

AN AUTOMATED STUDENT MANAGEMENT INFORMATION SYSTEM

***(A CASE STUDY OF FEDERAL GOVERNMENT COLLEGE
MALALI-KADUNA)***

BY

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APPROVAL PAGE

This project work has been read and approved having met standard for the award of a Post-Graduate Diploma in Computer Science of Federal University of Technology, Minna.

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DATE

To my parents and family, they are my source of inspiration.

DEDICATION

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ABSTRACT

This project work describes and analyses the information system of the Guidance and Counselling department of Federal Government College, Malali-Kaduna. This is because the present manual system being employed has had a lot of negative effect on the information management. To achieve this objective the potentials of the computer system is being exploited beyond the usual office routine and other paper works which the computer system is commonly being used for.

The study is essential as it attempts to develop a program that will ensure a well managed and well utilized information at the right time to assist man in decision making with a special focus on Educational Sector. This measure is expected to ease the frustration of lack of security that the existing manual system is prone to.

In developing this program the researcher embarked upon a thorough survey of the inadequacy of the existing manual system in the Guidance and Counselling department of the FGC, Malali-Kaduna and thus develop a comprehensive overview of the proposed alternative with various modifications.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Project work has been a permanent feature in tertiary institution all over the world. It is in this regard that this project work is carried out.

Information helps man in decision making. An information system provides man with the performance which can only be judged by how good the information he is using which is complementary to the tool (information system) he is using to get his needed information.

With much interest in information technology, information management and the quest to see how information is properly managed and system (tool) that would aid in providing good and meaningful information at the right time to assist man in decision making focused on an educational sector with a close look at secondary School specifically.

1.1.1. ABOUT FGC KADUNA AND GUIDANCE AND COUNSELLING (G&C) DEPARTMENT

The school (FGC. KADUNA): Federal Government College (FGC) Malali-Kaduna is a Secondary School established in 1973 by the Federal Ministry of Education (FME) of Nigeria. The establishment of the School was in line with the effort of the FME to provide with the teeming populace of this Country a conducive learning environment for acquiring Knowledge. The School is located in Malali, Kaduna North Local Government of Kaduna State.

At the time of inception, the School started with Seventy-Eight (78) Students (68 boys and 10 girls). The School awards Higher School Certificate (HSC) and West African School Certificate (WASC) on successful completion of five (5) year of study. In 1988, the FME introduces the six (6) year system of Education (6-3-3-4) that is junior Secondary (JS) 1 to 3 and Senior Secondary (SS) 1 to 3 instead of the former five (5) years.

Now the completion of the six (6) years is Senior Secondary Certificate (SSC).

With the great importance attached to education, the population of the School increased and is still increasing.

THE GUIDANCE AND COUNSELLING (G&C) DEPARTMENT

FGC:-

Malali has several department amongst which we have the established in 1987 saddled with the responsibility of providing help to a student or group of student in term of acquiring decide-making skills, making appropriate choices from a number of alternatives acquiring coping skills, learning adjustment strategies and problem solving skills, getting acquainted with and becoming aware of opportunities in the personal social educational and vocational world, experiencing and exploring various interact ional and communication roles and system, assessing various valve systems, as well as in terms of self study and self analysis leading to adequate understanding.

The G&C department has strength of Eight (8) men comprising of 4 professionals counselling, 2 Para-counsellors, 1 typists and a Messenger.

For the department to carryout the aforementioned responsibilities efficiently, require functional information about student. This Information includes:

- Student personal Data
- Family Background
- Home Background
- Educational Background
- Physical Development
- Health Records
- Discipline Records
- Standardized tests
- Exams Assessment Records & other.

As the investigation went on, it was discovered that the manual system, apart from being tedious and Laborious in its operational defects problems associated with it. In addition, close look at the department shows it rely so much on information to carryout its responsibilities efficiently. Therefore, there is need to properly collect data and logically arrange data for easy storage and access, as well as making the operation of the system easy or less laborious.

1.1.2 SECURITY

The system being a manual system, and with the growing number of students admitted annually, means a larger information or records to handle and of course large storage capacity and a specialized access mechanism will be required. It was revealed that these records are prove to

- Natural disaster (flood, wind, fire outbreak, earth quake, etc.)
- Unauthorized access (thieves, saboteurs, hackersmetc.)and unconfidentiality of records

1.1.3 PERFORMANCE

Based on the facts that the system operation manually to handle a large data information becomes tedious and laborious to the department. This affects system performance in terms of storage and access speed's he following were discovered to be the major problems hindering the systems performance operations.

- Speed
- Accuracy and consistency of records
- Duplication of records/files
- Storage and Access problems
- Shareability of records and information

Considering the above enthused, problems associated with the system under investigation, it is categorically clear that the department is faced with serious problems. The information produced by this system would be faulty

and misleading, leading to wrong decisions and taking wrong as well , therefore, it is of strong belief that, the system read to be improved or modified to cope with the situation. In this generation of information technology computer systems and specially developed software would make it convenient for the collection, processing, storing and accessing of the information records, therefore, alleviating the aforementioned problems associated with the manual system, and of course a plus to educational practice.

1.2 STATEMENT OF PROBLEM

With the facts available, it has been approve that the system under destination certainly has problems, and these problems were due to the factors associated with the way and manner data are collected and managed. These factors include:

- Inadequate facilities; thee facilities are storage facilities, access facilities
- Lack of personal
- Operational difficulties
- Security reports of lost of files, unconfidentiality of records, theft etc.
- Too many students i.e. so much data/records to handle.
- Other factors include; duplication of records, inaccuracy of records, access-speed, in reliability and inconsistency of the system e.t.c.

Therefore, there is the need to address the situation so that it does not continue like that. Since no good decision can be made with wrong or in accurate data or information.

1.3 PURPOSE OF STUDY

The purpose of this project is to analyse the information system of G&C department of FGC Malali and design, develop and implement workable system (solution) and would alleviate or eliminate what has been discovered to be problems of the existing (manual) system.

As earlier stated, the system under investigation is an information management system (tool) which is assisting the G&C department in decision making to enable it undertake its responsibilities without tears.

Good decisions or conclusions require good and accurate information. If an information system is good, its product i.e. Information it provides should be accurate, timely, complete, appropriate, reliable, concise and cost effective, certainly, these are to be achieved by the intending new (automated) system. The system if successfully completed, would provide maximum security i.e. protection of data/information against thieves, saboteurs, unauthorised access and also backup in case of lost of records either by natural disaster or thieves.

It is worthy of note that incomplete information is often worse than on information at all. Incomplete information leads to erroneous conclusions. Thus the need to improve the existing (manual) system.

1.4 SIGNIFICANCE OF STUDY

This project work fared on its findings if successfully implemented would benefit the society in the following directly or indirectly as explained below.

- a. Practically, the study would encourage the application of the knowledge acquired in school and to encourage the study computer science. That is to say, it would encourage professionalism.
- b. Generally, the study is applicatable to all areas of endeavour for the facts that almost all aspect of life requires and depends it has been targeted to a particular areas (Guidance and Counselling), it can be applied in other areas

like personnel Management Resource Control Planning staff training, payroll, to mention but few.

- c. Man is faced with different societal problems with a well organized and structured data/information system; it makes it easier for man to handle these problems needed for drawing decision for necessary action is available.
- d. This study would trigger or encourage students to carryout research in related files or even follow-up the same studies (that is, it brings out the potential in students especially in the computer fields.) Indirectly, the society as follows:
- e. In the field of computer science, both the theoretical and practical aspect of the knowledge acquired in school are put together to develop a workable or physical system.
- f. The result of this project would benefit man by developing a system (tool) that would assist in the following ways:
 - i. **ACCURACY** :- The system is characterized by high degree of accuracy; virtually negligible percentage of error if any.
 - ii. **STORAGE**:- The system (automated) can stores reasonable much data or information on long term basis.
 - iii. **PROCESSING SPEED**:- The processing of data is meaningful information and accessibility is done automatically with a remarkable speed that is, any information required at a particular point in time can be made available for immediate action.
 - iv. **CONSISTENCY**:- The system would be consistence in the sense that no matter the number of times it is required to process and produce certain information , it does that with the same speed and produce the same result (information)
 - v. **SHAREABILITY**:- Information /data stored can be used or shared among several users at the same time.
- c. Base on the fact that information are used in decision making, and to make a good decision, there is the need to have good or meaningful information. Basically, this informed the need to carryout a project of this nature. The project is aimed at producing a computerized/automatic system of

STUDENT MANAGEMENT INFORMATION SYSTEM for the G&C department of FGC, Kaduna.

1.5 RESEARCH QUESTIONS

The question asked in order to locate answers to the problems are show below:-

- a. What are the problems associated with the system of data processing and Management?
- b. Is there the need to improve or modify the system of data Management?
- c. How frequent does the department required /need the data information?
- d. Are the facilities (Hardware, Software, Material, Resources Personnel etc.) available and enough for the development and implementation of the new system?
- e. Will the automated student Management information System (ASMIS) solve the already existing problems associated with the manual system?
- f. Will the new system last long and be accepted to users?

1.6 DELIMITATION OF STUDY

Base on interest, available time and resources, the project would tackle the unveiled problems of the system under investigation .

The problems associated with the existing system as started in section 1.2 of this chapter, required serious and immediate attention which emphasis would be based.

The system under investigation; student management information system of G&C department of FGC Kaduna . The computer software that would or replace the manual system would be developed in the following areas

- a. Storage and accessibilities
- b. Accuracy and consistency of data/information
- c. Security and confidentiality of data/information stored
- d. Shareability of information/ data

- e. Backup facility in case of lost of records or information either by natural disaster or theft

Finally, since the system would be a computer based system, it would aids users i.e. counsellors, to make strong and useful decision or conclusion for necessary action within a reasonable time. It would also alleviate the tedious and lab ours aspect of file/records processing (management). No more bulky files and cabinet hideouts for insects in the offices of the department.

1.7 LIMITATION

It is obvious that in carrying out a project of any king, one is bound to face problems of diffident types. Some of the problems associated with this project includes the following:-

- Lack of material
- Insufficient time
- Insufficient fund

As a student, these have been the major problems faced in the course of this project work. The G&C department with the type of function or services they render, they maintain confidentiality on the records and information, therefore it took a series of explanation and consultation before information (facts) were released.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 HISTORICAL BACKGROUND

Guidance and Counselling in any institution is an imperative for any institution that really wants to produce student that are sound in the body, mind and soul.

The Guidance and Counselling (G&C) department of any institution serves as a medium through which the act of directing and helping a student or group of students, it does not necessarily take into consideration the secular or professional.

The G&C department of FGC, Kaduna has been in existence since 1987 Guiding and Counselling students as recommended by the Federal Ministry of Education. Below is a detail review of the operations of the manual system of G&C department other wise referred to as “the existing system” and other related literature.

2.2 LITERATURE RELEVANT TO THE RESEARCH

The existing system is an information management system which operators manually. That is the activity of guiding and counselling heavily relies on fact/data about student(s) properly collected and logically arranged for reference purposes (decision making/action). All these activities were done manually which of course is tedious and tasking likewise it requires human professionalism.

In the past, manual techniques of collecting, manipulating and distributing data to achieve certain objectives were known as data processing.

Today, as technology advances, electromechanical machines (computers) are developed to perform these functions. The term atomistic data processing (ADP) was introduced to describe the use of such machines.

Database automation is aimed at equipping an organization in particular to take better informed decisions, with resources constraints that will obtain. An automated system should perform the following.

- a. Provide management with key information compiled and abstracted.
- b. Facilitate decision making.
- c. Improve efficiency and effectiveness of management functions.

Today, the electronic computer is used to achieve results formally accomplished by humans and machines.

Basically, the objective of all data processing electronic is to convert raw data into meaningful information that can be used in decision making. Data refers to raw sources but not organised. Data cannot be used to make meaningful decision. But through manipulation of the data in one fashion or another, useful information may be produced perhaps in the form of a summary report. Information then, is data that has been organised and processed. Information increases understanding and helps people make intelligent decision.

2.3 CURRENT LITERATURE REVIEW

In addition to being fully acquainted with the history of the area of interest and the nature of the existing system, it is better to show a with bit of understanding of he subject matter. Taking a close work at the existing system he following were observed.

- (a) Use of student's data PROFORM for data collection.
- (b) Commutative Record Folder (CRF) for organizing the collected data (i.e. database)
- (c) Poor storage; that is the CRF are the Data PERFORMA are arranged on shelve and cabinet and some on the ground floor all over the counsellor's office for reference proposes.
- (d) Very tedious and tasking in terms of operations (manipulation of data to produce information for decision-making). That is arrangement and access/retrieval of records.
- (e) It can be accessed by any other persons (unauthorized users) Therefore, no confidentiality of records.

- (f) Records can easily be destroyed by natural disaster or rioter and once destroyed cannot be recovered since there is no backup.

In the light of the above observations, the researcher would like to bring top notice that a good information system should possess the following features for it to operate property and of course they constitute the features of the new system (Student Management Information System SMIS). These features include: collecting verifying converting and communicating data / information.

For the new system to achieve effective data/information management, it should be able to organize data in an integrated way so that all anticipated needs of user of information can be met.

From the operation and requirements of the department the system under investigation must provide:

- (a) Reports that are decision oriented
- (b) Results that user vends

The system, would also generate reports such as predictive/ suggestive reports and demand reports.

2.4 SUMMARY

In summary, the major objective of thin research work is to develop an automated system of Student-Management Information System for the Guidance and Counselling department of FGC Kaduna. The system would aid the department in carrying out it functions efficiently. The system being database oriented, would take care of the entire record data relevant to the department to give helps to student as required or recommended by the federal ministry of education, the -FME.

In addition to the system when developed and successfully implemented it would be cost effective and it would also alleviate the problems inherent in the manual system hence finally the researcher is of the opinion that the study would be of developmental and educational benefit to the entire society it would encourage student for research of thin kind vis-à-

vis the study of computer science or application in institution therefore encouraging professionalism in fields alike and solving problems faced by man

CHAPTER THREE

3.0 SYSTEM ANALYSIS

3.1.1 INTRODUCTION

A system is a group of related elements that work together towards a common goal. Therefore, system analysis is the act of studying group or related elements that make a system by an analyst (a professional) to provide the management (users) with the following:

- a. A clear and concise statement of the problem, or reason for the system analysis.
- b. A statement clearly defining the level of the system analysis and its objectives.
- c. An identification of the information that must be collected and the potential sources of this information.
- d. A preliminary schedule for conducting the analysis.

3.1.2 REASONS FOR THE SYSTEM ANALYSIS:

Right from inception, it was made clear that the research work was to develop an improved system (Student Management Information System) of the Guidance and Counselling department to replace the current one, hence the need for the system analysis.

This system analysis was carried out in order to:

- a. Solve a problem
- b. Response to new requirements
- c. Implement new technology
- d. Make board system improvement.

3.1.3 DATA ANALYSIS

After data has been collected, it must be organised and integrated to be seen in proper perspective. Whereas the focus during data collections on what is being done, the focus during data analysis is no why certain operations and procedures are being used. The researcher, therefore is looking for ways to

improve these operations and procedures. Chapter Three, section 3.7 and 3.8 outlined and described the sources and instruments/methods of data collection or gathering for the purpose of analysing the system as well as developing or improving the current system.

3.1.4 SYSTEM ANALYSIS REPORT

After collection of data and studying the data, the following were considered:

- a. **Scope and Objectives of the system analysis:** The system analysis was carried out in order to analyse the system of G&C department of FGC Malali, Kaduna. The operations of the department rely so much on the records of students of the college collected and stored for necessary actions. The objective of this analysis is to uncover the problems associated with procedures of operation of the current system and alleviate the problems as supposed. This involves developing a lasting solution to the problems.
- b. **Explanation of the Existing System:** The existing system is a record keeping one. The operations of this system is manual. That is records are collected using forms called "Student Information PROFORMA". These forms are issued to students of the college for filling and returned to the department to be transferred into a "Student Record Folder" and filed on shelves or cabinet for reference purposes. The data are purely student's personal data. That means the records are supposed to be confidential

The operation of the system rely heavily on humans, i.e. it requires human professionals to handle its operations which is tasking and tedious.

- c. **Statement of all Constraints and Assumptions made on the System:** Based on the analysis, the system being tasking and tedious in operations, the following were also discovered.
 - Poor data storage
 - Lost of files (information/records)
 - Non confidentially of records and insecurity

- Lack of backup incase of lost records either by natural disaster, theft, or rioters.
 - Costly to manage
 - It is not portable (i.e. not easy to transfer).
- d. A Preliminary Alternatives that Currently Seems Feasible: The alternative seems feasible is to design and develop an automated system of information management that would replace the existing one.

Going by the findings of the data/facts analysed, it was apparent that the entire staff of the department suggested that “the use of computer would alleviate their sufferings and also eliminate problems of the current system”. That means adopting the best information management system. This is feasible as resources are very much available and once implemented it will last as long as it is maintained and reviewed incase of changes in technology as well as the requirement of the department.

- e. Estimate of the Resources and Capital Requirement for the Development of a New System to Replace the Current One include:
- New system analysis and feasibility study
 - Cost of designing and developing the new system.
 - Cost of reviewing and maintaining the new system.

3.1.5 REQUIREMENT SPECIFICATION

The objective of the new system if developed, is to alleviate the problems associated with the current system which have been described in Chapters two and three of this study. Therefore, the requirement specification is to develop a system that would provide the department with the best and a lasting solution to their information management system. The requirement specifications for the system development include Hardware and software requirements.

Hardware requirements: The computer system hardware are the physical components of a computer which are connected together and operate under the influence of the software. Thus, it is visible part of the

computer system that can be touched and felt. These hardware components include: CPU (Central Processing Unit) VDU (Visual Display Unit or Monitor), Disk Drives (Floppy and Hard Disk), Mouse, Keyboard, and Printer. These components can as well serve for the purpose of installing the new system.

The computer system configuration required for the installation/running of the new system efficiently is as follows:

- Pentium II and above
- 20 GB Hard Disk Drive and above
- 64 MB RAM and above
- CD ROM Drive
- Full Multi Media System

Software Requirement: Software is a collection of instructions written for the computer to understand. They are programs written by individuals or computer manufacturers. The programming language used for the development of this program/software, is the Visual Basic 6.0 Enterprise Edition Developed by Microsoft Corporation. Its powerful features promoted the choice of VB for the purpose of writing this program. These features include user friendliness, flexibility and easy to learn and adopt. It is also portable and efficient. To install and run VB efficiently, the computer system must be loaded with Windows 95 and above as the operating system. It is also the platform on which the new system can be installed and run smoothly.

3.1.6 SYSTEM SPECIFICATIONS

The system specifications for the new one include the following:

- a. Input to the system (accept data)
- b. Process the input into meaningful information.
- c. Output (produce) the information in a well presented form when demanded.
- d. Store the data/information on a special storage medium for reference.
- e. Protect the information from unauthorised access (thieves or hackers), and natural disaster.

- f. Make backup incase of lost of data/information.
- g. Speed and accuracy of data/information retrieval/access and storage.

3.2 RESEARCH METHODOLOGY

3.2.1 RESEARCH DESIGN

The Research Design provides the researcher with assert principles, guidelines and steps in the research work process. A well defined research design provides a focus for the researcher and also, a means of communicating to others the logic and reasoning for the researcher work to be carried out.

The researcher made use of two (2) research designs in the course of this research work. Namely,

- a. Historical researcher design
- b. Survey research design

Survey Research Design: This method involves collection of first-hand data or facts from primary sources by the researcher through the use of observation and enquiry. This was done by administering set of questionnaire to the staff of the G&C department of the college. Some key principal officers/staff were also interviewed.

Historical Research Design: The researcher read through relevant documents to collect data/facts of previous events or phenomenon. This method enabled the researcher to collect data from the secondary sources in the library, and relevant literatures from books and documentation about the existing system. This led to the discoveries of what happened in the past. This method also helped in the establishment of the genuineness of the phenomenon.

3.3 AREA OF STUDY

The area covered in this research work is the Guidance and Counselling department of FGC Malali, Kaduna. Therefore, it is an administrative area or zone. The study focused on the management of

information (data) of students for the guiding and counselling by the department. That is, the research work is to develop an improved or automated system capable of collecting, processing and storing data or information about student(s) for reference purpose and decision making for necessary action.

3.4 **POPULATION OF THE STUDY**

This section describes the number of persons or institutions upon which this research work (study) drew its data/facts. Factors such as cost, accessibility and the nature of the research questions can be limitation to the study.

Therefore, the population size from which the data used for this research work is eight (8) persons. The department has eight (8) staff personnel comprising of four (4) professional counsellors, two (2) para-counselors, a typist and a messenger. Both professional and para-counselors were given questionnaire to fill and interviewed, and the typist and messenger were also interviewed.

3.5 **SAMPLING TECHNIQUES**

There are eight (8) personnel in the department and therefore a manageable population size and hence there was no need for sampling.

3.6 **SAMPLE FOR THE STUDY**

Eight (8) persons, that is, the whole of the population size of the department was used to obtain data about the existing system for the study.

3.7 **INSTRUMENT FOR DATA COLLECTION**

Primary and secondary data are the two (2) main types of data.

Primary Data: These are the data collected from first-hand information sources through enquiry (questionnaire and interview). These data are

directly applied to the research work and are not culture specific, therefore, they are not limited in their general application.

Secondary Data: These are data collected or deduced from sources such as books student projects and other relevant documents.

3.8 METHOD OF DATA COLLECTION

Data Collection is enormous in every research work. It is important to note that whenever an attempt is made to use wrong or fabricated data, the result of such act would definitely manifest in the conclusion.

For the purpose of this study (automation of student management information system), four (4) methods of data collection were adopted and used as tools for gathering facts/data. The methods are as described below.

- a. Reading
- b. Interview
- c. Questionnaire
- d. Observation

Reading: This method of data collection is also referred to as documentation or record inspection. This method helped the researcher to obtain secondary data from records or documents relevant to the study. The reading method is economical in the sense that it is free, less tasking and requires less time in data gathering. The only problem with the method is that it might not be organised in a format desired by the researcher.

Furthermore, it might be culture specific. That is to say, data collected are only for specific purposes and cannot be used for general purposes or application.

Interview: Personal interview was one of the methods adopted by the researcher to gather data and related information. The researcher was on several occasions at FGC Malali, G&C department. The first visit, the researcher was opportune to interview and discussed with the chief counsellor (Head of Department). The HOD briefed the researcher about the

department. The discussion was fruitful as lot was revealed to the researcher including the entire functions/duties of the department, what they need to carryout these functions, which are meaningful information or facts about students of the college, how these information (facts) are collected, processed and stored for reference and easy access, etc.

The subsequent visits, the researcher was given materials used for data collection and storage which are PROFORMA and Cumulative Record Folder respectively.

Questionnaire: A questionnaire is a survey documents containing series of questions with spaces provided for possible responses in form of prose or checklist of the individual respondent. It is a practicable facts gathering instrument or document in which rows are provided for the individual respondent to record his/her response in respect to the questions indicated.

Being an interrogative instrument used in survey research, it was used to determine the current status of the system (manual system) as well as the opinion, intentions and motives of the respondent. The researcher, whereby questions asked were pertinent to the problem (system), adopted an open-end questionnaire. A sample can be found at the appendix.

Observation: As earlier mentioned, the researcher was at the G&C department on several occasions, and was opportune to see and observe the activities/operations of the department life cycle. These include flow of information (files), the storage (shelves or cabinet),and other related matters that led to this study.

This method of facts finding enabled the researcher to have a clear picture of the problems or facts concerning the existing system that were not revealed or fetched by other methods.

CHAPTER FOUR

4.0 SOFTWARE DESIGN & DEVELOPMENT, IMPLEMENTATION AND TESTING.

4.1 SYSTEM DESIGN, DEVELOPMENT AND IMPLEMENTATION

After reviewing the system analysis report and it was decided to continue the project, the system design stage begins.

Designing an information system demands a great deal of creativity and planning. It is also very costly and time consuming. In the system analysis, the researcher (analyst) focused on what the current system does and what it should be doing according to the requirement discussed in the analysis stage. In this section (design phase), the analyst changes focus and concentrated on how a system can be developed to meet the information requirements.

4.1.1 REVIEWING OF GOALS AND OBJECTIVES:

This research work is aimed at providing lasting solution to the problems of the current system as earlier mentioned. Objectively, the new system should be able to handle the issues of data collection, storage, processing, access, speed, security, accuracy and reliability.

4.1.2 SYSTEM MODEL:

In this section, the researcher represents symbolically (diagrammatically) the system's major components to verify his understanding of the various components. The analyst used flowcharts in the development of the systems model. (Page appendix..... Data model, input form and Output form refer to page..... Appendix).

4.1.3 ORGANIZATIONAL CONSTRAINTS:

No organization has unlimited resources; most have limitations on financial budgets, personnel, and computer facilities and time constraints for system development. The analyst recognised the constraints on system design imposed by this limited availability of resources.

The FGC Malali is a non profit making organisation (Academic institution) owned and run by the FME, the researcher find it deemed necessary to adopt the computerised system. That is a computer system controlled by menu driven software that would be user friendly so that it would minimize the issue of unprofessional computer staff or personnel for proper implementation of the new system.

4.1.4 FEASIBILITY ANALYSIS:

For the commitment of the college as well as the G&C department, the system is feasible. The system would be acceptable to users/personnel of the department for the fact that they were part of the system analysis (facts finding), design and implementation. Therefore, retraining the personnel to adopt and accept the new system has been solved. Apart from that, the system is user friendly and easy to learn and use.

4.2 SYSTEM PROGRAMMING

A computerised information system depends on computer programs for converting data into information. The researcher (programmer), based on his complete understanding of what is expected of the system, begins programming (coding or writing instructions), if, on the other hand, all the system requirements have not been fully considered time may spend in reprogramming.

To maintain flexibility, the programs were developed in independent modules, which makes it easier to maintain and review/change. Decision regarding to the language used has been considered in section 4.1.14 (Requirement Specification) with consideration of the versatility of the language (Visual Basic 6.0) page.....appendixfor program listing.

4.2.1 TESTING

Before a system becomes operational, it must be tested and debugged. Testing occurs at various levels. These levels are program testing (lowest level) and system testing. This program has been divided into distinct logical modules and each module has been tested to ensure that all input is accounted for, the proper files were updated, and correct reports are printed. The modules are linked together and the complete program (system) tested.

4.2.2 DOCUMENTATION

Until recently, one of the neglected parts of the system development was documentation. Many systems developed in the early 70s were implemented with sparse documentation. This presented no problem when the systems were first implemented. Overtime, however, changes in the business and information requirements necessitated making systems and programming changes. It was at this point that organisations painfully, realised the need to have extensive system documentation. It was often difficult to understand that five to ten years earlier, changes made to them often caused errors in other programs. Therefore, it is good to adopt a system development requiring adequate documentation, as done by the researcher for easy maintenance and review of this study (project/system) in the future. Find user guide/,manual on page.....appendix.....

4.2.3 SPECIAL CONSIDERATION

In designing solutions to the problems, the researchers (system analyst/programmer) gave special considerations beside developing the programs required to solve the problems (student record management). The system analysis concentrates on inputs, processing and outputs, the following issues were also considered:

- a. The form of input to the program determines how the program should ask for data.
- b. Processing steps should verify accuracy of data and identify potential errors.
- c. The program may be required to produce output that is not in hardcopy.

4.3 **SYSTEM IMPLEMENTATION**

At this stage, the researcher is able to see the transformation of ideas, flowcharts, and narratives into actual processes, flows and information. This transition was not performed easily, however, personnel must be trained to use the new system procedures, and a conversion must be made from the old system to the new system.

4.3.1 **PERSONNEL TRAINING:**

Two groups of people interface with a system. The first group includes the people who developed, operate, and maintain the system. The second group includes the people who use the information generated by the system to support their decision making. Both groups must beware of these responsibilities regarding the systems operations and of what they can and cannot expect from it.

4.3.2 **CONVERSION**

The switch from an old system to a new one is referred to as a conversion. Conversion involves not only changes in the mode of processing of the data but also the changes in equipment and in clerical procedures.

4.4 **SYSTEM REVIEWING AND MAINTENANCE**

Once the system is implemented and in full operation, it is examined to see if it has met the objectives set out in the original specifications, unforeseen problems may need to be overcome and that may return to the earlier stages in the life cycle to take a corrective action. From time-to-time the requirements of the department as well as the college may change due to discoveries or changes in technology that may call for upgrading the system life cycle will be replaced again and yet again.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY OF FINDINGS

Details study of the Guidance and Counselling department of FGC Malali, Kaduna has been carried out and its activities and operations were well understood as outlined in the previous chapters. As a result of that, the problems associated with the system were identified. Thus, the need for the development of the new system (Student Information Management System) to replace the existing one. As analysed in the previous chapters, the results are herein summarised.

- a. It was discovered that the existing system's operation was manual and the personnel are not computer literate.
- b. All the respondents to the research questions suggested for the application of computer system for the department's operations.
- c. It has come to notice that computer has a vital role in the operations of the department as it rely so much on data for decision making.
- d. Finally, the computerised system would improve the operation procedures of the department in terms of efficiency, information storage and accessibility, security and accuracy.

5.2 CONCLUSION

Information as explained is the "lifeblood" of any business and is playing an ever-increasing part in the day-to-day management of business. It was on this reason an automated system was developed for accurate, timely, appropriate, reliable, secured information for managerial planning and decision making.

5.3 RECOMMENDATION

Apparently, the need to computerise the operations and procedures of the G&C department was informed due to through study/investigation and understanding the constraints and problems associated with existing system. Therefore, the following were suggested/recommended.

- a. The management should ensure that the necessary requirements for the proper implementation and installation of the system were met so as to ensure long life span of the new system.
- b. The system should be used as specified and directed by the analyst to derive the maximum and abundant benefits of the new system.
- c. Maintenance and review of the system should strictly be adhered to so that the maintenance and upgrading of the system were made in order not to be out of technological advancement.
- d. Workshop/training should be provided to newly employed personnel and routine workshop to enlightened personnel on latest changes on the system.
- e. It is also recommended that any analyst (researcher) who may wish to undertake such research work, should study the system very well and liaise with the personnel of the department for proper understanding of areas that may require improvement and area not covered in this research work.
- f. Security/protection for the system should be maintained as set for a standard computer environment.

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Datamation


```
Private Sub cmdadd_Click()
```

```
    Combo1.Text = Clear
```

```
    Combo2.Text = Clear
```

```
    Combo3.Text = Clear
```

```
Data1.Recordset.AddNew
```

```
End Sub
```

```
Private Sub cmdadd_KeyPress(KeyAscii As Integer)
```

```
    If KeyAscii = 65 Then
```

```
        Data1.Recordset.AddNew
```

```
    End If
```

```
End Sub
```

```
Private Sub cmdcancel_Click()
```

```
    Me.Hide
```

```
End Sub
```

```
Private Sub cmddel_Click()
```

```
    With Data1.Recordset
```

```
        .Delete
```

```
        .MoveNext
```

```
        If .EOF Then .MoveLast
```

```
    End With
```

```
End Sub
```

```
Private Sub cmdgrid_Click()
```

```
Response = 0
End Sub
Private Sub Data1_reposition()
Screen.MousePointer = vbDefault
On Error Resume Next
Data1.Caption = "Record:" & (Data1.Recordset.AbsolutePosition + 1)
End Sub
```

```
Private Sub cmdrefresh_Click()
Data1.Refresh
End Sub
```

```
Private Sub cmdsave_Click()
Data1.UpdateRecord
Data1.Recordset.Bookmark = Data1.Recordset.LastModified
End Sub
```

```
Private Sub txtbranch_Change()

End Sub
```

```
Private Sub picFields_Click(Index As Integer)
picFields(Index).InsertObjDlg
End Sub
```

```
Private Sub picture2_Click()
Picture2.InsertObjDlg
End Sub
```

Option Explicit

Private Sub Text1_Change()

End Sub

Private Sub txtok_Click()

Unload Me

End Sub


```
Private Sub Data1_Error(DataErr As Integer, Response As Integer)
MsgBox "Error:" & vbCrLf & "Illegal operation..." & Error$(DataErr)
Response = 0
End Sub
```

```
Private Sub Data1_reposition()
Screen.MousePointer = vbDefault
On Error Resume Next
Data1.Caption = "Record:" & (Data1.Recordset.AbsolutePosition + 1)
End Sub
```

```
Private Sub cmdrefresh_Click()
Data1.Refresh
End Sub
```

```
Private Sub cmdsave_Click()
Data1.UpdateRecord
Data1.Recordset.Bookmark = Data1.Recordset.LastModified
End Sub
```

```
Private Sub txtbranch_Change()

End Sub
```

```
Private Sub picFields_Click(Index As Integer)
picFields(Index).InsertObjDlg
```

End Sub

Private Sub picture2_Click()

Picture2.InsertObjDlg

End Sub

Option Explicit

Private Sub cmdadd_Click()

Combo1.Text = Clear

Combo2.Text = Clear

Combo3.Text = Clear

Data1.Recordset.AddNew

End Sub

Private Sub cmdadd_KeyPress(KeyAscii As Integer)

If KeyAscii = 65 Then

Data1.Recordset.AddNew

End If

End Sub

Private Sub cmdcancel_Click()

Me.Hide

End Sub

```
Private Sub cmddel_Click()
```

```
With Data1.Recordset
```

```
    .Delete
```

```
    .MoveNext
```

```
    If .EOF Then .MoveLast
```

```
End With
```

```
End Sub
```

```
Private Sub cmdprint_Click()
```

```
'repfrm.Show
```

```
End Sub
```

```
Option Explicit
```

```
Private Sub Text1_Change()
```

```
End Sub
```

```
Private Sub txtok_Click()
```

```
Unload Me
```

```
End Sub
```

```
Private Sub cmdok_Click()
```

```
frmabout.Show
```

```
End Sub
```



```
    grid1.Col = 0
    grid1.Text = Str(i)
Next i

grid1.Row = 1
Call ass

For i = 2 To (.RecordCount)
    .MoveNext
    grid1.Row = i
    Call ass
Next i

End With
End Sub
Public Function ass()
With rdept
grid1.ColWidth(1) = 500
grid1.Col = 1
grid1.Text = ![Id-NO]
grid1.ColWidth(2) = 1000
grid1.Col = 2
grid1.Text = ![Name]
grid1.Col = 3
grid1.Text = ![date of empl]
grid1.ColWidth(4) = 1200
grid1.Col = 4
grid1.Text = ![Branch]
grid1.ColWidth(5) = 1100
grid1.Col = 5
```

```
grid1.Text = ![Designation]
grid1.ColWidth(6) = 1600
grid1.Col = 6
grid1.Text = ![Course]
grid1.ColWidth(7) = 900
grid1.Col = 7
grid1.Text = ![Duration]
grid1.ColWidth(8) = 700
grid1.Col = 8
grid1.Text = ![Sex]
End With
End Function
```

```
Private Sub grdrep_Click()
```

```
End Sub
```

```
Option Explicit
```

```
Dim trtable3 As Database
```

```
Dim txt As String
```

```
Dim i As Integer
```

```
Dim n As Integer
```

```
Dim rsept As Recordset
```

```
Private Sub cmdok_Click()
```

```
Unload Me
```

```
End Sub
```

```
Private Sub cmdcancel_Click()
```

```
End
```