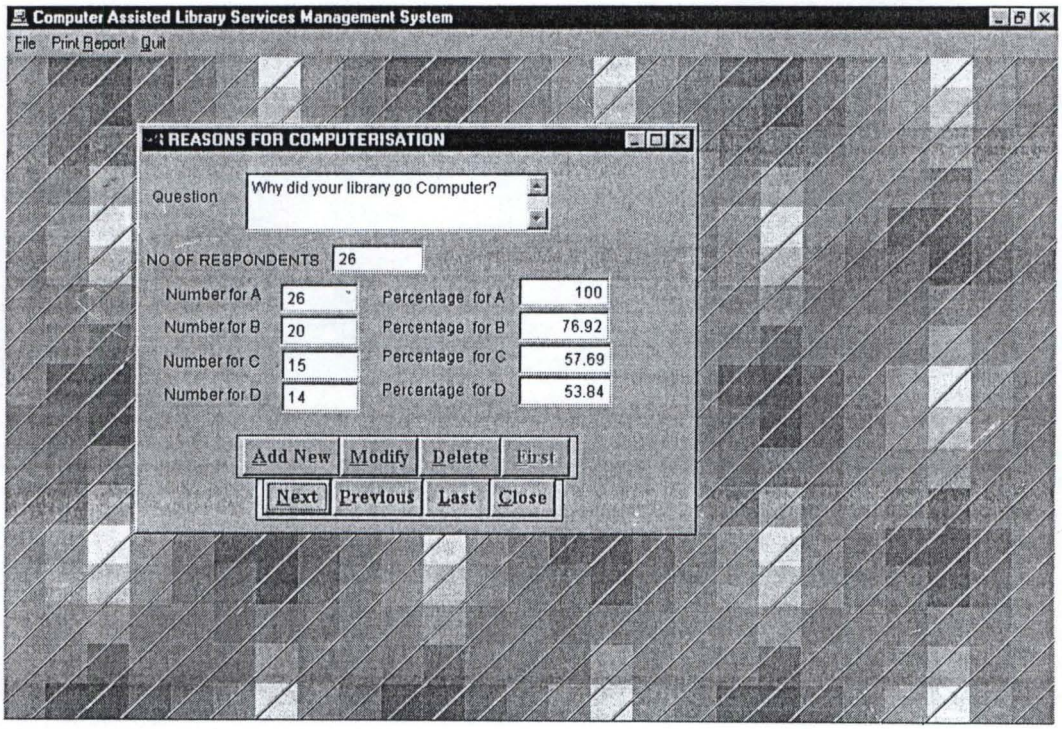
Please sir, do you have any other things to add apart from what you have said so far?

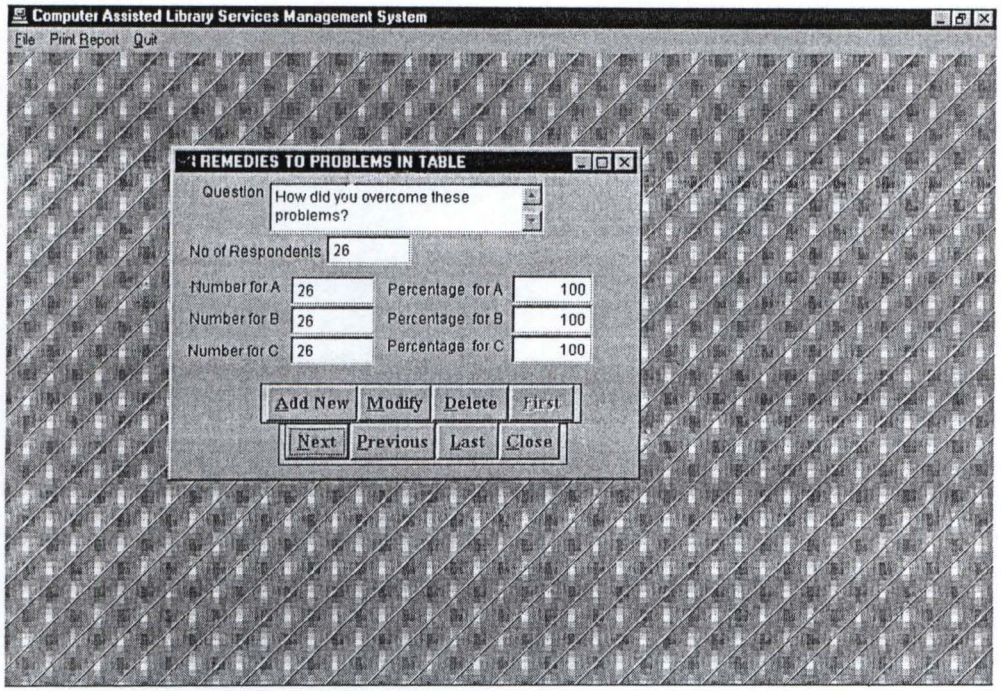
APPENDIX B

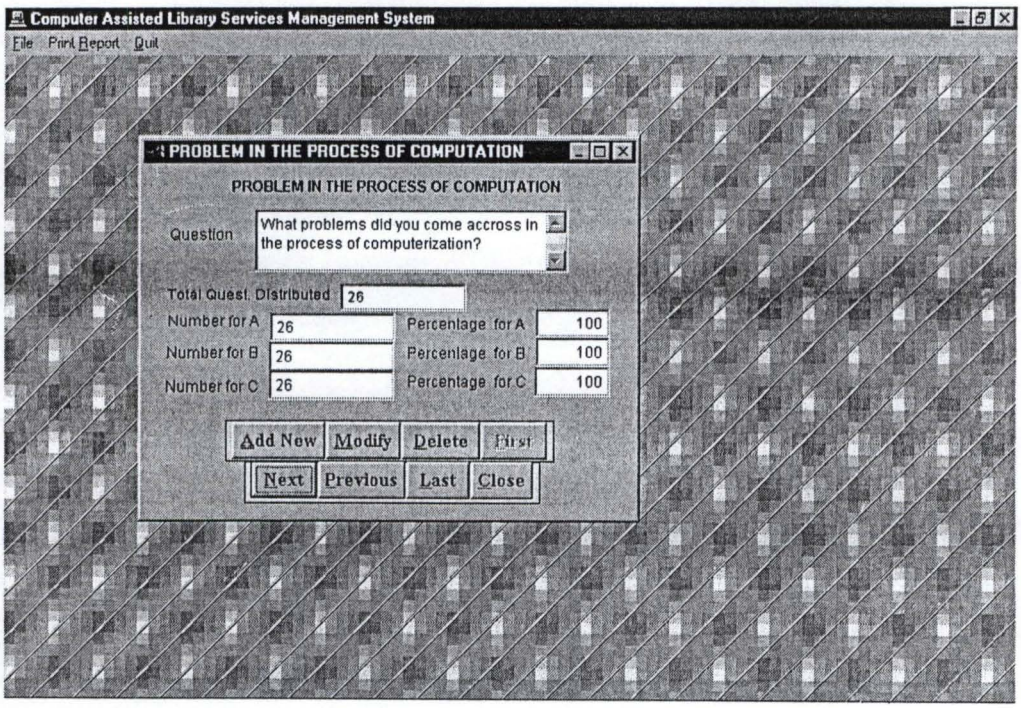

Computer Assisted Library Services Management System
COMPUTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM
COMPUTER ASSISTED LIBRARY SERVICES
MANAGEMENT SYSTEMS
(A Case Study of Dr. Imam Library, Minna.)
A project developed by:
MALUNGI, I. N.
PGD/MCS/99/2000/932
MATHS/COMPUTER SCIENCE DEPARTMENT
FEDERAL UNIVERSITY OF TECHNOLOGY , MINNA
IN PARTIAL FULFILMENT FOR THE REQUIREMENT FOR THE AWARD OF
POSTGRADUATE DIPLOMA IN COMPUTER SCIENCE(PGD)
NUM

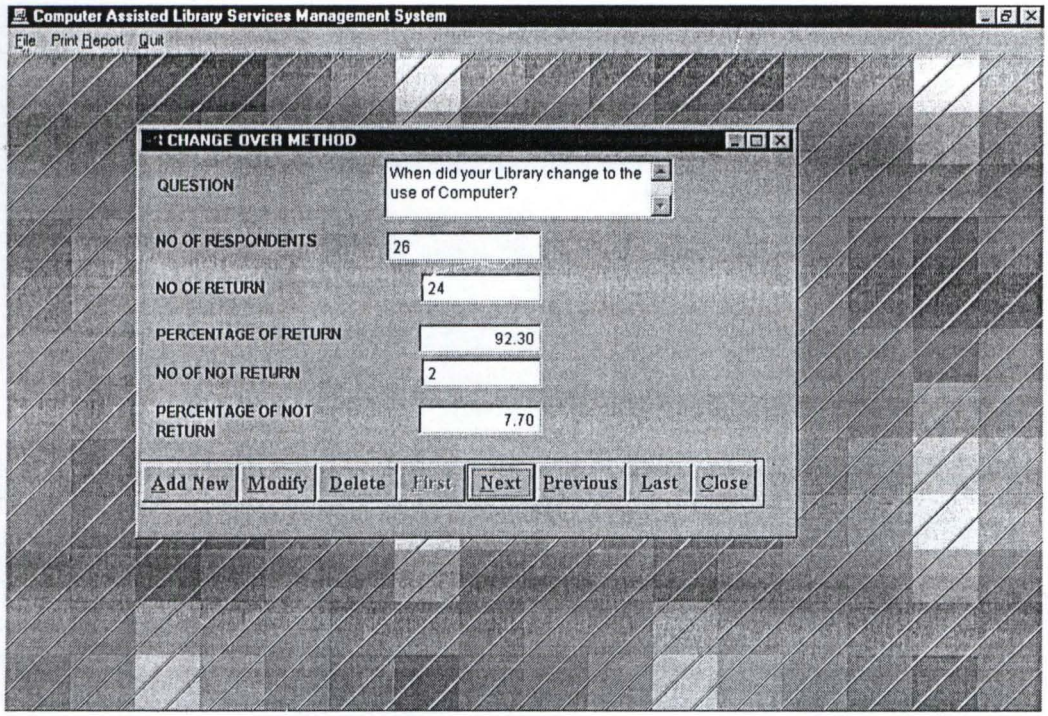

Computer Assisted Library Services Management System
File Print Report Quit
DISTRIBUTION OF QUESTIONNAIRES
DISTRIBUTION OF QUESTIONAIRES
QUESTION
Why Computerising Library Services?
Total No. of Quest. Distributed.
30
No. of quest. Returned
28
% of quest. returned
86.67
no of quest. not returned
4
% of quest. returned
13.33
Add New
Modify
Delete
First
Next
Previous
Last
Close

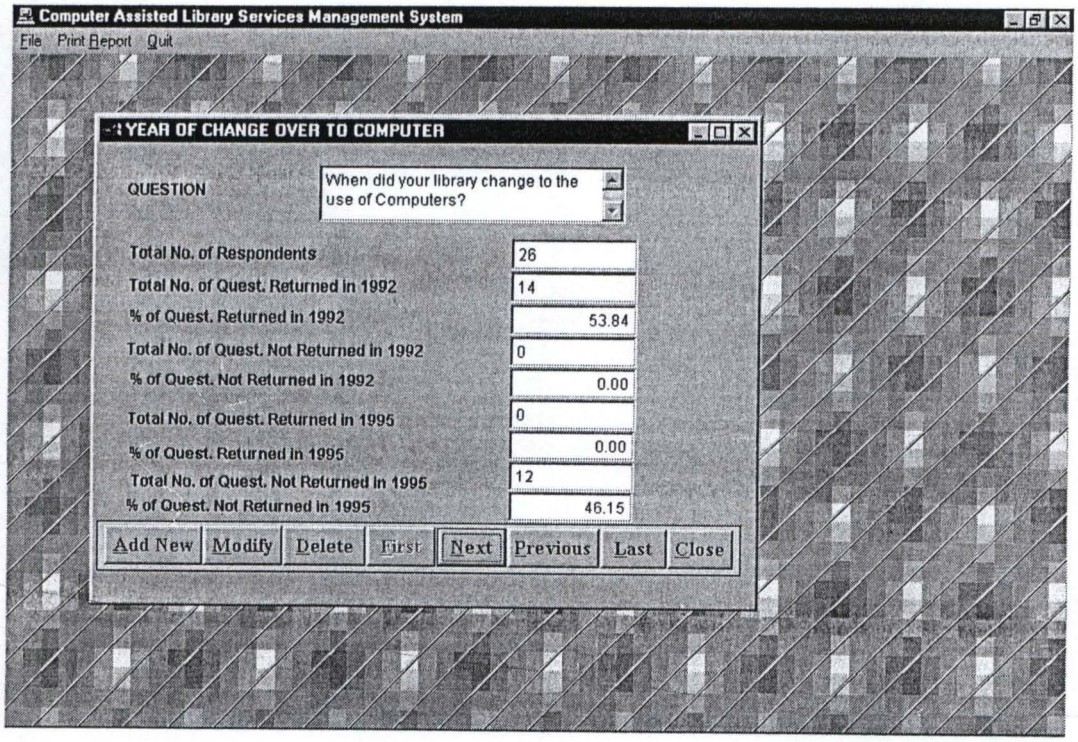

Computer Assisted Library Services Management System
File Print Report Quit
BRAND OF COMPUTER IN USE
Question
What are the names or brand of your Computers?
Total distribution of questionnaire
26
Number of respondents (ICL)
26
Percentage of respondents for ICL
100
Number of respondents (royal)
26
Percentage of respondents for royal
100
Number of respondents for pentium II
26
Percentage of respondents for pentium
100
Add New
Modify
Delete
First
Next
Previous
Last
Close


Computer Assisted Library Services Management System
File Print Report Quit
REASONS FOR COMPUTERISATION
Question
Why did your library go Computer?
NO OF RESPONDENTS
26
Number for A
26
Percentage for A
100
Number for B
20
Percentage for B
76.92
Number for C
15
Percentage for C
57.69
Number for D
14
Percentage for D
53.84
Add New
Modify
Delete
First
Next
Previous
Last
Close


Computer Assisted Library Services Management System
File Print Report Quit
REMEDIES TO PROBLEMS IN TABLE
Question
How did you overcome these problems?
No of Respondents 26
Number for A 26
Percentage for A 100
Number for B 26
Percentage for B 100
Number for C 26
Percentage for C 100
Add New
Modify
Delete
First
Next
Previous
Last
Close


Computer Assisted Library Services Management System
File Print Report Quit
PROBLEM IN THE PROCESS OF COMPUTATION
PROBLEM IN THE PROCESS OF COMPUTATION
Question
What problems did you come accross in the process of computerization?
Total Quest. Distributed 26
Number for A 26
Percentage for A 100
Number for B 26
Percentage for B 100
Number for C 26
Percentage for C 100
Add New
Modify
Delete
First
Next
Previous
Last
Close


Computer Assisted Library Services Management System
File Print Report Quit
CHANGE OVER METHOD
QUESTION
When did your Library change to the use of Computer?
NO OF RESPONDENTS
26
NO OF RETURN
24
PERCENTAGE OF RETURN
92.30
NO OF NOT RETURN
2
PERCENTAGE OF NOT RETURN
7.70
Add New
Modify
Delete
First
Next
Previous
Last
Close


Computer Assisted Library Services Management System
File Print Report Quit
YEAR OF CHANGE OVER TO COMPUTER
QUESTION
When did your library change to the use of Computers?
Total No. of Respondents
26
Total No. of Quest. Returned in 1992
14
% of Quest. Returned in 1992
53.84
Total No. of Quest. Not Returned in 1992
0
% of Quest. Not Returned in 1992
0.00
Total No. of Quest. Returned in 1995
0
% of Quest. Returned in 1995
0.00
Total No. of Quest. Not Returned in 1995
12
% of Quest. Not Returned in 1995
46.15
Add New
Modify
Delete
First
Next
Previous
Last
Close

APPENDIX C

PUTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.
DISTRIBUTION OF QUESTIONAIRES

TION: Why Computerising Library Services?

QUEST. IBUTED	NO OF QUEST. RETURNED	% OF QUEST. RETURNED	NO OF QUEST. NOT RETURNED	% QUEST. NOT RETURNED
	26	86.67	4	13.33

'UTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.
YEAR OF CHANGE OVER TO COMPUTER

When did your library change to the use of Computers?

nts	1992		1995		1996		1997	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
	14	53.84	0	0.00	0	0.00	12	46.15

PUTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.

CHANGE OVER METHODS

TION: When did your Library change to the use of Computer?

.of ondents	Parallel Running.		Direct Change Over.	
	Number	Percentage	Number	Percentage
	24	92.30	2	7.70

'UTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.
REASONS FOR COMPUTERIZATION.

N: Why did your library go Computer?

dents	A		B		C		D	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
	26	100	20	76.92	15	57.69	14	53.84

KEYS:

A ------> To facilitate effective library service.
B ------> To facilitate accourate records.
C ------> For quick retrieval of information.
D ------> For consistency and effeciency.

PUTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.
BRAND OF COMPUTERS IN USE.

UESTION: What are the names or brand of your Computers?

lents	I C L		ROYAL		PENTIUM II	
	Number	Percentage	Number	Percentage	Number	Percentage
	26	100	26	100	26	100

PUTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.
PROBLEMS IN THE PROCESS OF COMPUTERIZATION

STION: What problems did you come accross in the process of computerization?

o.of pondents	A		B		C	
	Number	Percentage	Number	Percentage	Number	Percentage
5	26	100	26	100	26	100

:

------> Should the library start with re-catologquing the old books start afresh together with the new book?

------> Limited number of Computer litrate staff

------> Erratic power failure.

'UTER ASSISTED LIBRARY SERVICES MANAGEMENT SYSTEM.
REMEDIES TO THE PREVIOUS PROBLEMS.

STION: How did you overcome these problems?

o.of pondents	A		B		C	
	Number	Percentage	Number	Percentage	Number	Percentage
	26	100	26	100	26	100

S:

-----> Started fresh Cataloquing

-----> On the job training and sending on some staff outside the library for training.

-----> Provision of stand-by generator.

APPENDIX D

```
**********************
*Menu Section
**********************
set device to screen
clear
SET SYSMENU OFF
CLOSE ALL
CLEAR
set date to brit
set safety off
set color to w/b
set exclusive on
set date to brit
set century on
set status off
set talk off

clear
set path to c:\Library
set defa to c:\Library


PUBLIC MY, myear
store space(9) to myear

_screen.icon = "pc04.ico"
_screen.caption = "Computer Assisted Library Services Management System"
_screen.picture = "wizflax.bmp"


m = 0
do form ffirst

sele 1
do mainmenu.mpr
read events
return
************************************************
*-- Form:        form1 (c:\library\fdistribute.scx)
*-- ParentClass:  form
*-- BaseClass:    form
*
DEFINE CLASS form1 AS form


        Top = 30
        Left = 109
        Height = 297
        Width = 330
```

```
DoCreate = .T.
Caption = "DISTRIBUTION OF QUESTIONNAIRES"
Name = "Form1"


ADD OBJECT txttotal_dist AS textbox WITH ;
	Comment = "", ;
	ControlSource = "m.total_dist", ;
	Format = "!", ;
	Height = 23, ;
	Left = 219, ;
	MaxLength = 4, ;
	TabIndex = 3, ;
	Top = 92, ;
	Width = 93, ;
	Name = "txtTotal_dist"


ADD OBJECT lbltotal_dist AS label WITH ;
	AutoSize = .T., ;
	FontBold = .T., ;
	WordWrap = .T., ;
	BackStyle = 0, ;
	Caption = "Total No. of Quest. Distributed.", ;
	Height = 17, ;
	Left = 17, ;
	Top = 96, ;
	Width = 171, ;
	TabIndex = 2, ;
	Name = "lblTotal_dist"


ADD OBJECT txttotal_ret AS textbox WITH ;
	Comment = "", ;
	ControlSource = "m.total_ret", ;
	Format = "!", ;
	Height = 23, ;
	Left = 219, ;
	MaxLength = 4, ;
	TabIndex = 5, ;
	Top = 117, ;
	Width = 93, ;
	Name = "txtTotal_ret"


ADD OBJECT lbltotal_ret AS label WITH ;
	AutoSize = .T., ;
	FontBold = .T., ;
	WordWrap = .T., ;
	BackStyle = 0, ;
```

```
        Caption = "No. of quest. Returned", ;
        Height = 17, ;
        Left = 17, ;
        Top = 121, ;
        Width = 125, ;
        TabIndex = 4, ;
        Name = "lblTotal_ret"


ADD OBJECT txtperc_ret AS textbox WITH ;
        Comment = "", ;
        ControlSource = "m.perc_ret", ;
        Format = "99.99", ;
        Height = 23, ;
        Left = 219, ;
        TabIndex = 7, ;
        Top = 142, ;
        Width = 93, ;
        Name = "txtPerc_ret"


ADD OBJECT lblperc_ret AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "% of quest. returned", ;
        Height = 17, ;
        Left = 17, ;
        Top = 145, ;
        Width = 113, ;
        TabIndex = 6, ;
        Name = "lblPerc_ret"


ADD OBJECT txtnret AS textbox WITH ;
        Comment = "", ;
        ControlSource = "m.nret", ;
        Format = "!", ;
        Height = 23, ;
        Left = 219, ;
        MaxLength = 4, ;
        TabIndex = 10, ;
        Top = 166, ;
        Width = 93, ;
        Name = "txtNret"


ADD OBJECT lblnret AS label WITH ;
        AutoSize = .T., ;
```

```
        FontBold = .T., ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "no of quest. not returned", ;
        Height = 17, ;
        Left = 17, ;
        Top = 169, ;
        Width = 139, ;
        TabIndex = 9, ;
        Name = "lblNret"


ADD OBJECT txtper_nret AS textbox WITH ;
        Comment = "", ;
        ControlSource = "m.per_nret", ;
        Format = "!", ;
        Height = 23, ;
        Left = 219, ;
        TabIndex = 14, ;
        Top = 190, ;
        Width = 93, ;
        Name = "txtPer_nret"


ADD OBJECT lblper_nret AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "% of quest. returned", ;
        Height = 17, ;
        Left = 17, ;
        Top = 193, ;
        Width = 113, ;
        TabIndex = 12, ;
        Name = "lblPer_nret"


ADD OBJECT edtquestion AS editbox WITH ;
        Comment = "", ;
        Height = 48, ;
        Left = 95, ;
        TabIndex = 1, ;
        Top = 34, ;
        Width = 192, ;
        ControlSource = "m.question", ;
        Name = "edtQuestion"


ADD OBJECT lblquestion AS label WITH ;
```

```
        AutoSize = .T., ;
        FontBold = .T., ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "QUESTION", ;
        Left = 17, ;
        Top = 48, ;
        Width = 59, ;
        TabIndex = 17, ;
        Name = "lblQuestion"


ADD OBJECT label1 AS label WITH ;
        FontBold = .T., ;
        Caption = "DISTRIBUTION OF QUESTIONAIRES", ;
        Height = 17, ;
        Left = 67, ;
        Top = 11, ;
        Width = 216, ;
        TabIndex = 20, ;
        Name = "Label1"


ADD OBJECT container2 AS container WITH ;
        Top = 224, ;
        Left = 47, ;
        Width = 261, ;
        Height = 33, ;
        TabIndex = 22, ;
        ForeColor = RGB(128,0,64), ;
        BackColor = RGB(238,214,213), ;
        Name = "Container2"


ADD OBJECT cmdfirst AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 226, ;
        Left = 250, ;
        Height = 29, ;
        Width = 52, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<First", ;
        TabIndex = 15, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
```

```
        Name = "cmdfirst"


ADD OBJECT cmdaddnew AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 226, ;
        Left = 52, ;
        Height = 29, ;
        Width = 74, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        Caption = "\<Add New", ;
        TabIndex = 8, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmdaddnew"


ADD OBJECT cmddelete AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 226, ;
        Left = 187, ;
        Height = 29, ;
        Width = 62, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<Delete", ;
        TabIndex = 13, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmddelete"


ADD OBJECT cmdmodify AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 226, ;
        Left = 127, ;
        Height = 29, ;
        Width = 59, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<Modify", ;
```

```
        TabIndex = 11, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmdmodify"


ADD OBJECT cmdclose AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 259, ;
        Left = 234, ;
        Height = 29, ;
        Width = 49, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<Close", ;
        TabIndex = 21, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmdclose"


ADD OBJECT cmdprevious AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 259, ;
        Left = 113, ;
        Height = 29, ;
        Width = 69, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<Previous", ;
        TabIndex = 18, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmdprevious"


ADD OBJECT cmdlast AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 259, ;
        Left = 183, ;
        Height = 29, ;
```

```
        Width = 50, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<Last", ;
        TabIndex = 19, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmdlast"


ADD OBJECT cmdnext AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 259, ;
        Left = 59, ;
        Height = 29, ;
        Width = 53, ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontName = "Times New Roman", ;
        FontSize = 11, ;
        FontUnderline = .F., ;
        Caption = "\<Next", ;
        TabIndex = 16, ;
        SpecialEffect = 0, ;
        ForeColor = RGB(128,0,64), ;
        DisabledForeColor = RGB(128,128,128), ;
        Name = "cmdnext"


PROCEDURE cmdfirst.Click
        IF USED("DISTRIBUTE")
                SELE DISTRIBUTE
        ELSE
                SELE 0
                USE DISTRIBUTE
        ENDIF
        IF !BOF()
                GO TOP
                SCATTER MEMVAR MEMO
                THIS.ENABLED = .F.
        ELSE
                MESSAGEBOX("This is the First Record", "Warning")
        ENDIF
                THISFORM.REFRESH
                THISFORM.cmdlast.ENABLED = .T.
ENDPROC
```

```
PROCEDURE cmdaddnew.Click
	IF THIS.CAPTION = "\<Add New"

		THISFORM.SETALL("Readonly",.F.,"Textbox")
		THISFORM.SETALL("Readonly",.F.,"ComboBox")
		THISFORM.SETALL("Readonly",.F.,"EDITbox")

		IF USED("DISTRIBUTE")
			SELE DISTRIBUTE
		ELSE
			SELE 0
			USE DISTRIBUTE
		ENDIF

		SCATTER MEMVAR MEMO BLANK
		*THISFORM.txtidcode.SETFOCUS
		THISFORM.SETALL("enabled",.F.,"commandbutton")
		THIS.ENABLED = .T.
		THISFORM.cmdclose.ENABLED = .T.
		THISFORM.REFRESH
		THIS.CAPTION = "\<Save"
	ELSE
		THISFORM.SETALL("Readonly",.T.,"Textbox")
		THISFORM.SETALL("Readonly",.T.,"combobox")
		THISFORM.SETALL("Readonly",.T.,"editbox")
		THISFORM.SETALL("enabled",.T.,"commandbutton")

		IF USED("DISTRIBUTE")
			SELE DISTRIBUTE
		ELSE
			SELE 0
			USE DISTRIBUTE
		ENDIF

		*GO TOP
		*LOCATE FOR ALLTR(idcode) = ALLTR(m.idcode)
		*IF FOUND()
			*MESSAGEBOX("This Record Already Exists!",
"Warning.")
			*THISFORM.REFRESH
		*ELSE
			INSERT INTO DISTRIBUTE FROM MEMVAR
			THISFORM.REFRESH
		*ENDIF
		THIS.CAPTION = "\<Add New"
	ENDIF
ENDPROC
```

```
PROCEDURE cmddelete.Click

	USE DISTRIBUTE EXCLUSIVE
	ans = MESSAGEBOX("This record will be deleted, Proceed?", 4 +
32,"Warning")
	IF ans = 6
		DELETE
		PACK
		IF !EOF()
			SKIP
		ELSE
			SKIP -1
		ENDIF
	ENDIF
	THISFORM.REFRESH
ENDPROC


PROCEDURE cmdmodify.Click
	THISFORM.SETALL("Readonly",.F.,"Textbox")
	THISFORM.SETALL("Readonly",.F.,"combobox")
	THISFORM.SETALL("Readonly",.F.,"EDITbox")


	IF USED("DISTRIBUTE")
		SELE DISTRIBUTE
	ELSE
		SELE 0
		USE DISTRIBUTE
	ENDIF
	IF THIS.CAPTION = "\<Modify"
		THIS.CAPTION = "\<Save"
		THISFORM.SETALL("Readonly",.F.,"Textbox")
		THISFORM.SETALL("enabled",.F.,"commandbutton")
		THIS.ENABLED = .T.
		THISFORM.cmdclose.ENABLED = .T.
	ELSE
		GATHER MEMVAR MEMO
		THIS.CAPTION = "\<Modify"
		THISFORM.SETALL("Readonly",.T.,"combobox")
		THISFORM.SETALL("Readonly",.T.,"EDITbox")
		THISFORM.SETALL("Readonly",.T.,"Textbox")
		THISFORM.SETALL("enabled",.T.,"commandbutton")
		THISFORM.REFRESH
	ENDIF
ENDPROC


PROCEDURE cmdclose.Click
```

```
        THISFORM.RELEASE
ENDPROC


PROCEDURE cmdprevious.Click
        IF USED("DISTRIBUTE")
                SELE DISTRIBUTE
        ELSE
                SELE 0
                USE DISTRIBUTE
        ENDIF
        IF NOT BOF()
                SKIP -1
                SCATTER MEMVAR MEMO
                THISFORM.REFRESH
                ThisForm.cmdlast.ENABLED = .T.
        ELSE
                ThisForm.cmdfirst.ENABLED = .F.
                MESSAGEBOX("This is the First Record",0 + 64, "Warning")
                THIS.ENABLED = .F.
        ENDIF
        THISFORM.cmdnext.ENABLED = .T.
ENDPROC


PROCEDURE cmdlast.Click
        IF USED("DISTRIBUTE")
                SELE DISTRIBUTE
        ELSE
                SELE 0
                USE DISTRIBUTE
        ENDIF
        IF      !EOF()
                GO BOTTOM
                SCATTER MEMVAR MEMO
                THISFORM.REFRESH
        ELSE
                MESSAGEBOX("This is the Last Record", 0 + 64, "Warning")
        ENDIF
        THIS.ENABLED = .F.
        THISFORM.cmdfirst.ENABLED = .T.
ENDPROC


PROCEDURE cmdnext.Click
        IF USED("DISTRIBUTE")
                SELE DISTRIBUTE
        ELSE
                SELE 0
                USE DISTRIBUTE
```

```
            ENDIF

            IF NOT EOF()
                  SKIP 1
                  THISFORM.cmdfirst.ENABLED = .T.
                  SCATTER MEMVAR MEMO
                  THISFORM.REFRESH
            ELSE
                  THISFORM.cmdlast.ENABLED = .F.
                  MESSAGEBOX("This is the Last Record", 0 + 64, "Warning")
                  THIS.ENABLED = .F.
            ENDIF
            THISFORM.cmdprevious.ENABLED = .T.
      ENDPROC


ENDDEFINE
*
*-- EndDefine: form1
**************************************************

**************************************************
*-- Form:        form1 (c:\library\frmtest.scx)
*-- ParentClass:  form
*-- BaseClass:    form
*
DEFINE CLASS form1 AS form


      Top = 51
      Left = 66
      Height = 145
      Width = 287
      DoCreate = .T.
      Caption = "Password"
      Closable = .F.
      MaxButton = .F.
      MinButton = .F.
      Icon = "pc04.ico"
      Name = "Form1"


      ADD OBJECT command1 AS commandbutton WITH ;
            Top = 108, ;
            Left = 48, ;
            Height = 25, ;
            Width = 73, ;
            Caption = "Ok", ;
            Default = .T., ;
            TabIndex = 3, ;
            Name = "Command1"
```

```
ADD OBJECT command2 AS commandbutton WITH ;
        Top = 108, ;
        Left = 180, ;
        Height = 24, ;
        Width = 73, ;
        Caption = "Quit", ;
        TabIndex = 4, ;
        Name = "Command2"


ADD OBJECT text1 AS textbox WITH ;
        Value = (substr(sys(0),AT('#',sys(0))+2,20)), ;
        Height = 25, ;
        Left = 96, ;
        TabIndex = 1, ;
        Top = 12, ;
        Width = 168, ;
        Name = "Text1"


ADD OBJECT text2 AS textbox WITH ;
        Height = 25, ;
        Left = 96, ;
        SelectOnEntry = .T., ;
        TabIndex = 2, ;
        Top = 60, ;
        Visible = .T., ;
        Width = 169, ;
        PasswordChar = "*", ;
        SelectedForeColor = RGB(255,255,255), ;
        SelectedBackColor = RGB(255,255,255), ;
        Name = "Text2"


ADD OBJECT label1 AS label WITH ;
        FontBold = .T., ;
        FontSize = 10, ;
        Caption = "User Name:", ;
        Height = 17, ;
        Left = 12, ;
        Top = 19, ;
        Width = 84, ;
        TabIndex = 5, ;
        Name = "Label1"


ADD OBJECT label2 AS label WITH ;
        FontBold = .T., ;
```

```
        FontSize = 10, ;
        Caption = "Password", ;
        Height = 17, ;
        Left = 12, ;
        Top = 67, ;
        Width = 84, ;
        TabIndex = 6, ;
        Name = "Label2"


PROCEDURE Load
        public trial, flag
        trial = 0
        flag = 0
ENDPROC


PROCEDURE Activate
        thisform.text2.setfocus
ENDPROC


PROCEDURE command1.Click
          myear = thisform.text1.value
        if upper(alltrim(thisform.text2.value)) = 'CALS'
          flag = 0
          thisform.release()
        do form ffirst
        else
          if trial < 3
            trial = trial + 1
            flag = 1
            messagebox('Invalid Password, Try Again','Wrong Password')
            thisform.text2.value = ""
            thisform.refresh()
            thisform.text2.setfocus
          endif
          if trial = 3 .and. flag = 1
            messagebox('Unauthorised User !','Wrong Password')
            quit
          endif
        endif
        return
ENDPROC


PROCEDURE command2.Click
        quit
ENDPROC
```

```
ENDDEFINE
*
*-- EndDefine: form1
**************************************************

**************************************************
*-- Form:        form1 (c:\library\ffirst.scx)
*-- ParentClass:  form
*-- BaseClass:    form
*
DEFINE CLASS form1 AS form


        Top = 17
        Left = 34
        Height = 314
        Width = 536
        DoCreate = .T.
        Picture = "..\program files\microsoft
office\clipart\publisher\backgrounds\wb00703l.gif"
        Caption = "COMPUTER ASSISTED LIBRARY SERVICES
MANAGEMENT SYSTEM"
        MaxButton = .F.
        MinButton = .F.
        Icon = "pc04.ico"
        WindowType = 1
        WindowState = 0
        BackColor = RGB(128,128,192)
        Name = "Form1"


        ADD OBJECT timer1 AS timer WITH ;
                Top = 144, ;
                Left = 142, ;
                Height = 23, ;
                Width = 23, ;
                Interval = 400, ;
                Name = "Timer1"


        ADD OBJECT timer2 AS timer WITH ;
                Top = 144, ;
                Left = 348, ;
                Height = 23, ;
                Width = 23, ;
                Interval = 3200, ;
                Name = "Timer2"


        ADD OBJECT label2 AS label WITH ;
```

```
        AutoSize = .T., ;
        FontBold = .T., ;
        FontName = "Arial", ;
        FontSize = 13, ;
        BackStyle = 0, ;
        Caption = "(A Case Study of Dr. Imam Library, Minna.)", ;
        Height = 22, ;
        Left = 82, ;
        Top = 58, ;
        Width = 337, ;
        ForeColor = RGB(255,0,0), ;
        Name = "Label2"


ADD OBJECT label3 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontSize = 14, ;
        BackStyle = 0, ;
        Caption = "A project developed by:", ;
        Height = 25, ;
        Left = 148, ;
        Top = 106, ;
        Width = 222, ;
        ForeColor = RGB(128,64,0), ;
        BackColor = RGB(128,0,64), ;
        Name = "Label3"


ADD OBJECT label5 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontSize = 14, ;
        BackStyle = 0, ;
        Caption = "MALUNGI, I. N.", ;
        Height = 25, ;
        Left = 195, ;
        Top = 132, ;
        Width = 133, ;
        ForeColor = RGB(84,18,109), ;
        BackColor = RGB(0,64,128), ;
        Name = "Label5"


ADD OBJECT label6 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
```

```
        FontSize = 11, ;
        BackStyle = 0, ;
        Caption = "PGD/MCS/99/2000/932", ;
        Height = 20, ;
        Left = 183, ;
        Top = 156, ;
        Width = 157, ;
        ForeColor = RGB(84,18,109), ;
        BackColor = RGB(0,64,128), ;
        Name = "Label6"


ADD OBJECT timer3 AS timer WITH ;
        Top = 133, ;
        Left = 82, ;
        Height = 37, ;
        Width = 61, ;
        Interval = 3000, ;
        Name = "Timer3"


ADD OBJECT label4 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontName = "Arial", ;
        FontSize = 13, ;
        BackStyle = 0, ;
        Caption = "MANAGEMENT SYSTEMS", ;
        Height = 22, ;
        Left = 129, ;
        Top = 34, ;
        Width = 201, ;
        ForeColor = RGB(255,0,0), ;
        Name = "Label4"


ADD OBJECT label1 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontName = "Algerian", ;
        FontSize = 16, ;
        BackStyle = 0, ;
        Caption = "COMPUTER ASSISTED LIBRARY SERVICES ", ;
        Height = 30, ;
        Left = 31, ;
        Top = 10, ;
        Width = 437, ;
        ForeColor = RGB(255,0,0), ;
        Name = "Label1"
```

```
ADD OBJECT label7 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontSize = 11, ;
        BackStyle = 0, ;
        Caption = "MATHS/COMPUTER SCIENCE DEPARTMENT", ;
        Height = 20, ;
        Left = 132, ;
        Top = 201, ;
        Width = 327, ;
        ForeColor = RGB(255,0,128), ;
        BackColor = RGB(0,64,128), ;
        Name = "Label7"


ADD OBJECT label8 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontSize = 11, ;
        BackStyle = 0, ;
        Caption = "FEDERAL UNIVERSITY OF TECHNOLOGY ,
MINNA", ;
        Height = 20, ;
        Left = 113, ;
        Top = 224, ;
        Width = 362, ;
        ForeColor = RGB(255,0,128), ;
        BackColor = RGB(0,64,128), ;
        Name = "Label8"


ADD OBJECT label9 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontSize = 11, ;
        BackStyle = 0, ;
        Caption = "IN PARTIAL FULFILMENT FOR THE REQUIREMENT
FOR THE AWARD OF ", ;
        Height = 20, ;
        Left = 8, ;
        Top = 249, ;
        Width = 527, ;
        ForeColor = RGB(255,0,128), ;
        BackColor = RGB(0,64,128), ;
        Name = "Label9"
```

```
ADD OBJECT label10 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontItalic = .F., ;
        FontSize = 11, ;
        BackStyle = 0, ;
        Caption = "POSTGRADUATE DIPLOMA IN COMPUTER
SCIENCE(PGD)", ;
        Height = 20, ;
        Left = 73, ;
        Top = 268, ;
        Width = 424, ;
        ForeColor = RGB(255,0,128), ;
        BackColor = RGB(0,64,128), ;
        Name = "Label10"


PROCEDURE Click
        *release thisform
ENDPROC


PROCEDURE Load

        public maxw,maxh,wid,hei

        store 0 to maxw,maxh,wid,hei

        maxw = _screen.left + _screen.width
        maxh = _screen.top + _screen.height

        wid = thisform.left
        hei = thisform.top
ENDPROC


PROCEDURE timer1.Timer

        if (wid + thisform.left <= maxw)
        thisform.left = thisform.left + 1
        else
        thisform.left = -15
        endif
ENDPROC


PROCEDURE timer2.Timer
        thisform.release()
ENDPROC
```

```
    PROCEDURE timer3.Timer
        i = 0.025
        DO WHILE(THISFORM.WIDTH >= 0 AND THISFORM.HEIGHT
>= 0)
            IF !(THISFORM.WIDTH = 0 OR THISFORM.HEIGHT = 0)
                THISFORM.WIDTH = THISFORM.WIDTH - i
                THISFORM.HEIGHT = THISFORM.HEIGHT - i
            ELSE
                THISFORM.VISIBLE = .F.
                THISFORM.RELEASE
                EXIT
            ENDIF
        ENDDO
    ENDPROC


ENDDEFINE
*
*-- EndDefine: form1
**************************************************
```