COMPUTERISATION OF STUDENT EXAMINATION RECORDS
A CASE STUDY OF ADAMU AUGIE COLLEGE OF EDUCATION ARGUNGU

BY

ADAMU, ALIYU KALGO
PGD/MCS/2001/1073

DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA NIGER STATE,
NIGERIA.

NOVEMBER 2003.

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A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A POSTGRADUATE DIPLOMA IN COMPUTER SICENCE OF THE FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA NIGER STATE, NIGERIA.

NOVEMBER 2003.

CERTIFICATION

This project has been seen through and approved by my Supervisor as having met the requirement of the department of Mathematics and Computer Science for the award of Postgraduate Diploma in Computer Science, Federal University of Technology Minna.

Prof. K. R. Adeboye Supervisor	Signature and Date
Mr. L. N. Ezeako Head of Department	Signature and Date
External Examiner	Signature and Date

DEDICATION

This project is dedicated to my beloved mother Hajiya Aminatu Amare Kalgo from whom I inherited most of the qualities I posses. "Thanks you Mummy".

ACKNOWLEDGEMENT

First and foremost I would like to express my whole gratitude to Almighty Allah praise be to Him for blessing and granting me this opportunity to be involved in such an academic venture. And to His Messenger Muhammad (S.A.W.).

My inestimable thanks and profound gratitude goes to my Supervisor Prof. K. R. Adeboye for his remarkable contributions, advice and tolerance shown to me in the process of writing this project report and to all other members staff of the Mathematics and Computer Science Department.

I wish to acknowledge with the deepest appreciation and gratitude to my mother Aminatu Amare who solemnly supported me both financially and morally, and also to my brothers and sisters for their guidance and assistance given to me.

I am also grateful to the examination officer of the Adamu Augie College of Education Argungu for the tolerance and assistance given to me while writing this project reports.

I also wish to acknowledge with thanks the assistance of Awalu Aliyu Kalgo, Kusayyu Isah and a lot of others for their contribution toward the completion of the program.

Aliyu Adamu Kalgo

ABSTRACT

This project report is based on the computerization of students examination records at the Adamu Augie College of Education, Argungu. A simple survey shows that the computerization of students examination records are done manually with some attendant problems. Therefore this project focuses on how best the computer system can be used to solve the problems which are found with the manual system.

TABLE OF CONTENT

Page No.

CHAPTER THREE

CHAPTER FOUR

CHAPTER FIVE

CHAPTER ONE

PRELIMINARY STUDY

1.1 INTRODUCTION

The tittle of this project is "computerization of students examination records" a case study of Adamu Augie College of Education, Argungu.

For thousands of years, calculation and data analysis continued to be done by hand one can only marvel at these achievements. For instance, Johannes Keplers law governing the motion of planets around the sun was the result of 40 years of calculation. In his diary Kepler complained of individual calculation taking as long as 80 hours. However, in the last decade, the impact of computer has permented all sectors of calculation and manipulation. Therefore the tedious calculation that takes many people many hours to do can now be done with ease on the computer.

1.2 AIMS AND OBJECTIVES OF THE STUDY

The aim of this study is to fulfil the partial requirement for the award of the Post Graduate Diploma in Computer Science of the Department of Mathematics and Computer Science of the Federal University of Technology Minna.

However, the objectives of the study are:

i. To eliminate the errors, inefficiencies and delay in the computation and release of examination result at the Adamu Augie College of Education, Argungu.

ii. To provide a means of accommodating results of the ever increasing number of students as against the present method.

iii. To make available materials on the study to improve study by the other people.

1.3.0 BRIEF HISTORY OF ADAMU AUGIE COLLEGE OF EDUCATION, ARGUNGU

Following the creation of Kebbi State out of the former Sokoto State in august 1991 signaled the need for the establishment of a College of Education, as the new Kebbi State inherited no such Institution. The desire by the new State to have its own College of Education for the training of the required manpower in the field of teacher education, led to the enactment of an edit (Kebbi State College of Education Law 1993) on 28th July, 1993 by the then civilian Governor of Kebbi State Alhaji Abubakar Musa, Garkuwan Yauri.

The College located at Government Teachers College Argungu a distance of fifty kilometres away from Birni Kebbi the State Capital was

formally established in march 1994 following the appoint of Dr. U.T. Mohammad a Senior lecturer and acting Dean, Faculty of Education and Extension Services, Usmanu Danfodiyo University Sokoto as its first Provost

However, as clearly explained by the College enabling edict (Kebbi State College of Education, Law 1993), the College was established to achieve the following objectives.

1. provide courses of study, training, research in arts, languages and sciences leading to obtaining the Nigeria Certificate in Education (NCE).
2. To provide avenue for teacher in service course and curricular development.
3. To promote through teaching research and any other means, the advancement of knowledge and its practical application to the needs of the community.

1.3.1 STUDENT ENROLMENT

Academic programs started on 2nd January, 1996 following the appointment of the Principal officers of the College. The College started during 1995/1996 academic session with an initial enrolment of 300 students. Gradually, the number of students enrolment has been increasing

from 300 students in 1995/1996 session to over 2,600 students as at 2002/2003 academic session.

1.3.2 ACADEMIC STRUCTURE OF THE COLLEGE

Academic Programs are planned based on approved NCE syllabus. Courses are offered in various fields leading to the award of Nigeria Certificate in Education (NCE). The academic programs are organized in Schools and a Dean heads each School. The Schools and their departments are:

a. Schools of Science
   - i. Department of Biology
   - ii. Department of Chemistry
   - iii. Department of Physics
   - iv. Department of Mathematics
   - v. Department of P.H.E.
   - vi. Department of Integrated Science.

b. School of Arts and Social Sciences
   - i. Department of Social Science
   - ii. Department of Islamic Studies
   - iii. Department of Geography
   - iv. Department of Arabic Medium

v. Department of History

c. School of Languages

i. Department of Arabic

ii. Department of English

iii. Department of Hausa

iv. Department of French

d. School of Education

i. Department of General Education

ii. Department of Primary Studies

iii. Department of General Studies

iv. Department of Pre-NCE and Remedial Studies

e. School of Vocational and Technical Education

i. Department of Agric Education

ii. Department of Home Economist

iii. Department of Fine Arts

iv. Department of Business Studies.

However, the causes available in the College are shown in the table below which are ran by the entire department in the various schools.

COURSES	DURATION
NCE	3 years
Pre-NCE	1 year
Remedial	1 year
Prelim-Grade II	1 year

The one year pre-NCE courses are designed to prepare Grade II TC, GCE OL, SSCE holders with inadequate relevant credits to obtain the required credits before they are allowed to enter into first years in the NCE programme.

1.3.3 ADMINISTRATIVE STRUCTURE OF THE COLLEGE

The Provost in the head of the Central Administration of the College which consist of four main department who is the Chief Executive of the College and who is empowered by law with the general functions of directing the activities of the College. The four departments are:

A. THE REGISTRY DEPARTMENT

The Registrar is the head of the registry department. He is the Chief Administrative Officer of the College responsible to the Provost for implementation of policies and administrative matters regarding staff

recruitment and admission of students. However, the registry has some sub-units under it such as the Establishment Office, Students Affairs Division, Academic Affairs Division etc.

b. THE BUSARY DEPARTMENT

The Bursar is the head of Bursary Department and he is responsible to the Provost for the financial administrative of the College. He is the Chief Finance Officer in charge of payment of Staff Salaries, procurement, storage and distribution of College properties.

c. THE ESTATE DEPARTMENT

The Estate Department is responsible for maintenance and general up keep of the College building, vehicles, furniture and equipment.

d. THE COLLEGE LIBRARY

The College Library is headed by a Chief Librarian and other supporting staff in the Library are Assistance Librarian, Library Assistant and Senior Library Assistant.

The Library is intended to meet the needs of the courses enough by the College and to permit and encourage staff and students to read beyond the confines of their individual courses.

1.4 ENTRY REQUIREMENT

Candidates applying for admission into the college most have any of the following qualifications: -

A. NCE COURSES

i. Grade II Teachers Certificate with Credit/merit in three subjects including the two teaching subjects.

ii. SSCE/GCE with 4 credits at a sitting including the teaching subjects or a minimum of 3 credits and 2 passes at not more than two sitting (including English Language).

B PRELIMINARY COURSES

i. PRE-NCE

A minimum of four passes in SSCE/GCE O' level at one sitting or five passes at not more than two sitting including English Language.

ii. REMEDIAL SCIENCES

A candidate must have attempted at least five science subjects at the SSCE or GCE O level examination with at least two passes.

iii. PRELIM GRADE II- TC

Grade II referred in not more than three national or compulsory papers.

1.5 EXAMINATION REGULARITIES

Examination may be inform of written papers, oral examination, practical, submission of projects any combination of these or any other form approved by the Academic Board. The continuous assessment of course work shall also be included in determining examination results. Examination is normally held twice a year i.e. first and second semester.

1.5.1 REGISTRATION OF STUDENTS FOR EXAMINATION

In order to be admitted to any examination, a student must have registered for the courses units to be examined and must have fulfilled all college requirement concerning residence fees or other matters. He/she must also have fulfilled any departmental requirement regarding attendance at 75% and satisfactory completion of any course work, practical, assignment, projects or other matters before he/she is admitted to any examination. The standard necessary to satisfy these departmental requirements shall be determined from time to time by a school Board of Studies and any charge shall be made known to the students on time.

However, the Registrar shall prepare examination cards with appropriate examination number for insurance to he students at least 2 weeks before any of the semester examination begins. These card will be prepared based on the lists of students submitted by each department examination

officer, who shall certify that the students have been registered for the programme of studies so far, as the departmental examination officer has information that satisfied all College requirements for admission into the examination.

1.5.2 EXAMINATION REGULATIONS

These regulation made by the Academic Board shall apply to all programmes of students in the college. Among the regulations are:

i. All forms of cheating, attempting or aiding directly or indirectly is totally forbidden and punishable after determination by the students disciplinary committee and approved by the College Academic Board.

ii. Candidate are expected to examine their vicinity to ensure that there is no pieces of paper, writing or any form of incriminating material that may lead to circumstantial evidence portraying possible malpractice.

iii. Each student on his/her exam table must exhibit I.D. and Exams Cards.

iv. Rudeness to invigilators, supervisors or examination officers is a punishable offence.

v. A student shall be at the examination room at least 15 minutes before the time of examination. A students is required all examination materials to the hall.

vi. A student who leave the examination room without the knowledge of the invigilator shall not be re-admitted unless throughout the period, he/he has been under the supervision of an invigilator.

vii. A student must not, during an examination directly or indirectly give assistance to any other student or permit any other student to copy from or to otherwise use his paper. Similarly, a student must not accept any assistance from any other students.

viii. At the end of time allocated, each student shall stop writing when instructed to do so and shall submit his/her script to the invigilator.

ix. A student shall not leave the examination room in the last 15 minutes of the time allocated.

1.6 STUDENTS' ACADEMIC RECORDS.

1.6.1. RECORDS OF ALL REGISTERED STUDENTS.

This record consists of all personal data relating to the registered students. The information's so kept under this record are Students Name, Age, Sex, Contact Address, Nationality, State, Local Government Area. The format of the form through which the information obtained is shown below:-

S/N	Reg. No.	Name	Age	Sex	Nationality	State	L.G.A	Address

Table 1.1: Registration Form

1.6.3 TABLE OF GRADING

The table 1.2 shows the range of marks grade and the numerical (weighted) grade point equivalent and remarks. It is useful in attaching weight to the mark range scored by individual student in separate courses.

MARK	GRADE	W.G.P	REMARKS
70- above	A	5	Excellent
60-69	B	4	V. Good
50-59	C	3	Good
45-49	D	2	Fair
40-44	E	1	Pass
0-39	F	0	Fail

Table 1.3: Table of Grading

1.7 LIMITATION OF STUDY

The Adamu Augie College of Education, Argungu has up to 23 functional department each having 3 arms of courses that is NCE I, II and III. Being it a College of Education, each of the departments has its co-subjects of combination. Therefore the result is calculated based on their subject combination not departmentally. It would therefore become too cumbersome to develop a program that can be used in calculating the result for all the subject combination. Hence a sample of student from Math/Geography has been taken as a case study.

CHAPTER TWO

DEVELOPMENT AND ADVANCES IN COMPUTER

2.1 HISTORY OF COMPUTER DEVELOPMENT

The history of computers linked to a chain of calculating inventions that stretched back to pre-historic times. The development of tools to aid in calculating began with early civilization. People first used sticks, stones, skells notches on a sticks, marks in the sand or knobs in a rope to aid counting. Later fingers were used to perform simple computation. However, all these processes were hard and extremely difficult to keep accurate records of. One of the earliest calculating devices was the ABACUS, this ancient calculating instruments has been used for the past 2000 years.

In the early 17th century (1617) John Napier developed a device for multiplication and division, the device was Napiers Bones, which was used for years. In 1642 a Frenchman called Balise Pascal built the first practical calculating machine. Pascal's calculator was capable of performing only addition and subtraction. It was later in 1694 Gottfied Withelm Von Leibriz, a German mathematician designed the STEPPED ROCKONER, a machine that could add, subtract, divide, multiply and calculate the square roots. This device forms the basic of many mechanical calculators.

In 1820, the first machine to perform arithmetic operation enough for commercial use was the ARITHMOMETER built by Charlesxzvier Thomas. Later in 1833 Charles Babbage an English mathematician designed the ANALYTICAL ENGINE which was the forerunner of the modern digital computers.

However, it was twenty years after the death of Charles Babbage, that the use of punched cards was applied to data processing. It was during that time that Herman Hollerith an employed of the United State Bureau of Census used punched card equipment to process the 1890 census. Moreover, in 1907 James Power developed a punched cards system to rocess the 1910 census. These machine were the forerunner of Electro-mechanical data processing system.

In the years 1937-1944, Howard Atken of Howard University led a team of engineers in the designed of the ASCC (Automatic sequence controlled calculator) also called MARK 1. This large machine uses a program to guide it through a long series of calculations.

In 1964, the first large scale, general purchase, electronic digital computer called ENIAC (electronic numerical integrator and computer) used to compute firing and ballistic tables for Army Artillery gums was put into

operation at the University of Pennsylvania by John Manchly and J. Presper Eckert.

The first computer designed with eventual real time application in mind was developed by a Massachusetts Institute of Technology in 1945 and called WITCHWIND I. The completion of this projects, resulted in the development of magnetic core memory, the primary internal storage used in all computers until 1964.

However, the first business data processing system UNIVAC I (Universal Automatic computer I) was developed by Eckert and Mauchly and it contained 5,000 vacuum tubes. These machines could read, compute and write information simultaneously. Later automatic programming techniques were developed to help people use these machines. These techniques, have since becomes programming languages that are used extremely in solving problems on modern computers.

2.2 THE GENERATION OF COMPUTER

Following the advances in computer technology, computer technology can be classified according to their generation. These generations distinguishes from each other from the main electronic components in used at that time to facilitate the circuit functions within the computers. The generation are as follows:-

i. THE FIRST GENERATION OF COMPUTER

These generation of computers which began with Eckert and Mauchly is considered to span the period 1951-1958, i.e. 7 years. The use of vacuum tubes in the central processing unit (CPU) and internal memory units characterize this generation of computers.

ii. THE SECOND GENERATION

The second generation of computers began from the period of 1959-1963. It was in the second generation that the transistor, which was solid state device, that allowed computers to have reasonable size, replaced the vacuum tubes and required power.

iii. THE THIRD GENERATION

This generation was characterized by the advanced in a single chip. This was the introduction of the integrated circuit (IC) in 1964, with this technological advancement an entire circuit containing transistors and connecting wires could be placed on a single chip. This development resulted in greater reliability and compactness. Computers of this generation have low cost and do not require much power.

iv. FORTH GENERATION

This generation of computers began in 1971 with the introduction of the microprocessor a central processing unit on a chip. This generation includes the introduction of super computers. These monster computers are in heavy demand for military and meteorological applications that required a high speed of operation. However, another advancement of this generation has been the introduction of the personal computers (PC) because the power of the computer has been made available to any body who wishes to use it.

However, research into the fifth generation of computer system is now underway, with the hope that these computers will depend on major advances in artificial intelligence, voice recognition and image processing. If successful, 5^{th} generation will be more powerful and easier to use. They will use chips manufactured using large-scale integration techniques (ULSI). These chips contained 1-100 million transistors. It has been predicted that fifth generation will be used every where serving as the intelligent assistant and giving users access to a broad range of information.

2.3 COMPUTER CLASSIFICATION

Computers can be classified based on two ways thus based on the size of the computer and the type of logic the use.

In term of size, computers can be classified into three ways:-

(a) MAIN FRAME COMPUTERS

This is a very large and expensive types of computers used to solve highly sophisticated problems. They operate at very high speeds and create a fair amount of heat that required cooling system. Thus it requires special support and special physical environment. These types of computers are used in large business organization, governmental or academic institution, because it can support many users and multiple functions.

(b) MICRO COMPUTERS

These are often called personal computers (PC), they are small and do not required any special environment to use them, unlike the main frame computers. These computers are oftenly used to perform a specific task and contain only the integrated circuit that is necessary for the particular application. They have better software support and are much easier to programme than the larger ones. However, they have small memory capacity and are the slowest of all the other categories.

(c) MINI COMPUTERS

These are used for more extensive application where greater speed, greater memory capacity and more diverse control functions are required. They are not as flexible as the main frame but are more versatile than the microcomputers.

However, computers can be classified base on the type of logic they use thus:

(a) DIGITAL COMPUTERS

Digital computers are basically electronic calculating and data processing machines that work with instruction and data, which are coded in simple binary digit form. The personal computers (PC) and main frame are example of digital computers.

(b) ANALOG COMPUTER

Analog computers used physical relationships and it is a measuring machine. That is analog computer works on the continuous data. Examples of such physical relationship are pressure, temperature, voltage and speed. A speedometer is an example of an analog device.

(c) HYBRID COMPUTER:

This combines the work of both digital and analog computers. They work on both discrete and continuos data. Hybrid computers are

known to have found much application in control and feedback process.

2.4 COMPONENT OF COMPUTER SYSTEM

Component of computers can be classified into two. Thus the hardware and software component.

2.4.1 HARDWARE COMPONENT

Hardware components of a computer system are the physical component of the computer that you can see or touch. A computer system consists of number of components each performing a specific function. The figure below shows the basic components of a computer.

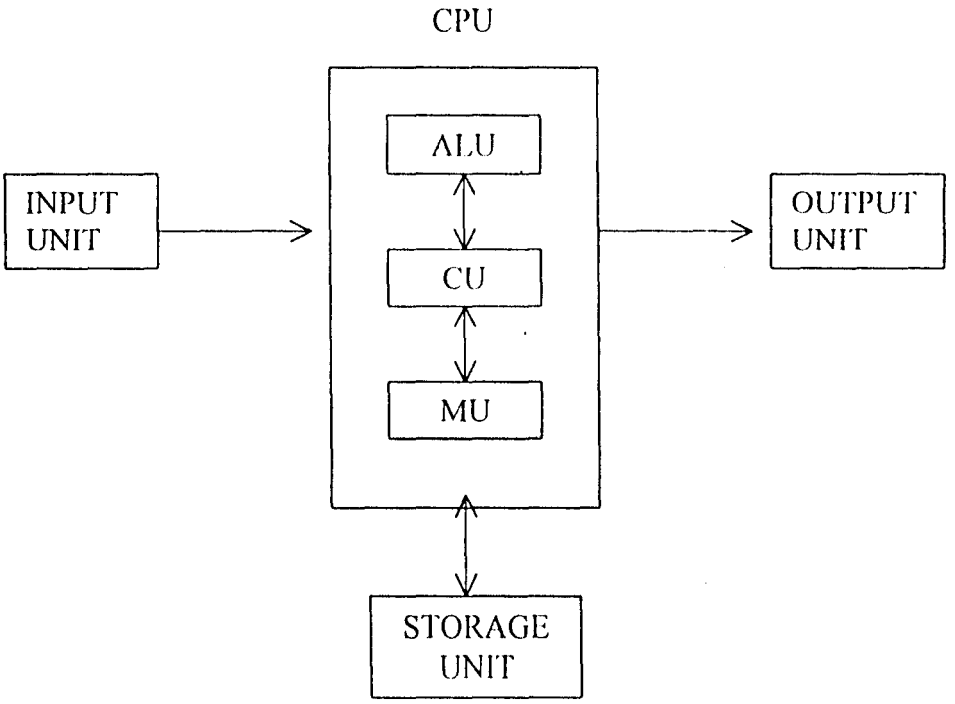


Figure I: Basic Components of Computer

(a) **THE INPUT UNIT:**

This provides communication channel between the user and the computer. This unit contains devices that enable the user to transmit both instructions and data into the computer. Common examples are the Keyboard, the Mouse, Joysticks, the Lightpen etc.

(b) THE CENTRAL PROCESSING UNIT:

This is the brain of the computer where all the processing and control of the system is done. The CPU is made of the following parts.

i. ARTITHEMATIC AND LOGIC UNIT: This unit dealt with all arithmetic and logic operations presented to the computer system.

ii. THE MEMORY UNIT: This is the computer storage space where data and instruction are processed before taken into the storage unit.

iii. THE CONTROL UNIT: This controls all the activities of the computer system including the activities of the software.

(c) THE OUTPUT UNIT:

This consists of devices that enable the user to obtain the result of the processed data. This output can be informed of soft or hard copy. The output from the monitor is called the soft copy and that

from the printer is called the hard copy. Examples of output devices are Printers, Visual Display Unit (monitor), Plotters etc.

(d) THE STORAGE UNIT:

This is the computer storage space based for holding instructions and data before, during and after processing which can be used for further retrieval. This storage can be either volatile or non-volatile form.

However complementing the hardware is a soft ware system which includes an operating system and other program that direct or instruct the computer system to perform a specific functions.

2.5 THE PROGRAMMING LAGUAGE

This aspect concentrates on the programming language used to implement a software system. In computer programming, a programming language serves as a means of communication between the user with a problem and the computer used to solve the problem. An effective programming language enhances both the development and expression of computer programs.

Since computers do not understand the languages of human beings, it is necessary to have some knowledge of programming language, so that

decision about which programming language is best suited for a particular application can be made.

2.5.1 CLASSIFICATION OF PROGRAMMING LANGUAGE

Since 1960, literally thousands of different programming languages have been designed and implemented. The majority of which have been implemented as part of research projects. This language can be classified into lower and higher level languages.

i. MACHINE LANGUAGE

This is a lower level language. In the early days of computers, the only way to instruct the computer was to use binary numbers. This type of language is called machine language. This is the computer's language which consists of strings of zeros and ones representing the two state in which electronic components exist i.e. 1 or 0, off or on, positive or negative etc.

ii. ASSEMBLY LANGUAGE

The assembly language is also a lower level language like the machine language. It is essentially a symbolic version of the machine language. Assembly language makes use of symbols to represent machine language codes. Each operation code is given a symbolic code such as ADD for addition and MUL for multiplication.

Moreover, memory locations are given symbolic names such as Ay and AX. Assembly language systems often certain diagnostic and debugging assistance which are not available at the machine language.

iii. HIGH LEVEL LANGUAGE

Unlike machine and assembly languages, high level languages are not machine dependent. A single machine language statement can generate multiple machine code. There are two types of high level language.

(a) STATIC HIGH LEVEL LANGUAGE

These are languages which provides the programmer with some control statements and variable declarations and which have no facilities for the programmer to directly control the machine operations generated by the computer. They are characterized by static storage allocation. The storage space required for program variable could be computed and reserved in advance of program execution. This class was among the first high level language and consequently has become very widely used. Examples of these languages are FORTRAN and COBOL.

(b) DYNAMIC HIGH LEVEL LANGUAGE:

This class of programming languages is distinguished by a requirement that all storage management is carried out dynamically i.e. the execution of individual language statement can course storage to be allocated and de-allocated. In general, the structure of this language tends to be quite different from the structure of static language. Indeed, languages in this class rarely even resemble each other. They are widely used commercially but are sometimes useful in research and prototyping application, example are APL, LISP etc.

2.5.2 PROGRAMMING METHODOLOGY

When constructing programs for a design there are two possible methods that may be adopted these are:

i. TOP-DOWN DEVELOPMENT:

This is the top-down process that can be used in system design, with the program structure being hierarchical. The programmer implements the higher level of the design and represents the lower levels of stubs, which simulates their functions in a simplified way.

As the implementation of a level is completed the programmer moves on the next lower level and implements that, in terms of it sub

level consequently the lowest level of the system if implemented using basic programming languages facilities.

ii. BUTTOM-TOM DEVELOPMENT:

This is the converse of the above method. Implementation starts with the lower levels of the system and the system is built up until finally the highest design level is implemented.

2.5.3 PROGRAMME LAYOUT

The majority of programming languages is free format languages. That is, the meaning of a program is not affected by how it is laid out on a page. Exceptions to this are FORTRAN and some assembly languages where the position of field in an input record can affect its meaning. This was a problem during the days of the widespread use of punched card. Layout affects the readability of the program. The liberal use of blank lines and consistent paragraphing, not only make the program more elegant, they also make it easier to read. They act as separate which distinguish one part of the program from another.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 REVIEW OF THE EXISTING SYSTEM

The current computation of students' examination records is done manually at the examination office of the College. The computation of the students examination records is carried by the examination officer who compute and compile the result of the entire students.

The manual system of compiling students' examination records is not only cumbersome but also time consuming.

The examination result of a student is calculated at the end of the session after the result of the courses offered by the student was submitted to the exam office of the college. In the course of computing and compiling these examinations records errors do occur which are normally detected at the College Academic Board.

3.2 PROBLEM OF THE EXISTING SYSTEM

The manual system of compiling students examination records as operated by the College has a lot of problems which makes it very difficult to have accurate reliable and efficient result of the students. The major lapses in the existing system are:

A. PROMPT TO ERROR

The processing of the result involves the series of calculation right from the first year to the last year of a student. Performing such calculation manually with calculators is bound to result in errors.

B. SYSTEM OF PRODUCTION

Student grade production is cumbersome and full of errors, which cause allot of delay, since results are typed only at the end of the session instant of typing them in stages to bridge the gap of ideal time.

C. INSECURITY

Inadequate security of examination records. Since all the record of the student ate kept in a file, which is easy to access by any body.

D. FILING SYSTEM

Following the rapid increase in number of student in the College, records of some student would be misplaced or missed out which would make it difficult to traced the records of a student that graduated for some years ago.

3.3 ANALYSIS OF THE NEW SYSTEM

Earlier in the chapter, the existing system has been analyzed and the problems of the system were identified. Now the computer version of the system was designed to tackle the problem of the existing system.

The new system was designed to overcome the problems identified in the existing problem. To overcomes the problems, a computer version satisfying the following conditions are required:

i. The new system should automate the computation of the examination result, which is currently done manually.

ii. The system should generate a computerized examination record

iii. The existing system should serve as a database for students' examination records.

3.3.1 SYSTEM ANALYSIS

This is the method of how best we can utilize computers with other resources to accomplish a task. It is mainly concerned with the changing from an already existing system, which was manual to a computerized system, which tends to be faster and result oriented such as the used of computer.

Current system is been examined including its procedures, information flow and control. Hence the analysis spells out the strength and weakness of the existing system as:

a. PROBLEM DEFINING:

We try to find out weather there is a need for a new system or not and if the needs arises, we need to specified the objective of the

system, the problem associated with the existing system and suggest a new system to be adopted in place of the existing system.

b. FEASIBILITY STUDY:

This intended to find out that weather the solution is feasibility to the problem already defined above. If the solution is feasible, we try to look for all the possible alternative solutions to the problem. At this point we need to examine the cost and benefit analysis by testing the project feasibility, its operational modalities, economical and technical and its workability from each chosen solution and recommend the best one.

c. INVESTIGATION AND FACT FINDING:

Here a full study of the best option is conducted in other to justify our choice. The analysis approach tries to implore various ways and appropriate approaches to the situation under consideration. The system tries to identify the basic information, the kind of data to be used and the volume of the data that needs to be processed, and the problem associated with the present system.

d. ANALYSIS:

Here full details of the existing method and the objective of the proposed system which always lead to some vital questions such as;

the reasons for the occurrence of the problem, and what led to the adoption of the present system and what are the other best alternative methods.

3.3.2 SYSTEM DESIGN

Now, one has already made choice of what the system to be from the analysis stage. The analysis of the current problem is used at the beginning of the system design to develop objective for the purposed of new system.

The analysis will surely lead to a possible number of options in design as different combinations of manual and computerized elements could be considered. As soon as one option is chosen then the purpose of the design stage is to work from the specified requirements to produce a system specification. The system specification has to be a detailed set of input documents, which could provide some feature of the adopted or proposed system for the change over. This is intended to serve as a communication link between the management, programmer, operation and users.

The system need to be well documented as the analysts who design the system acts as an intermediary for the programmer, hand/software supplier as each group received the problem differently, hence the system analyst must work with all the groups. Finally the system who design must understand the problem from the users point of view, also how the

programmer or soft/hardware suppliers can solve the users problems and make decisions with the budgetary constraints as this is crucial for the system analysts and design process.

It is good for the system of specification to include preliminary information contents, objectives of the system, detail procedure for the regression analysis and making an appropriate flow charts for data computation after getting the regression model, detail specification of input files, output file and master files. This will enable a smooth change over from the old to the new system. The flow chart depicts the relationship between inputs, processing and output, as it makes it easy for the management of the college to review the new system and give the programming staff clear insight as to the working of the system.

3.4 PROGRAMMING LAGUAGE TO BE USE

As we know, programming in any language is a written sequence of instruction for accomplishing specific tasks or as a command for a computer to perform a particular function. Several types of programming language are available but for the purpose of this project Microsoft Excel is used as the choice of programming language. A computer program has been written for the computerization of students' examination records.

CHAPTER FOUR

IMPLEMENTATION FO THE NEW SYSTEM

4.1 PROGRAM LISTING

This section involves the procedures in which the new system is designed to compute and record the students examination results using the electronic spreadsheet stated in the last chapter. The new system is mainly concerned with the coordination of activities, procedures and the efficient utilization of the available equipment so as to achieve the desired objectives.

4.1.1 THE PROGRAM

A1: V1: Adamu Augie College of Education Argungu
[A1: V1 Merge and centered]

A2: V2: Examination Office [A2: V2 merged]

A3: V3: Examination Results

A4: V4: Combination..... Section..... Level

A5: Serial Number

B5: Registration Number

D5: G5: Education

H6: K5: 1st Combination [Mathematics]

L5: O5: 2nd. Combination [Geography]

P5: S5: GSE

V5: Remarks

D6: Code [Education]

E6: Units

F6: Grade

G6: GP [Grade Point]

H6: Code [1st Combination]

I6: Units

J6: Grade

K6: GP

L6: Code

M6: Units

N6: Grade

O6: GP

P6: Code

Q6: Units

R6: Grade

S6: GP

T6: Total Units

U6: =Sum [E7: E13, I7: I14, M7: M13, Q1: Q10]
[Sum all the units for all the subject combination]

T7: Total GP

U7: =Sum [G7: G13m K7: K14, Q7: Q13, S7: S10]
[Sum the GP for the entire four subjects]

T8: GPA

U8: =[U7/U6]
[Total GP/Total Unit]

T9: Total Units up date

T10: Total GP update

T11: CGPA

4.2 PROGRAM INTERFACE

Program interface provides detailed description of all components and operations of the system. It provides the necessary means of coordinating the procedures, programming, files and other operation involved in the system and the contents of a system design needed for operation from the input to output.

However, after the system has been booted i.e. when the computer has been started in the window environment, then click on the start button at the task bar and go to the program, from the program click on Microsoft Excel and the Microsoft excel environment will appeared. Furthermore we can set the page to landscape and required margin of both side so that the page can contain all the columns and finally fallow the program as stated.

4.3 OUTPUT OF THE PROGRAM

The output of the program is the required output of the students examination result after all the completion and computation. The output of a sample students can be seen in the Appendix III at the end of this project. The students are from the Mathematics and Geography combination. The scores of the students have been entered i.e. the registration number, names, courses, unit and grade obtained for each course and finally the Gp and GPA of the student were calculated and recorded in the system and the hand copy is given out as the output.

4.4 NEW SYSTEM IMPLEMENTATION

The implementation of the new systems involves the changeover from the old system to the new system, which is the computerized system. The change over may be achieved in a number of ways among the ways are:

i. Direct changeover

ii. Parallel changeover (Running)

iii. Pilot changeover (Running)

iv. Phased changeover

DIRECT CHANGEOVER:

This is the complete replacement of the old system by the new system in one more (over night). It is a bold more that should be under taken only

PHASED CHANGEOVER:

This involves the introduction of the new system in phases. A complete part is computed using the new system while the remaining points are processed using the old system.

The disadvantage of this method is that it creates problems of controlling the selected parts of the old and new system and prolongs the implementation period.

APPENDIX A OUTPUT OF THE PROGRAM

ADAMU AUGIE COLLEGE OF EDUCATION ARGUNGU
EXAMINATION OFFICE
EXAMINATION RESULTS

Combination: *Math/Geo* Session: *2000/2001* Level: *NCE I*

S/N	Reg., No.	NAMES	EDUCATION				MATHEMATICS				GEOGRAPHY				GSE						REMA RKS
1	2124	AMINU. S. K.	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	Total unit	49	
			111	2	C	6	111	2	A	10	111	2	B	8	101	1	A	5	Total GP	164	
			112	2	C	6	112	1	E	1	112	2	C	6	102	2	B	8	GPA	3.35	
			113	2	C	6	113	2	E	2	113	2	D	4	103	3	B	6			
			121	2	B	8	114	2	B	8	121	2	D	4	105	2	C	6			
			122	2	C	6	121	2	A	10	122	2	C	6							
			123	2	B	8	122	2	B	8	123	2	B	8							
			124	2	A	10	123	2	D	4	124	1	A	5							
							124	1	A	5											PASS

S/No	Reg., No.	NAMES	EDUCATION				MATHEMATICS				GEOGRAPHY				GSE						REMA RKS
2	2234/00/KB	AHMED. D. A.	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	Total unit	49	
			111	2	B	8	111	2	A	10	111	2	B	8	101	1	A	5	Total GP	144	
			112	2	C	6	112	1	E	1	112	2	C	6	102	2	B	8	GPA	2.94	
			113	2	E	2	113	2	E	2	113	2	F	0	103	3	C	6			
			121	2	B	8	114	2	B	8	121	2	D	4	105	2	E	2			
			122	2	C	6	121	2	F	0	122	2	C	6							
			123	2	B	8	122	2	B	8	123	2	B	8							
			124	2	A	10	123	2	D	4	124	1	B	5							
							124	1	A	5											C\O MAT 121, GE

S/No	Reg., No.	NAMES	EDUCATION				MATHEMATICS				GEOGRAPHY				GSE						REMA RKS
3	2123/00/KB	ALIYU. M. K.	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	Total unit	49	
			111	2	A	10	111	2	A	10	111	2	B	8	101	1	A	5	Total GP	152	
			112	2	E	2	112	1	F	0	112	2	C	6	102	2	B	8	GPA	3.10	
			113	2	C	6	113	2	C	6	113	2	F	0	103	3	E	3			
			121	2	B	8	114	2	B	8	121	2	D	4	105	2	C	6			
			122	2	C	6	121	2	A	10	122	2	C	6							
			123	2	B	8	122	2	F	0	123	2	B	8							
			124	2	A	10	123	2	D	4	124	1	A	5							
							124	1	A	5											C/O MAT 112, 122, C

CHAPTER FIVE

ALGORITHM AND PICTORIAL PRESENTATION

5.1 ALGORITHM

Algorithm can be defined as a set of finite sequence of instructions each of which has a clear meaning which can be carried out in a fixed order with a finite amount of effort and time to find the answer to a specific problem. In other words, Algorithm can be defined as a set of rules or procedures that must be followed in solving a particular problem.

However from the above definition of algorithm, there are some conditions that must be satisfied by the algorithm, the conditions are:

a. DEFINITENESS: Every instruction in the list or sequence of instructions must be clear and unambiguous. The algorithm should be precise.

b. FINITENESS: Algorithm should have a finite number of instructions and if we are to trace out the instructions of the algorithms, then in all cases the algorithm must terminate after a finite number of steps. It is expected that the instructions in the algorithm are arranged in the order in which each of the statements should be executed.

c. EFFECTIVENESS: Every instructions in the sequence must be sufficiently basic in producing the intended result when executed.

5.2 FLOW CHART

The flow chart is a means of visually presenting the flow of date through and information processing system. The operation performed within the system and the sequence in which they are performed. Thus a flow chart is a series of symbols each presenting a function in the program and connected to the next in a vertically down direction by flow lines.

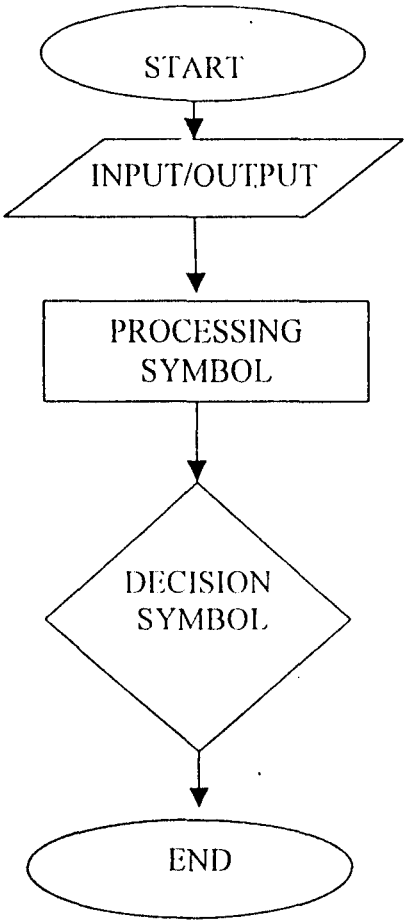
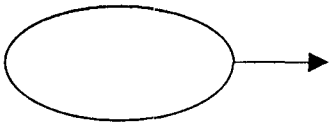


Figure 5.1 flow chart symbols and flow lines

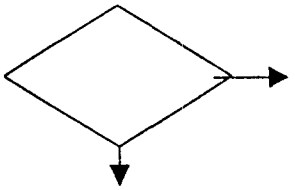
5.2.1 FLOW CHART SYMBOLS



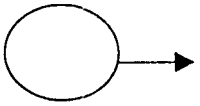
TERMINAL SYMBOL: Terminal symbols are used at the beginning and end of the flow chart.

INPUT/OUTPUT SYMBOL: It is used whenever information is to be input to the computer or output from the computer

PROCESSING SYMBOL: Is used wherever dated are to be processed to produce the output from the computer.



DECISION SYMBOL: The purpose of the decision symbols is to determine a future courses of action. For any decision there must be alternatives and a definite courses of action for each alternative.



CONNECTORS SYMBOL: Connectors are flow chart symbols that are used to connect remotes portions of a flow chart with one another without using long or crossing line to avoid making a complex diagrams.

5.3 CONCLUSION AND RECOMMENDATION

It should be noted that the old system of record keeping at the Adamu Augie College of Education, Argungu has been identified to have problems, among the problems are the high degree of errors, inefficiencies and delay in the computation and release of examination results. Furthermore, there occur the problems of lack of space for storing and retrieving examination results in the institution.

In order to be able to avoid such problems a new method to take care of such problems and the new system is computerized system, which can compute, release and stored all the examination records.

Furthermore to change from the old system to the new system which is the computerized method, there is every need to know which method of changeover will suit the prevailing circumstances out of the four types of changeover mentioned in the last chapter.

However, the method we recommend is the parallel changeover (running), so as to allow the gradual phasing out of the old system with emphasis on the new system.

Having identified all or most of the problems associated with the old system of student examination and records keeping in the College and with the ever increasing number of students enrolment, which amount to large

volume of data, lack of security of records and most importantly, space for storage, we recommend this computerized system of computation of examination and record keeping designed for the Adamu Augie College of Education, Argungu, Kebbi State.

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ADAMU AUGIE COLLEGE OF EDUCATION, ARGUNGU.

SCHOOL: __________ SEMESTER: __________ SESSION: __________

COURSE: __________ COURSE TITLE: __________

CREDIT UNITS: __________

RESULT SHEET

ADM. NO	NAME	EXAMS SCORE 60%	C.A. SCORE 40%	TOTAL SCORE	LETTER GRADE	GRADE POINT

NAME OF STUDENT	COURSE OFFERED	UNITS THIS SESSION,	GP THIS SESSION,	GPA THIS SESSION,	UNITS TO DATE	GP TO DATE	GPA TO DATE

ADM.NO	NAME OF STUDENT	COURSE OFFERED	UNITS THIS SESSION	GP THIS SESSION	GPA THIS SESSION	UNITS TO DATE	GP TO DATE	GPA TO DATE	REMARKS
/492/99/[illegible]	KABIRU ABUBAKAR	EDU 311-1-D2 ISS 311-2-C-6 312-2-C-6 312-2-D-4 313-2-D-4 313-2-C-6 314-2-C-6 315-1-B-1 321-2-C-6 321-2-B-2 322-2-E-2 322-2-C-6 323-2-C-6 323-2-C-6 324-6-B-24 212-2-B-8 PCT 311-1-B-4 PES 325-1-B-4 312-2-B-8 321-2-C-6 322-1-C-3 324-1-B-4	42	124	2.95	126	391	3.10	Pass
[492[99/KB									

ADAMU AUGIE COLLEGE OF EDUCATION ARGUNGU
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1	2124	AMINU, S. K.	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	Total unit	49	
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			121	2	B	8	114	2	B	8	121	2	D	4	105	2	C	6			
			122	2	C	6	121	2	A	10	122	2	C	6							
			123	2	B	8	122	2	B	8	123	2	B	8							
			124	2	A	10	123	2	D	4	124	1	A	5							
							124	1	A	5											PASS

S/No	Reg., No.	NAMES	EDUCATION				MATHEMATICS				GEOGRAPHY				GSE						REMA RKS
2	2234/00/KB	AHMED D A	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	CODE	UNIT	GRD	GP	Total unit	49	
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			121	2	B	8	114	2	B	8	121	2	D	4	105	2	E	2			
			122	2	C	6	121	2	F	0	122	2	C	6							
			123	2	B	8	122	2	B	8	123	2	B	8							
			124	2	A	10	123	2	D	4	124	1	B	5							
							124	1	A	5											C\O MAT 121, GEO 113

S/No	Reg., No	NAMES	EDUCATION				MATHEMATICS				GEOGRAPHY				GSE						REMA RKS
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			111	2	A	10	111	2	A	10	111	2	B	8	101	1	A	5	Total GP	152	
			112	2	E	2	112	1	F	0	112	2	C	6	102	2	B	8	GPA	3.10	
			113	2	C	6	113	2	C	6	113	2	F	0	103	3	E	3			
			121	2	B	8	114	2	B	8	121	2	D	4	105	2	C	6			
			122	2	C	6	121	2	A	10	122	2	C	6							
			123	2	B	8	122	2	F	0	123	2	B	8							
			124	2	A	10	123	2	D	4	124	1	A	5							
							124	1	A	5											C.O MAT 112, 122, GEO 113