

COMPUTERIZATION OF EXAMINATION RESULTS
A CASE STUDY OF COLLEGE OF AGRICULTURE, ZURU.

BY

ABUBAKAR MAHMUD MANGA
(PGD/MCS/2000/2001/1037)

A project work submitted to the Department of
Mathematics/Computer Science, in partial fulfillment of the
requirement for the award of a Post Graduate Diploma in
Computer Science of the
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.

APRIL, 2002.

APPROVAL PAGE

This is to certify that this project was undertaken and written by Abubakar Mahmud Manga for the award of Postgraduate Diploma in computer science.

Sign _____

Prince R.O. Badmus

Project supervisor

_____ Date

Sign _____

Mr. L.N. Ezeako

Head of Department

_____ Date

Sign _____

External Examiner

_____ Date

DEDICATION

To Fauziya and Aisha, and their loving mother.

ABSTRACT

A project is written to computerize the examination results of college of Agricultural Zuru. The aim of which is to study, review and analyze the existing system with a view to designing a new and computerized system. Problems and constraints of the system will be identified and solutions proffered in the new system. A computer program shall be written, tested and implemented to solve the identified problems in examination grading.

ACKNOWLEDGEMENT

All thanks and praises be to Allah, the most beneficent, the most merciful, for the giving the health, benefit and knowledge that enabled me undertake this project.

My greatest thanks and appreciation goes to my project supervisor, Prince Badmus (any other prince is a counterfeit, to me), for his untiring guidance during the course of writing this project. The individual and collective effort of all my lecturers is being appreciated too. Worthy of mention are Mal. Isah Audu, and Mallam Danladi Hakimi who gave some useful advice to this project.

My colleagues and course mates are being thanked for the friendly gestures and motivation. I shall be indebted to my friends Ma. Umar O. Abdullahi and Aliyu Mu'azu for doing what they did in the course of this project.

This acknowledgement will not be complete without sincerely appreciating the support of my aged parents, all my brothers and sisters, my colleagues in the office and friends at home. I won't forget my late sister, Fati, whom I lost while under taking this PGD programme. May Allah bless all of you and continue to shower you with His mercies. Amen.

TABLE OF CONTENT

Title page	i
Approval page	ii
Dedication	iii
Abstract	iv
Acknowledgment	v
Table of contents	vi
CHAPTER ONE	
1.0 INTRODUCTION	1
1.1 Historical background of the college	1
1.2 Organizational structure of the college	3
1.3 Objectives of the study	4
1.4 Scope of the study	4
1.5 Limitations of the study	5
1.6 Definition of terms	5
CHAPTER TWO	
2.0 SYSTEM REVIEW	8
2.1 Introduction	8
2.2 Information searching	8
2.3 System procedure	9
2.4 Files and records keeping	13
CHAPTER THREE	
3.0 SYSTEM ANALYSIS AND DESIGN	14
3.1 Introduction	14
3.2 Problem identification	14

3.3	Proposed project feasibility	15
3.4	Cost-benefit analysis	16
3.5	System change over	17

CHAPTER FOUR

4.0	SYSTEM DEVELOPMENT	
4.1	Introduction	
4.2	Programming language chosen	
4.3	Features of the language	
4.4	Input specification	
4.5	Output specification	
4.6	General description of the program	
4.7	Program maintenance	

CHAPTER FIVE

5.0	CONCLUSION AND RECOMMENDATION	
	REFERENCES	
	APPENDIX	

CHAPTER ONE

1.0 INTRODUCTION

Institutions of learning set up systems of evaluating students to measure their learning standard attained. This evaluation, according to Lovegrove (1984), is conducted periodically to determine the extent, which the students have learnt what is expected of them in the subjects they are taught. The evaluation usually takes the form of tests and examinations. The tests and examination are 'scored' and 'graded' by the teachers. The grades are recorded and used at the end of the academic programme to evaluate the students' ability and capacity to acquire and apply the knowledge imparted on them.

Scoring and grading of examinations is very tedious and time-consuming exercise. Amahola (1984) stated that grading is an exercise of repetitive operation that needs accuracy, consistency and ability to handle large volume of work, a combination of which can best be minimized, according to French (1990) by the use of automating devices such as computers.

College of Agriculture Zuru is a higher institution of learning in Nigerian that manually grades student's examinations and records them for final assessment. A project is being proposed to study the steps involved in examination grading of the college, examine it and suggest ways by which the system can be automated by using computers.

1.1 HISTORICAL BACKGROUND OF THE COLLEGE

A farm training institute was established in Zuru in 1973 by the Former North Western State Government for training field assistants in

agriculture. This institutes was upgraded to a certificate awarding school of agriculture in 1977 to train village extension workers (VIEWS) and livestock assistants. Sokoto state edict No 34 of 1985 converted it to a College of Agriculture with full autonomy. It awards Diploma and train middle level manpower in the diverse fields of agriculture. The college was affiliated with Division of Agricultural Colleges of the Ahmadu Bello University Zaria. In 1989, the college sought for and got accreditation from the National Board for Technical Education for all programmes so as to gain credence and national recognition.

College of Agriculture Zuru is now wholly owned and financed by the Kebbi State Government, and offers ordinary National Diploma in Agricultural Technology, Animal Health and production, Forestry Technology, Home Economics and Management, and Agricultural Engineering Technology. It is also offer. Higher National Diploma in Agricultural Extension and Management, and Crop Production. Intermediate certificate courses are also offered in most of the programmes mentioned above. In addition the college run agricultural consultancy services and publishes a journal registered with international society of books (ISBN) for publication of academic research. The college has seven academic department such as sciences, general studies, agricultural technology, home economics, animal science, forestry and agricultural engineering. There are also administrative support units such as estate, registry, bursary, library and farm management.

1.2 ORGANIZATIONAL STRUCTURE OF THE COLLEGE.

The structure of the college is based on the offices handling various responsibilities for smooth running of academic and administrative activities of the college. The structure is shown on figure 1.1 and explained below.

- a- **Governing Council** - This is the supervising body appointed by the state government to oversee the activities of the college. It is headed by a chairman
- b- **Provost** - The chief executive and academic officer of the college. He is responsible for all executive functions of the college, as well, the chief accounting officer.
- c- **Deputy Provost**- is responsible to the provost and advises him on academic matters of the college.
- d- **Registrar**- The chief administrative officer of the college and is answerable to the provost on administrative matters. The registry is the secretariat of the college and consists of the following units -
Academic unit - headed by a deputy registrar and does the job of all academic coordination, planning, calendar, admissions, registration examination records and assessments. An academic officer, Siwes officer, record officers and clerks man it.

Administrative Unit- as headed by a deputy registrar. It deals with general administrative matters such as establishment, personnel, legal, informations and publications, security and students' affairs.

- e- **Academic Heads of Department** - These are academic supervisors of the college responsible to the Deputy Provost for academic schedules, lectures, examination, practical and assigning courses to lecturers etc.

- f- Other principal officers responsible to the provost include the Bursar as the accounting officer, the Internal Auditor, the Chief Librarian, Chief Estate Officer responsible for physical development and maintenance of college facilities and environment.

1.3 OBJECTIVE OF THE STUDY

This project is undertaken to computerize the examination grading system of the college of agriculture, Zuru. The main objective is to design a system that could assist in automating the examination grading and recording for the college. The specific aims are:

- i. To identify the problems in the existing system
- ii. To proffer solutions into solving the identified problems
- iii. Suggest new method for grading and recording examination results.
- iv. Test and implement the new method suggested
- v. Carry out a cost benefit analysis for the change over to new system

1.4 SCOPE OF THE STUDY

This project is carried mainly for the computation of the examination results of the college of Agriculture, Zuru. Although the procedure may be similar to other Diploma awarding institutions governed by NBTE, it should not be used for them as the methods are peculiar to the college. Department of agriculture engineering is to be considered for computerization. The methods and techniques can however be applied to other department.

1.5 LIMITATIONS OF THE STUDY

The project has limited itself to computerizing Diploma and Higher Diploma programmes only. Other programmes of the college, such as preliminary and certificate programmes, have different grading systems that are not similar to the ones considered, and therefore their inclusion will make the project complex and difficult to undertake within the time frame.

1.6 DEFINITION OF TERMS

Some terms that are specifically identified by this project used in the college's examination grading are

- i. Academic session- a calendar period that represents one year of academic exercise.
- ii. Semester- a term period that is specified to accomplish a level of learning within a session. There are two semesters in a session.
- iii. Coursework- assessment exercises that are continuous, used to evaluate student's performance during the semester.
- iv. Examination- an assessment exercise conducted at the end of a semester to evaluate a student's overall performance.
- v. Grades- letters assigned to certain ranges of student's scores obtained in every course within a semester.
- vi. Grade points- values assigned to each grade obtained by a student
- vii. Credit unit- values assigned to courses based on their weights in a programme
- viii. GPA- grade points average, the average grade points obtained for all the registered courses in the department.

- ix. CGPA- cumulative grade points average, average of grade points over a certain number of semesters.
- x. GRPA- graduating point average, average of grade points in a complete academic programme that determines a student's graduation.
- xi. Carry over course- a course that was failed and registered for a second trial in the corresponding semester at the subsequent session.

GOVERNMENT COUNCIL

PROVOST

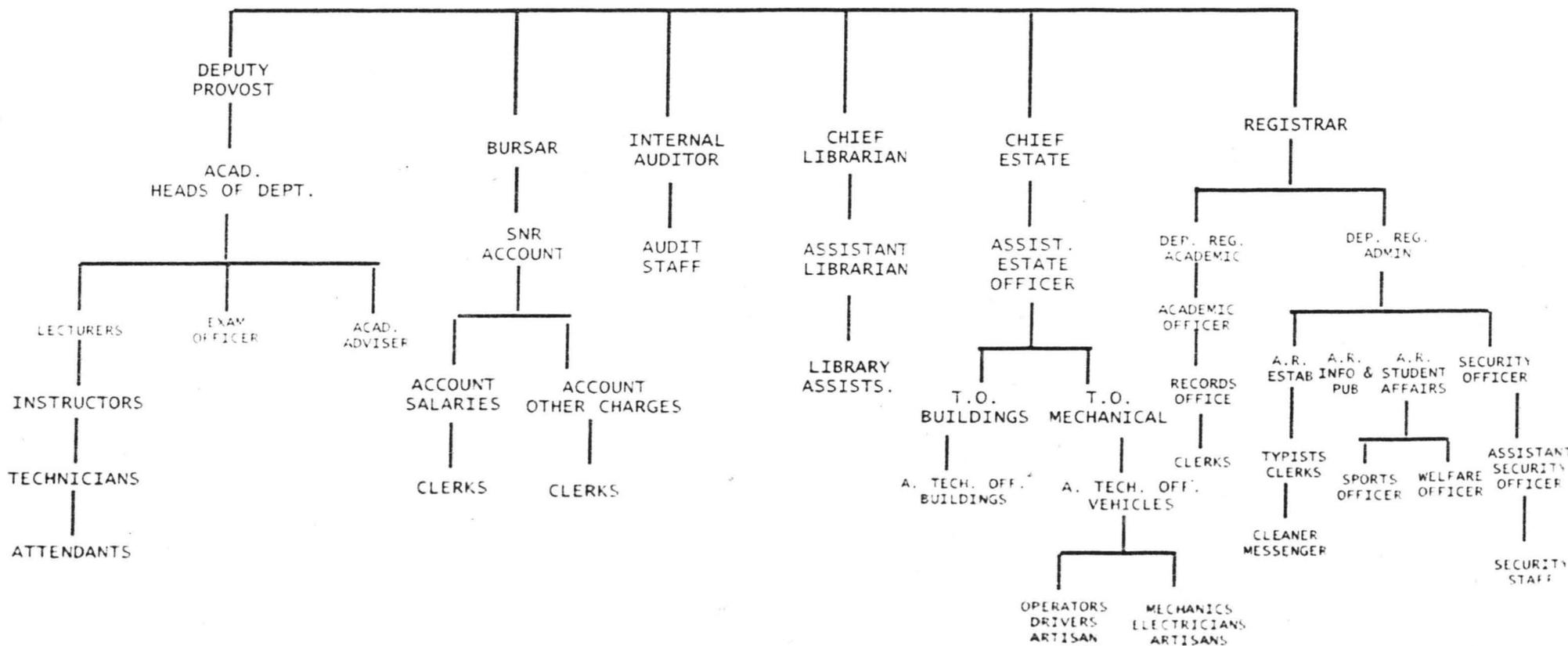


FIG. 1.1 ORGANIZATIONAL CHART OF COLLEGE OF AGRICULTURE, ZURU

CHAPTER TWO

2.0 SYSTEM REVIEW

2.1 INTRODUCTION

This chapter mainly takes an overview of the process involved in the existing examination grading system of the college of Agriculture, Zuru. The procedure will be carefully analyzed with a view of identifying problems and weakness of the existing system.

2.2 INFORMATION

In undertaking this project, searching for information formed the basis for studying the existing system used by the college in grading of examinations. The methods used in sourcing information are:

Record Searching- a manual titled uniform grading system for polytechnics and similar level institutions in Nigeria prepared by the national board for technical education (NBTE) is used by the college as guideline for grading student's examination. However, some slight amendments were made by the college's academic office in another document titled 'students semester examination grading and recording'.

Interview- interviews were conducted with the college's academic officer, and his staff to find out the procedure for implementation of the rules in the documents read above.

Participation and Observation – the project writer, being an academic staff of the college and at one time examination officer, participated in grading of student's examination in the college. Observations were also

done to study the techniques involved in the grading system where participation was not possible.

2.3 SYSTEM PROCEDURE

The procedure for determining grades of examination results in the college of Agriculture, Zuru runs through from registration of students into any diploma or higher diploma programme to the student's successful completion of the programme.

- a. **Course Registration**- At the beginning of an academic session each student registers for the courses he is to undertake for the two semesters in a session. These courses are filled in a 'course registration form' (Reg. 001) as guided by departmental academic advisers. Every registered course has a corresponding 'credit unit' attached to it. A student is allowed to register a minimum of 21 units and a maximum of 24 units in a semester. The filled forms are submitted to the academic office where they are sorted and filed according to department and level. The forms are used as the basis for determining students academic performance and grading per semester and, subsequently, at the end of his academic programme.
- b. **Methods of Assessment**- Every student is assessed in two methods; by individual course lecturers.
 - i. **Course work**- this method is continuous throughout a semester. It includes tests, home works, class work, quiz or any kind of assessment used by the course lecturer to measure student's performance in the class. This assessment has a maximum of 40 marks

- ii. Semester Examination- an examination is conducted in the courses each student registers for at the end of every semester. The examination has maximum of 60 marks.

C. Grading of Assessment- each student's total assessment in a course is graded by assigning letter grades to the score and allocated 'Honours Point' as specified by the college's grading system as shown below

SCORE	LETTER GRADE	HONOURS POINT
80-100	A	4.0
70-79	AB	3.5
60-69	B	3.0
50-59	BC	2.5
40-49	C	2.0
30-39	CD	1.5
20-29	D	1.0
10-19	E	0.5
0-9	F	0.0

- d. Determining Grade Points (GP) and Grade Point Average (GPA) – Grade point for every course is obtained by multiplying the credit units of the course and the honours point obtained in the assessment

$$GP = C.U. \times H.P$$

The grade point average (GPA) is obtained by dividing the total grade points for all registered courses in the semester by the sum of credit unit registered in the semester

$$G.P.A. = \frac{\sum_{i=1}^n GP}{\sum_{i=1}^n c.u}$$

Where: GP= Grade Point
 CU= Credit Unit
 HP= Honours Point
 G.P.A.= Grade Point Average
 i = initial (first) registered course
 n = final (last) registered course.

Students' grade, honour point and grade point are determined by the course lecturers and returned to department examination officers in a form ACA 002. While the grade points average is determined by the examination officer and returned to the academic office in a form ACA 003.

e. Cumulative Grade Points Average (CGPA): the cumulative grade point average refers to the grade point average over a number of semesters (2-3). It is obtained by adding the grade points obtained in the semesters, and dividing by the total credit units registered in the semesters.

$$CGPA = \frac{\sum_{j=1}^i GP_j}{\sum_{j=1}^i CU_j}$$

Where- i= number if registered
 j = semester in consideration.

f. Grading Points Average (GRPA) – The National Diploma (ND) or the Higher Diploma (HND) of the college of Agriculture, Zuru lasts for a minimum of 4 semesters. The fourth semester examination is the terminal examination that is externally moderated. It therefore carries

50% of the total assessments, while the CGPA of the other semesters carries the remaining 50% of the total assessments, while the CGPA of the other semesters carries the remaining 50%. The graduating point average is obtained by finding the average of a student's CGPA over the past semesters and the GPA of the 4th semester.

$$\text{GRPA} = \frac{\text{CGPA (3 semesters)} + \text{GPA (4th semester)}}{2}$$

g. Classifying overall performance results – a student's overall performance at the end of his academic programme is classified based by the GRPA he obtains. The classification is as follows-

GRPA	CLASS OF DIPLOMA
3.5-4.0	Distinction
3.0-3.49	Upper credit
2.5-2.99	Lower credit
2.0-2.49	Pass
Below 2.0	Fail

Determination of a student's CGPA, GRPA and classification of overall performance is done by the academic office. At the end of an academic programme the academic office decides whether the student has successfully graduated or not. It also issues statement of results and certificates to successful students.

h- **Carry Over Courses**- if a student scores less than 40 in his assessment in any course, he has failed the course. He must register for the course in the corresponding semester in the next session before he is allowed to take the next higher-level course. In filling form Reg. 001 he is to indicate the course(s) being carried over and the credit units. In

computing his result at the end of the semester, his new result for the carried over course is used to determine his GPA. The failed result also appear in the list if courses he had registered for in his programme.

2.4 FILES AND RECORDS KEEPING

At the end of a registration exercise, duly filled and signed registration forms (Reg. 001) are kept in student's record files for each students. These files are sorted according to level and department in the academic office. Semester results submitted to the academic office from the department in form ACA 003 are entered into the individual student's forms in his record file, from which his CGPA and GRPA are determined. The collected forms ACA 003 are also sorted in separate file jackets based on semester/sessions.

The process of collecting, sorting, computing and recording of student's academic record is all handled by a single person, for the whole college in the academic office.

CHAPTER THREE

3.0 SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION

In this chapter an attempt will be made to consider a new system of examination results for college of Agriculture, Zuru so that it will overcome the problems identified. The feasibility of the new system shall be examined and its benefits identified.

3.2 PROBLEM IDENTIFICATION

Some of the problems identified in the studying of the existing manual system of grading in the college are

- i. **Inaccuracy** – the system is liable to many errors. As different persons are involved at different stages of grading the source and nature of the errors is difficult to trace and rectify.
- ii. **Inconsistency**- results submitted by various departments may vary slightly from each other due to alterations or deviations from standards. Also results may vary from registration information provided in the student's form Reg. No 001.
- iii. **Tedious and boring**- the task is repetitive in nature thus, making it tedious and boring, particularly in the academic office, where a single person is involved in the process.
- iv. **Time consuming**- reasonable amount of time is taken in the whole process. This leads to late compilation and release of results, and a long delay in releasing statements of results or certificates to graduating students.
- v. **Unreliable storage**- lost of files or documents is a common feature in the existing system. Much storage space is also consumed to

contain large volumes of documents in file jackets and file cabinets.

3.3 PROPOSED PROJECT FEASIBILITY

The feasibility of a new system of examination result for the college of Agriculture, Zuru is being examined in the following context.

- i. **Technical Feasibility**- grading and computation of examination results in the college has the characteristics of handling large volume of scores from the large number of student, need for accuracy, speed requirement, repetitive in nature, and the use of common input data in very semester or session. These characters make it technically suitable for automation of the system-using computer. Computers will be used in processing, storage and retrieval of results in an accurate and timely manner suitable to the process.
- ii. **Operational Feasibility**- in adopting a new system, the structure and procedure of the old system will not be altered completely. Changes will, however, be made in the recording of data in the computer. The new system will also start from student's registration where data will be supplied by filling the registration forms. The data will include name, registration number, department, programme of study, courses registered and their credit units. These data are entered into the computer and stored in a master file for every student. At the end of every semester coursework and examination scores for every student are collected by examination officers and entered into the files. A computer programme is invoked from a 'transaction file' to read and process data in the master files, and then copy the output back into the

master files. The outputs can be printed in the format needed for submission to the college's academic council for approval or the academic office for storage or award of certificates.

- iii. **Economic Feasibility-** the propose system shall make use of three sets of computer systems, and their peripheral devices, to serve all the departments in the college. This number can conveniently handle the large volume of data in a reasonable time and still allow for other college activities to be carried out effectively. The use of the system at the department level also eliminates the concentration of job to the academic office and thus eliminates drudgery, time consumption and errors. The academic office is left only with the responsibility of issuing statement of results and certificates thus with enough time for other administrative duties.

3.4 COST -BENEFIT ANALYSIS.

The change from old to new system of being proposed has to bear some costs to the college. These costs are as a result of acquisition of equipment and their installation, as well as operational costs. The details of the costs that will incur for the take of the new system are

- a. Purchasing costs- this is the cost of purchasing equipment needed for the new system it include.

S/NO	ITEM	QTY REQD	COST (N)
1.	Computer system	3	180,000.00
2.	Printers	3	90,000.00
3.	U.P.S.	3	60,000.00
4.	Voltage regulators (stabilizers)	3	15,000.00
5.	Software (programme) required	-	45,000.00
6.	Programme maintenance	-	20,000.00
7.	Installation	-	10,000.00
8.	System Analyst (four weeks)	-	50,000.00
9.	Training of operators	-	40,000.00
TOTAL PURCHASING COST			<u>510,000.00</u>

b. Running cost- the running or operational costs of using computers in the new system depend on the period of use of the computers. This is based on the number of students admitted and the courses registered by the students in every semester. Generally, the running costs includes cost of stationeries, power consumed, alternative power supply, maintenance and other cost of other consumables (such as disks, toner e.t.c.).

The benefits that stand to be gained as a result of adopting the new system are.

- i. Ensure and maintain accuracy of examination grades
- ii. Obtaining results in a timely fashion
- iii. Reduce or eliminates drudgery involved in the old system.

The new system will be faster, more efficient and effective. It will also create enough time for effective management and control of academic activities in the college. The computers can also be utilized for other tasks in the college such as academic planning, examination question papers preparation and recording, e.t.c. if the necessary software for these needs are installed.

3.5 SYSTEM CHANGEOVER

Changeover from an old system to a new one may be achieved in a number of ways. The most common are-

- i. **Direct Changeover-** this is the complete replacement of the old system to the new, in one move. It is a bold move, which should be taken only when everything is planned, system tests and training

is comprehensive, and the changeover itself planned in detail. This method is potentially the least expensive but the most risky.

- ii. **Parallel Running-** this means processing current data by both old and new systems to crosscheck results. The old system is kept and co-operational until the new system has been proven for at least one life cycle, using live data in the real operational environment. This method allows the result of the new and system be compared before acceptance by the user.
- iii. **Pilot Running-** this is similar to parallel running, but data is processed for a part of the system with the new system and new results compared with the old system obtained from the part(s) not processed. It is not destructive as parallel operation since timing is critical. It is considered a more practical form of changeover for organizational reasons.
- iv. **Stage Changeover-** this involves a series of limited-size direct changeovers, the new system being introduced piece-by-piece. A complete part, or logical section is committed to the new system while the remaining parts or sections are processed by the old system only when the selected part running satisfactory in the reminder transferred. This method reduces the risk inherent in a direct changeover of the whole system and enables the analyst and users to learn from mistaken made as the changeover progresses.

The changeover method proposed for this project is the stages changeover. The department of Agricultural Engineering will be used for the first stage based on their few students' population. The changeover will start from a set of new intake to the department, their examinations graded and classified in every semester until graduation (a life circle).

CHAPTER FOUR

4.0 SYSTEM DEVELOPMENT

4.1 INTRODUCTION

In this chapter a programming language will be chosen for computerizing the examination grading system designed. A code will be generated for the language and input and output specified. The code will be tested using test data and output generated will be compared with the old system.

4.2 PROGRAMMING LANGUAGE CHOSEN

The programming language that is used for this project is Visual Fox pro. This programme is data base management system software that works Foxpro. This programme is data base management system software that works with windows operating system to compute data. It is a programme that operates with three distinctive modes.

- i. Works interactively, using menu options and dialog boxes to give commands.
- ii. Types commands one at a time in the command window
- iii. Write and add programme code to menus and forms to build on application that can be run by users who don't know the language.

To use this language however, there is a need to master all the three modes of operation. Their combination is necessary during the design prototyping and testing stages of application development.

4.3 FEATURES OF THE LANGUAGE

The features of visual language being used for this project are-

- i. It has database files that are formed using characters and numeric fields. The files are in form tables, the table names being capitalized.
- ii. The programme code, commands and screen messages appear in 'italic type' in mono space typeface
- iii. Place holders are used to indicate places in commands where the user fills in his own specific information.
- iv. Command sequences are also available to allow several selections from the menu. Also 'shortcut' keys are available to give direct access to commands without going through the 'pulldown' list

4.4 INPUT SPECIFICATION

Information provided by the student in his course registration forms are stored in a database file created for him. The input data that will be used by the program are course unit, coursework, and examination score.

4.5 OUTPUT SPECIFICATION

The output of the program will display total score, Grade, Honours Point, Grade points, remarks, GPA, CGPA, GRPA and of Diploma obtained. These information are reflected back to the database file.

4.6 GENERAL DESCRIPTION OF THE PROGRAM

The program is designed and written using commands and features that are available in Visual Foxpro. The code generated for this program is shown in Appendix A.

To access the program do the following-

- At the start prompt highlight programs and enter into M.S. Visual studio
- Click on M.S. Visual Foxpro. This will take you into the Foxpro environment
- In the dialogue box type 'set defa to C:\rest' and press enter
- Press Ctrl O to open the database
- Double click the dbf to open it. This opens the dialogue box
- Click on the document tab and it will display 'frm 2'
- Click on it, it will display buttons
- Click the run button to run the program.

4.6 PROGRAMME MAINTENANCE

The code generated for this program is stored in a database file, which can be accessed, in a Visual Foxpro environment. The program can be maintained by taking the following measures.

- Adhere to all hardware maintenance procedure
- Ensure no bad memory or bad sector in the hard disk
- Avoid empty or blank records in the database file
- Exit the program through the normal process when not in use.

The results obtained can be compared with results of the other departments using the old system. The benefits gained can be used as a basis for computerizing other departments in the college.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

Examination scores, grading, computation and recording is a vital tool for evaluating the performance of student's to qualify them for awards of diploma's or higher diplomas of the college of agriculture, Zuru. This project identified the problems of the existing system in the college and designed a computerized new system. A computer program had been written and tested for the new-system and a method of changeover proposed. The following recommendations are to be considered for effective performance of the new system.

- The new system should be implemented and operators well trained as suggested in the project.
- Adequate maintenance measures, both preventive and corrective should be put in place and carried out regularly.
- Access privileges and system security should be built against unauthorized persons.
- Consideration should be given to setting up a local area network (LAN) to link the computers in the departments and the academic office to facilitate adequate movement of data and information.

REFERENCES

- Amahala, B.M. (1984)** 'A teacher in the classroom'. In foundation for education by B.O. Ukeje (Editor). Ethiopia publishing. Benic city. pg. 251.
- Avison, D.E. (1985)** 'Information systems development: a database approach' Blackwell scientific development. London. Pp. 72-79
- Ayo, C.K. (1994)** 'Computer literacy (operation and appreciation). Alamukitau press Ibadan. 1st Edition pp. 52-98
- Badmus, R.O. (2001).** 'Systems Analysis and Design.' Unpublished work, Federal University of Technology, Minna. Pp. 12-43
- French, C.S. (1990)** 'Computer Science'. DP publications Ltd London. Pg. 535
- Lovegrove, M.N. (1984)** *Evaluating the results of learning* 'In foundation for Education by B.O. Ukeje (Editor). Ethiopia publishing. Benin city pp. 206 -209
- NBTE (1989)** 'A Uniform Grading System for Polytechnics and similar Level Institutions'. NBTE Kaduna. Unpublished report
- Prince, W.T. (1995)** 'Introduction to Computer Data Processing' CBN College publishing New York. 3rd Edition pg. 271
- Sommerville, I. (1995)** 'Software Engineering' Addison- Wesley Publications Co, Lnc 2nd Edition pg. 167-175
- Stair, Ralph M. (1986)** 'Computers in today's world'. Irwin Inc. Illinois pp. 360-376

APPENDIX A - CODE GENERATED

```
sele A
use t1
sele B
use t2
sele B
mcsass = 0
mexam = 0
mtot = 0
mgrpnt = 0

goto top
do while .not. eof()

store regn to mregn

stor grpnt to mgrpnt
store csass to mcsass
store exam to mexam

mtot = mcsass + mexam

repl tot with mtot
if mtot >= 80
  repl grade with "A"
  repl remark with "Pass"
  repl hpts with 4.0
  repl grpnt with csunit * hpts
endif

if mtot >= 70 .and. mtot <= 79
  repl grade with "AB"
  repl remark with "Pass"
  repl hpts with 3.5
  repl grpnt with csunit * hpts
endif

if mtot >= 60 .and. mtot <= 69
  repl grade with "B"
  repl remark with "Pass"
  repl hpts with 3.0
  repl grpnt with csunit * hpts
endif
```

```
if mtot >= 50 .and. mtot <= 59
  repl grade with "BC"
  repl remark with "Pass"
  repl hpts with 2.5
  repl grpnt with csunit * hpts
endif
```

```
if mtot >= 40 .and. mtot <= 49
  repl grade with "C"
  repl remark with "Pass"
  repl hpts with 2.0
  repl grpnt with csunit * hpts
endif
```

```
if mtot >= 30 .and. mtot <= 39
  repl grade with "CD"
  repl remark with "Fail"
  repl hpts with 1.5
  repl grpnt with csunit * hpts
endif
```

```
if mtot >= 20 .and. mtot <= 29
  repl grade with "D"
  repl remark with "Fail"
  repl hpts with 1.0
  repl grpnt with csunit * hpts
```

```
endif
```

```
if mtot >= 10 .and. mtot <= 19
  repl grade with "E"
  repl remark with "Fail"
  repl hpts with 0.5
endif
```

```
if mtot >= 0 .and. mtot <= 9
  repl grade with "F"
  repl remark with "Fail"
  repl hpts with 0.0
  repl grpnt with csunit * hpts
endif
```

```
skip
enddo
```

```
sele A
goto top
do while .not. eof()
stor regn to mregn
```

```
sele B
sum csunit for regn = mregn to mscunit
sum grpnt for regn = mregn to mpoint
```

```
sele A
repl totunit with mscunit
```

```
repl average with mpoint/mscunit
*repl ttotal with mtot
*if mpoint = 0
  *repl average with mpoint
*else
*repl average with mtot/mcount
```

```
skip
enddo
*close all
```

```
*close all
```

```
close all
do form fatih
```

4/12/02

APPENDIX B.

Generating Student Results Report

Regn: 100

Name: John

Surname: Faith

<u>Sn</u>	<u>Cstit</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
5			0.00	0	0.00	0.00	F	0.00	Fail	0		
4	Sen	005	3.00	35	60.00	95.00	A	12.00	Pass	4	100	1st
3	Phy	003	4.00	40	60.00	100.00	A	16.00	Pass	4	100	1st
2	Blo	002	3.00	30	60.00	90.00	A	12.00	Pass	4	100	1st
1	Chem	001	2.00	31	34.00	65.00	B	6.00	Pass	3	100	1st

Total Unit **Total Grade Points** **GPA**
 12.00 46.00 3.83

Regn: 200

Name: Kemi

Surname: Faith

<u>Sn</u>	<u>Cstit</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
			0.00	0	0.00	0.00	F	0.00	Fail	0		
3	Rmm	111	3.00	40	35.00	75.00	AB	12.00	Pass	4	200	1st
2	Rmm	444	5.00	35	55.00	90.00	A	20.00	Pass	4	200	1st
1	Yoru	333	4.00	40	36.00	76.00	AB	16.00	Pass	4	200	1st

Total Unit **Total Grade Points** **GPA**
 12.00 48.00 4.00

Regn: 300

Name: Sola

Surname: Peace

<u>Sn</u>	<u>Cstit</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
			0.00	0	0.00	0.00	F	0.00	Fail	0		
4	Mat	120	2.00	33	44.00	77.00	AB	8.00	Pass	4	100	1st
3	Cpt	233	4.00	40	60.00	100.00	A	16.00	Pass	4	100	1st
2	Wkc	888	3.00	36	50.00	86.00	A	12.00	Pass	4	100	1st
1	Tcd	999	2.00	34	35.00	69.00	B	6.00	Pass	3	100	1st

Total Unit **Total Grade Points** **GPA**
 11.00 42.00 3.82

Regn: 400

Name: Mark

Surname: Mat

<u>Sn</u>	<u>Cstlt</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
			0.00	0	0.00	0.00	F	0.00	Fail	0		
4	TTT	409	3.00	23	44.00	67.00	B	9.00	Pass	3	300	2nd
3	IOK	444	3.00	40	56.00	96.00	A	12.00	Pass	4	300	2nd
2	YUO	565	2.00	12	60.00	72.00	AB	8.00	Pass	4	300	2nd
1	Rtd	765	3.00	40	23.00	63.00	B	9.00	Pass	3	300	2nd

Total Unit **Total Grade Points** **GPA**
 11.00 38.00 3.45

Regn: 500

Name: Kunle

Surname: Adeniji

<u>Sn</u>	<u>Cstlt</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
3	math	003	3.00	24	50.00	74.00	AB	12.00	Pass	4	100	1st
2	Eng	002	2.00	30	24.00	54.00	BC	6.00	Pass	3	100	first
1	Physics	001	3.00	30	40.00	70.00	AB	12.00	Pass	4	100	first

Total Unit **Total Grade Points** **GPA**
 8.00 30.00 3.75

Regn: 500

Name: Mal Hak

Surname: Danladi

<u>Sn</u>	<u>Cstlt</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
			0.00	0	0.00	0.00		0.00		0		

Total Unit **Total Grade Points** **GPA**
 0.00 0.00 ...

APPENDIX

Generating Student Results Report

Regn: 600

Name: Mal. Hak

Surname: Danladi

<u>Sn</u>	<u>Cslit</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
2	Mat	002	2.00	24	50.00	74.00	AB	8.00	Pass	4	100	1st
1	Eng	001	3.00	30	40.00	70.00	AB	12.00	Pass	4	100	1st
Total Unit			5.00	Total Grade Points		20.00	GPA		4.00			

Regn: 100

Name: John

Surname: Bidemi

<u>Sn</u>	<u>Cslit</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
3	OED	333	2.00	23	50.00	73.00	AB	8.00	Pass	4	100	1st
2	Rem	222	3.00	34	52.00	86.00	A	12.00	Pass	4	100	1st
1	Mat	123	2.00	23	59.00	82.00	A	8.00	Pass	4	100	1st
Total Unit			7.00	Total Grade Points		28.00	GPA		4.00			

Regn: 700

Name: James

Surname: Abobby

<u>Sn</u>	<u>Cslit</u>	<u>Cscode</u>	<u>Csunit</u>	<u>Csass</u>	<u>Exam</u>	<u>Tot</u>	<u>Grade</u>	<u>Grpnt</u>	<u>Remark</u>	<u>Hpts</u>	<u>Level</u>	<u>Semter</u>
3	QWT	335	2.00	23	56.00	79.00	AB	8.00	Pass	4	300	1st
2	EET	331	3.00	40	34.00	74.00	AB	12.00	Pass	4	300	1st
1	Rtc	333	3.00	35	45.00	80.00	A	12.00	Pass	4	300	1st
Total Unit			8.00	Total Grade Points		32.00	GPA		4.00			

APPENDIX C - INPUT FORM.

Microsoft Visual FoxPro

Input Form

ID: Name:
 Surname: Program:
 Course: Hours:
 Amount:

Serial	Course Code	Course Title	Credits	Level	Prereq	Exam	Do.	Grade	Sp.	Grade
1st	333	Rtc	3.00	300	35	45.00	80.00	A	4	12.0
1st	331	EET	3.00	300	40	34.00	74.00	AB	4	12.0
2nd	335	QWT	2.00	300	23	56.00	79.00	AB	4	8.00

Microsoft Visual FoxPro

APPENDIX D - MAIN MENU

