COMPUTERIZATION OF STUDENT EXAMINATION RECORDS

A CASE STUDY OF GEOLOGY DEPARTMENT, FUT, MINNA

BY

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PGD/MCS /1999/2000/906

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SEPTEMBER 2001

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

SEPTEMBER 2001

CERTIFICATION

This is to certify that YISA, AUDU HADIZA PATIENCE Carried out this project work (PGD/MCS/1999/2000/906) in the department of Mathematics/Computer Sciences, School of Science and Science Education, Federal University of Technology, Minna, Niger State.

MALLAM ISAH AUDU
SUPERVISOR

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DR. S.A. REJU
HEAD OF DEPARTMENT

SIGNATURE AND DATE

EXTERNAL EXAMINER

SIGNATURE AND DATE

DEDICATION

This project work is dedicated to God Almighty and my two very special brothers ABDULRAHAMAN V. AUDU and ABUBAKAR S. AUDU my pillar of strength for their moral support and inspiration. I am forever indebted to you both.

ACKNOWLEDGEMENT

Glory, honour and adoration to Almighty God for his steadfast love, mercies and presence in my life from the beginning to this present moment. He saw me through all the obstacles and I am ever grateful to you.

I have found the critical comments by Mr. ISAH AUDU who is my Supervisor on the entire project very helpful. His suggestions and positive criticisms have enabled me to write this project along the procedures that are more acceptable to both computer programmers and specialists in the field of computer. To him I owe much gratitude.

I am grateful to the departmental examination officer of Geology department, lecturers of Mathematics/Computer department through whose kind help and permission I have been able to obtain and use some of the many information used in this program.

My sincere thanks are due to my mother and husband for their invaluable support throughout my educational career.

I also acknowledge with thanks the assistance given me by the following people for their contributions towards making this program a success. They include Shola, Juwon, Deola and my colleague Abdulrahaman Suleiman who one way or the other were of great assistance.

I will ever remain grateful to you all.

ABSTRACT

This project is based on the computerization of student examination records and the purpose is simply to show the computer as a valuable tool of the department. The computerization of students examination record sets out to find a more effective, efficient, well organized, faster, reliable and a more accurate means of compilation of student examination records.

A number of problems are associated with the existing manual system. The project focuses on how best computerized system can be used to solve some of these problems, which are usually encountered with the existing manual procedure.

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CHAPTER ONE

GENERAL INTRODUCTION

1.0 INTRODUCTION

Since the darn of ages, numbers and data have been calculated and analyzed. More than five (5) thousand years ago, the Chinese and Egyptians used Mathematics to solve problems related to commerce and agriculture. Relying on manual calculations, they were able to devise calendars that predicted the current time to plant their fields and harvest their crops.

For thousand of years, calculations and data analysis continued to be done by hand. One can only marvel at these achievements. For instance, Johannes Keplers's law governing the motion of plants around the sun was the result of 40 years of calculations. In his diary, Kepler complained of individual calculation taking as long as 80 hours. However, in the last decade, the impact of computers be it the Mainframe, Mini, or Microcomputer has permeated all sectors of calculations and manipulations. Therefore the tedious calculations that takes many able bodied men, many hours to calculate can now be done with ease with the rise of computers in every facet of life which lead to the writing of an application program for students examination records, a case study of the Geology Department of Federal University of Technology, Minna.

1.1 HISTORICAL BACKGROUND OF THE DEPARTMENT

The Geology department of the Federal University of Technology, Minna was established at the inception of the University in 1988. The Geology department was one of the first few departments that were established as a pioneer department in the University. The department was established under the School of Science and Science Education. The department at the inception was established to train suitable qualified students as Geologists. To meet the demand of these category of professionals in the oil industries, hydro industries, academics, exploration and prospecting industries.

Mr. P. D. SHEKWOLO a Hydrogeologist, established the Geology department at inception with one registered student in 1988. Dr. A. P. Ajibade a Structural Geologist and Dr. S. P. Braid, a Sedimentologist, subsequently joined him. Together the trio piloted the affairs of the department with an annual increase in its academic staff strength, Non-academic staff and student enrollment.

As of the year 2000 the department can boast of having graduating professionals in the field of Geology currently serving in the relevant industries in the country.

1.2 OBJECTIVES OF THE STUDY

The department maintained the following records:-

(i) Student personal records

(ii) Departmental library records

(iii) Geological Survey Mapping records

(iv) Student Examination records

For the purpose of this work, student examination records was chosen for the following reasons:-

(i) Student examination records is one of the most important record in the department as if mandatory from any student either at the undergraduate, in post graduate level to be examine periodically through semester examinations to determine skill acquisition and performance of individual students. It should however be realize that the department was created to produce graduate in geology, thus the main stay of the department are it's students and they have to be examine to graduate, through examination, thus, the important of examination records maintained through out there stay in the department.

(ii) Student examination records compared to other records are more cumbersome to maintain and compute through the five years B.Tech. Geology programme for individual course and individual students.

(iii) The security of student examination records is not guaranteed as the security of other records because of the sensitive nature of examination record, which might be subject to theft, alteration and mis-use. .

The department has a number of problems in keeping track of information about the examination records of each student. This is due to the fact that the system has not moved towards automation.

Also, in order to meet the expected demand of providing unique services to departments and institutions requesting for information about students examination records. The objectives of this project are to minimize these problems by computerizing the results procedure. Other objectives of the study include the following:-

(i) To provide the staff and the department as a whole with comprehensive information about students and their educational position in the department.

(ii) To eliminate the problems associated with manual procedures.

(iv) To avoid unauthorized personnel from having access to the records as the computerization of students records can be passworded and encrypted.

1.3 METHODOLOGY OF THE STUDY

In order to gather all the facts about the current system to ensure that all strength and weaknesses were discovered, personal visits were made to the department where facts about the manual procedure came to light. The main purpose of carrying out the investigation on the existing system was to determine the effectiveness of the manual computation of students examination records and to know how fast computation is carried out.

Three methods were used in gathering the required information carrying out this study:

(I) INTERVIEW (II) OBSERVATION (III) EXTRACTION OF RECORDS

(i) INTERVIEW

Those interviewed include the current examination officer and a student of the department so as to determine the problems being faced by the Examination Officer when computing students examination records.

(ii) OBSERVATION

Studying the current mode of operation of the existing system so as to improve on it and to serve the same purpose more effectively.

(iii) EXTRACTION OF RECORDS

Documents reviewed were lecturers result sheets, results sheet for presentation to the School's board and Senate and School, course registration forms, staff strength and the number of students in each level. Going through the existing manual system so as to see how it can be transformed into the expert system. The information was readily provided by the present examination officer. In fact, I must say that the data collection was most encouraging and successful as I was given easy access to the necessary documents, such as the course registration forms, departmental registration forms etc. My enquiries were entertained and satisfactory answers were provided.

1.4 COMPUTER SYSTEM

(a) COMPUTER

The term computer is used to describe a device made up of electronic and electromechanical components. It is a tool that is developed by modern man to help him accomplish certain tasks that he will otherwise perform manually. It is a general-purpose problem-solving machine, which accepts data as input, processes the input in accordance to a predefined program so as to give the desired output as information. It also has the capability of storing data as may be required.

A computer system is made up of a group of components, physical and non-physical, that are interconnected, each one carrying out specific function towards the common objective of processing data. These components need to function together in order to enable computer process data into information. The major components of a computer system are hardware, software, humanware etc.

(i) HARDWARE

This refers to the physical components of a computer. It is made up of mechanical, magnetic, electrical and electronic devices of a computer. Examples are keyboard, monitor printer etc.

(ii) SOFTWARE

This is the general term used to denote all forms of program that control the activities of a computer. It is through the use of software that the computer users exploit the capabilities of a computer.

(iii) HUMANWARE

This group consists of people who engage in the use of computers for one purpose or the other. They include programmers, systems analysts, computer operators etc.

(b) OPERATING SYSTEM

Operating system is a set of programs that is used to manage the computer activities including the allocation of computer resources, maintenance of files and the running of application software. This collection of programs takes over the control of the computer to such an extent that there is little or no human intervention once in operation.

One of the major functions of the operating system is that it manages all the hardware and software resources of the computer as efficiently as possible. As a resource manager, the operating system controls the flow of information through the computer. Data accepted by the keyboard, seen on the display, or sent to a printer are under the control of the operating system. The file manages the operating system is used to name, save, retrieve and maintain program and data files that are created while as an executor of application software the operating system serves as a vital link between the computer hardware and application software. Without the operating system, the application software will not be function.

The various types of operating systems are DOS, CPIM, OS/2, XENIX UNIX, Novel NetWare, win/NT etc.

DOS – Disk operating system.

CP/M – Control Program for Microcomputers

OS/2 – Operating system/2.

1.5 INFORMATION TECHNOLOGY

The curiosity of man to communicate brought about the use of signs, writing; telephone use, cellular, mobile phones, magazine, radio and even the use of computer. The use of all the above-mentioned types of telecommunications developed one after the other as the need for more improved way of communication became imperative.

Thus, Information Technology can be defined as being the combination of two technologies viz:

(a) TELECOMMUNICATIONS: (Telephones, Switches, Cables, Satellite, and Broadcasting).

(b) COMPUTERS:

This combination known as Information Technology enables Information about to be transmitted at a very high speed for instance, board meetings over the Internet and access to libraries not situated within one's vicinity. It changes not only individual jobs but also the way entire organization operates.

Other functions of an operating system are:-

(a) Protecting hardware, software and data from improper use.

Creating and removing (destroying) of processes.

(c) Provision of error correction routines.

(d) Providing a means of communicating messages or signals among processes.

(e) Passing of control from 1 Job to another under a system of Priority when more than 1 application program occupies main storage.

(f) Allocating hardware resources among processes.

PACKAGES & APPLICATION PACKAGES

Application packages are classified under one of the major components of a computer system known as application software. This application software is a general program written with a view to solving a problem. Application software are categorized into 2 groups viz:- Application packages which are programs written by the users or programmers for specific application or local use packages known as home made packages.

In essence the 2 groups of application software are:-

(a) Application Packages

(b) Home made Packages.

(a) APPLICATION PACKAGES

There are essentially high productive programs developed by experienced Programmers to enable end users get some work done with the computer. It is a collection of fully documented programs designed to perform a particular data processing task in more than one organization or installation. It is made up of

prewritten and tested programs that are designed by experts to perform one or more specific purposes. Examples of such packages are word processing, spreadsheet, visual FoxPro, database management, desktop publisher, statistical analysis packages etc.

(b) HOME MADE PACKAGES

These are programs written to solve a local problem within a particular organization. Such programs are designed to suite what is obtainable within the organization.

CHAPTER TWO

THE DEPARTMENT OF GEOLOGY

2.0 OVERVIEW

This chapter focuses on the department of Geology, the staff strength of the department, programmes and courses offered by the department. This chapter was introduced in order to highlight some problems associated with the department with respect to lack of manpower couple with the increase in students population and voluminous nature of the courses being offered.

2.1 THE STAFF STRENGTH

The staff strength of Geology Department of the Federal University of Technology, Minna stood at nine as at present. This number comprises the academic and non-academic staff. The academic staff are 4 lecturers including the head of the department. The academic staff (i.e. lecturers) equally serves as academic advisers to the student. The academic staff include the head of the department and lecturers in the various sections of the department, while the non-academic staff are supporting staff in areas of secretarial activities, cleaners, laboratory assistant, messenger and driver.

2.2 PROGRAMS OFFERED BY THE DEPARTMENT

Presently, the department is running both the undergraduate and post-graduate programmes. The programs were developed by a team of academicians and professionals. The undergraduate program has been in operation since 1983 when the department was established while the post-graduate program was established in 1992.

A student intending to study Geology in the department must have at least a minimum of 5 credits. Mathematics and English as some of the very compulsory subjects required while students who come in though pre-degree must at least have obtained the minimum requirements of passing all courses offered at the Pre-degree level.

To be admitted for a post-graduate program, the candidate must have a minimum of first degree in Geology or any related field. A minimum of 2nd second class lower degree is required, while for candidates with 3rd class degree and with at least five (5) years of post graduate working experience in any Geological field or related discipline may be qualified. Courses offered at the postgraduate level are divided into 3 main groups and these are:-

(i) Geophysics

(ii) Mineralogy

(iii) Sedimentology.

2.3 COURSES OFFERED BY THE DEPARTMENT

The department of Geology, Federal University of Technology teaches various courses, which leads to the award of B.Tech and a Masters degree. The B. Tech program runs through 2 academic semesters. These courses are grouped into core courses and elective courses. The core courses are strictly departmental courses while elective courses are relevant courses offered from other supporting departments in the University.

The 100 level of the department is both a qualifying and foundation year for all undergraduate students and as such all courses offered in 100 level are all compulsory courses. For a student to proceed from 100 level to 200 level, he/she must have at least a cumulative grade point average of at least 1 point.

The following underlisted courses are offered from 100 – 500 level and by post-graduate students.

2.4 COURSE REGISTRATION FORM

Course registration forms are issued to both undergraduate and post-graduate students for registration at the beginning of each session. There are the school registration form and the departmental registration forms.

2.5 FEASIBILITY STUDY

This is the preliminary investigation carried out on the present manual system used by the department. This investigation was conducted so as to determine the potentials of the proposed system by studying the existing system. The information generated from the study of the manual system was used in the development of the new system.

Feasibility study is determined by three (3) tests viz:-

(a) Operational Feasibility

(b) Technical Feasibility

(c) Economic Feasibility

(a) **Operational Feasibility:-** During my interaction with the current examination officer, it was discovered that the study was desirable in order to facilitate his work on students examination records.

(b) **Technical Feasibility:-** At present, the department has no personal computer for the immediate take off of this proposal. But it is hoped that with the facilities in the computer centre, the proposed system could take off until such a time when the department would be able to acquire one.

(c) **Economic Feasibility:-** The cost of conducting the full systems investigation is borne by the analyst while the required software to run this program are affordable.

2.6 PROBLEMS ASSOCIATED WITH THE EXISTING SYSTEM

Problem definition allows for the re-evaluation of the existing problem in the old system and to find out the shortcomings associated with the old system and how to remedy such problems.

Considering the manual system of computation of students examination records in the department, information about students performance can either be misplaced or easily manhandled, there may be delay in the processing of students data and at times errors often result during the process.

The manual method currently used in the department is found out to be highly inefficient. Some of the problems identified with the existing system include:-

(i) High rate of errors, which often occurs because the volume of data to be processed is often large.

(ii) Inadequate security of examination records.

(iii) Misplacement of students records which occur when records are being processed.

(iv) Access to students files is very slow. Many files have to be sorted before information from a particular file are generated. The computerization of

students examination records was found to be more reliable and more efficient.

CHAPTER THREE

SOFTWARE DEVELOPMENT

3.0 OVERVIEW

Software development is concerned with the stage where programs are written for the system proposed. To do this, a programming language of choice that will be suitable was chosen.

3.1 SYSTEMS ANALYSIS AND DESIGN

Systems analysis is used to describe the process of collecting and analyzing facts irrespective of existing operation, procedure and system in order to obtain a full appreciation of the prevailing situations so that an effective computerized system may be designed and implemented if proved feasible. Systems analysis or design is an important stage of this program because it is at the stage that all the requirements that will be included into the new system are determined. As such, the study will give adequate attention to details when designing the systems specifications.

3.2 ANALYSIS OF THE CURRENT SYSTEM

The current computation of students examination records are done manually. The manual system is still used because the computer is not yet

exploited. The compilation of student examination record is carried by only one person, which is the departmental examination officer who computes and compiles the result of the entire students whose number stands at 216 as at present. The departmental examination officer builds a table for two results presentation at school's board and the senate, and goes through all 216 files so as to extract registered courses. In the course of compiling these examination records, errors do occur which are normally detected, either at the department or the school board.

The current manual system of complying student examination records is not only cumbersome but also time consuming as it takes between 2 to 3 hours to results and compute CGPA. of a single student. From the above analysis, it could be clearly seen that the current system has problems. The solution to this problem is either that the department needs more people to assist or make use of a computer.

GRADING SYSTEM

A	75% And Over	Excellent	5.00 Points
B	60% - 74%	Very Good	4.00 Points
C	50% - 59%	Good	3.00 Points
D	45% - 49%	Fair	2.00 Points
E	40% - 44%	Pass	1 Point
F	0% - 39%	Failure	0.00 Point

COMPUTATION OF STUDENT CGPA FROM 100 LEVEL TO 500 LEVEL

GRADING SYSTEM

100 LEVEL

1ST SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 111	Introduction to Geology I	2	C	6
PHY 113	General Physics I	3	C	9
MAT 111	Elementary Math I	3	E	3
BOT 111	Plant Diversity	3	D	6
CHE 111	General Chemistry I	3	B	12
CPT 111	Introduction to Computer I	2	C	6
GST 123	Nigeria People And Culture	2	E	2
GST 101	Use of English	3	B	12
	TOTAL FOR SEMESTER	21		56
			SEMESTER GRADE POINT AVERAGE (GPA)	2.67
			CUMMULATIVE GRADE POINT AVERAGE (CGPA)	2.67

2ND SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 121	Introduction to Geology II	2	B	8
PHY 100	General Physics (Lab)	2	C	6
MAT 121	Elementary Math II	3	C	9
BOT 121	Animal Diversity	3	B	12

CHE 121	General Chemistry II	3	E	3
CPT 121	Introduction to Computer II	2	E	2
GST 104	Economics/Law	2	E	2
GST 102	Use of English	2	E	2
	TOTAL FOR SEMESTER	19		44
		SEMESTER GRADE POINT AVERAGE (GPA)		2.32
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.50

200 LEVEL

1ST SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 211	Physical Geology	2	C	6
GEL 212	Description Mineralogy	2	C	6
GEL 213	Igneous and Metamorpide	2	D	4
GEL 214	Map Interpretation	2	E	2
STA 117	Statistics	2	C	6
TGD 111	Technical Drawing	1	E	1
GEL 225	Field Work	2	B	8
CHE 212	Inorganic Chemistry	2	B	8
	TOTAL FOR SEMESTER	15		39
		SEMESTER GRADE POINT AVERAGE (GPA)		2.60
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.55

2ND SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 221	Crystallogaphy	2	C	6
GEL 222	Optical Mineralogy	2	A	10
GEL 223	Systematic Pleontology	3	B	12
GEL 224	Mineral Resources	2	C	6
PHY 224	Thermal Physics	3	D	6
CPT 221	Computer Programming	3	E	3
STA 127	Statistics	2	F	0
	TOTAL FOR SEMESTER	17		43
		SEMESTER GRADE POINT AVERAGE (GPA)		2.53
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.54

300 LEVEL

1ST SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 321	Metamorphic Petrology	2	B	8
GEL 322	Structural Geology	2	C	6
GEL 323	Photogeology	2	C	6
GEL 324	Principle of Geophysics	2	C	6
GEL 325	Introduction to Geochemistry	2	F	0
EDU 311	Education	2	D	4

EDU 322	Education	3	D	6
	TOTAL FOR SEMESTER	15		36
		SEMESTER GRADE POINT AVERAGE (GPA)		2.40
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.66

400 LEVEL

ST SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 411	Economics Geology	3	A	15
GEL 412	Hydrogeology	3	B	12
GEL 413	Engineering Geology	3	B	12
GEL 414	Geology of Nigeria	2	C	6
GEL 415	Regional Structural Geology	2	E	2
GEL 416	Marine Geology	3	D	6
	TOTAL FOR SEMESTER	21		56
		SEMESTER GRADE POINT AVERAGE (GPA)		3.31
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.99

2ND SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 421	S.I.W.E.S.	12	C	36
	TOTAL FOR SEMESTER	12		36
		SEMESTER GRADE POINT AVERAGE (GPA)		3.00
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.99

500 LEVEL

1ST SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS	GRADE	GRADE POINTS
GEL 501	Research Project	2	C	6
GEL 502	Geology Seminar	1	C	3
GEL 503	Mapping Projects	4	C	12
GEL 511	Advanced Igneous Petrology	2	D	4
GEL 512	Advanced Material Petrology	2	D	4
GEL 513	Applied Geophysics	3	E	3
	TOTAL FOR SEMESTER	21		56
		SEMESTER GRADE POINT AVERAGE (GPA)		2.67
		CUMMULATIVE GRADE POINT AVERAGE (CGPA)		2.67

3.3.2 HARDWARE REQUIREMENTS

The program, computerization of students examination records requires the following:-

(i) An IBM PC with Pentium Processor, full multimedia consisting of the following configuration:-

(a) An 8mb Ram

(b) A CD Rom drive

(c) A floppy disk drive

(ii) External speakers

(iii) A Printer

(iv) Printing papers

(v) Floppy diskettes – dual sided – double density

(vi) An uninterrupted Power supply (ups)

3.4 VISUAL FOXPRO:

CHOICE OF PROGRAMMING LANGUAGE

A program in any language is a written sequence of instructions for accomplishing specific tasks or as a command for a computer to perform a particular function. Several types of program language abound but for the purpose of this project visual FoxPro is used as the choice of programming language. A computer program has been written for the computerized students

examination records a case study of Geology department, Federal University of Technology Minna. This program is written using visual FoxPro, which is characterized by several features.

FEATURES OF THE PROGRAMMING LANGUAGE CHOSEN

The choice of visual FoxPro arose because of the following reasons and features posed by the application software:

(i) Visual FoxPro is an object oriented programming language and windows based package as which can be used to create very powerful applications and it uses such features like menus, icons, and the command window. The command window is used to create a directory, to set default to a named directory.

(ii) It reduces data redundancy.

(iii) Data integrity can be maintained.

(iv) Individual database file can be designed to meet specific requirement of a particular functional unit of an organization such as the department of Geology.

(v) It provides easy and greater access to information.

THE COMMAND WINDOW

This is an editing window where edit commands can be used. As an example, if a new program is to be developed and the name intended is LARAI, then from the command window the following command is issued:-

SET DEFA TO C:/LARAI.

This statement can automatically create a folder or a new directory called Larai. Other commands at the command window include:- Do, Chose, Zad, etc.

In visual FoxPro, forms are designed, which contain commands such as delete, save, add, modify, quit/exit and so on. depending on what is required of the form. Also as windows based package, windows sort keys are freely made used of e.g.

Ctrl + s = save

Ctrl + x = cut.

Ctrl + v = Paste.

Ctrl + 0 = Open etc.

With visual FoxPro, the use of the mouse cannot be over emphasized. It is worth mentioning however, that different version of visual FoxPro are in existence.

CHAPTER 4

PROGRAM TESTING, INSTALLATION AND IMPLEMENTATION

4.0 SYSTEM IMPLEMENTATION

The new system Design is mainly concerned with the coordination of activties, Job procedures and the efficient utilization of the available equipment so as to achieve the desired objectives. The existing system as we might have known, have some problems associated with it. The new system design when fully implemented would take care of these flaws.

Implementation is simply the coordination of the effort of the uses department and the data processing department in getting the new system into effective use. For easy implementation, a coordinating committee may be formed which will consist of the Head of department and the examinations officer.

4.1 DEBUGGING AND TESTING

DEBUGGING

This is a process of correcting or and checking errors. During this stage, programmer's errors such as invalid commands, mispelt commands, wrong declarations etc are checked.

TESTING

When a program has been developed, such a program has to be tested by the developer to be sure that the program is running and also to be sure that the desired task has been achieved. It is during this stage that necessary adjustments can be made.

4.2 PASSWORDING

Password is mainly used to protect your documents from unauthorized access that is, documents saved with password are located, which means you cannot retrieve such files until you are able to supply the password.

Other security measure that was put in place to protect the program is Encryption. This is a method of passwording documents such that the words or letters use to password the documents such are not displayed on the screen when typed rather figure like asterix is what will be displayed in place of the letters type. This is more reliable method of protecting documents than passwording because in the history of these methods of security check, nobody has been able to decode any program, documents that has been encrypted.

The hard disk was also passworded, it is only the departmental head and the examination officer been the custodians of this records that know the code for all the passwords and encryptions use to protect this program.

4.3 PROGRAM INSTALLATION

Installation is a process of transferring the entire contents of a program from the source drive to the target drive. The developed computerized student examination records were installed from floppy disk to a more permanent storage device known as the hard disk.

When a programmer has developed a package or software, the software is been transferred from wherever it was developed, to where it will be used this method of installation is invalid when the programmer is called upon to develop a package using the organizations systems. This is because the work is done directly on the systems. Hence there is no need copying it from one system to the other the procedure for the installation of the new system are as follows:-

STEPS	PROCEDURES	RESULTS
1. Go to start button	Click	Click pop up menu.
2. Go to setting submenu	Click	-
3. Choose taskbar & start menu	Click	Taskbar dialog box is displayed.
4. Select start-menu program.	Click	-
5.Browse to select Yisa project software	Double Click	-
6. Select program (folder)	Click	-
7. Destination	Click	Yisa project software copied into Program submenu successfully.

INSTALLATION TO WINDOWS PROGRAM SUBMENU REQUIRES THE FOLLOWING PROCEDURES:

STEPS	PROCEDURES	RESULTS
1. Go to start button	Click	Click pop up menu.
2. Go to setting submenu	Click	-
3. Choose taskbar & start menu	Click	Taskbar dialog box is displayed.
4. Select start-menu program.	Click	-
5.Browse to select Yisa project software	Double Click	-
6. Select program (folder)	Click	-
7. Destination	Click	Yisa project software copied into program submenu successfully

4.4 IMPLEMENTATION OF THE NEW SYSTEM

Implementation of the new system involves the changing from the old system to the new one. There are 4 basic methods of system implementation, whichever method is chosen will depend on the choice of the department.

The 4 different methods are:-

(i) Parallel system

(ii) Direct cutover

(iii) Pilot system

(iv) Phase-in

PARALLEL METHOD

Here both the old system and new one is operated concurrently with each other. Since the organization may at one time need to fall back on the old

system. It provides the greatest security without loss of time, money etc. such as in the event of problems such as errors during computation of results. The main disadvantage of this method is cost operating the 2 systems, since the 2 systems are maintained.

PILOT SYSTEM

Pilot system gives experience as live test before implementation. With this system, the working version of the system is 1st implemented in one of the department of an organization. It is based on the outcome of the implementation in that department that the rest of the system is then installed in the rest of the organization either by direct cutover or phase in method.

PHASE IN SYSTEM

This is the gradual implementation of the new system in phases across the users.

DIRECT CUT OVER

With this method, the new system replaces the old system abruptly, either over a weekend or overnight. In this type of method of implementation, users are forced to make sure that the new system works. It then implies that the users will have no other alternative method to fall back on in case of any problem. If this method is to be adopted, care must be taken and proper planning is required.

The parallel method of system implementation is recommended for the take off of this program. However, whatever method chosen will depends on the department to decide which suite them most.

4.5 TRAINING

The system is Menu-driven, hence designed in such a way that the user does not need to be one that has much knowledge of computer, before he/she can operate it. In order words, users could operate the system with little or no knowledge about operating system.

CHAPTER FIVE

CONCLUSION

5.0 PROGRAM DOCUMENTATION

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

In the computerization of the students' examination records, the equipment used to run this project is the microcomputer IBM compatible system with MS-DOS as the operating system of any version at all. The functions, which could be performed on the exams records are:-

- Addition of New records to file.
- Modification of existing record(s) on file
- Deletion of existing record(s) on file
- Generation of various reports for management use.
- The report generated would be discussed later under report.

5.1 PROGRAM MAINTENANCE

This includes whatever changes and enhancements need to be made after the system is up and running.

Once the system has become operational, there would be need to examine if it meets its objectives. Maintenance of a system is very important because it requires maintenance for it to be functional at all times.

LACK OF MAINTENANCE CAN LEAD TO INEFFICIENCY.

Some of the procedures necessary to maintain the system include putting procedures in place to guard against both misuse and obsolescent of programs and supporting documents once the system has been handed over.

(i) Hardware peripherals should be well maintained as specified in their manufacturer manual.

(ii) The program should be virus free.

(iii) Maintain record for every disk or tape kept within the data library.

(iv) Backup copies of the program should be made and kept secured.

The source programs should be pass worded to allow any authorized personnel access to the program. Account for everything they perform with the program. Any changes must lead to amendment of the master and distributed copies of code documentation and manuals.

5.2 LIMITATION OF THE STUDY

This project is uni-directional since it is only limited to fact-finding from the Geology department and design according to their specification. The knowledge

acquisition process is a great limitation because it is a difficult task to extract knowledge from a human expert.

Furthermore, the computer cannot write the signature of the examination officer. Though, this is a minor limitation since the documents (compiled examination records) will only need to be signed by the officer yet it is a limitation. However, the project could at any point in time be modified for others to use – in order words, most of the programs are written in module for other specification or design.

5.3 CONCLUSION

It is generally recognized that we live in an industrial society in which the efficiency of production of wealth depends heavily on various kinds of automation. Therefore, this computerization of the student examination records is an aspect of automation to move towards efficiency in terms of adequate up to date information about students, their academic standings, etc. Moreover, in many function the computer act primarily as an information source on the state of the students and hence must hold records, which describe the students and their academic performance.

As such having identified all or most of the problems associated with the manual system of compilation of students examination records of Geology

department and with the increasing volume of data, lack of security of records and most importantly space for storage, that is why the computerized system of students examination record is designed to develop the department of Geology for me. However, the system is designed subject to modification as may be required by the department if the project is to be implemented.

5.4 RECOMMENDATION

The convenience offered by information retrieval systems makes the computer-based system more flexible and more comprehensive than manual information storage and retrieval system. It is good to introduce computer into the department because of the benefits that can be derived. Since technology is not static, the growth and pressure to meet the demand of services of students calls for real automation. Because of this introduction there would be need to train staff (particularly examination officers) to handle the equipment (computer) and also to ensure that there is sanity control to computer program and guarantee data security. There would be the need to follow the hardware requirement for better utilization.

Since lots of research has to be carried out on this project, it would be necessary if the University can effect the implementation of most of these project works. Way of doing this includes presentation of some of these projects

for exhibition by the computer center to interested buyers. Which in turn would serve as a source of revenue. Publicity of this exhibition would help in a great deal to advertise the services provided by the center. Another way is that the consultancy should advertise the centre capability through the media or otherwise. This aim is towards generating revenue for the computer center.

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PROGRAM SOURCE CODE

```
*MAIN CODE
CLEAR ALL
CLOS ALL
SET DEFA TO c:\gel
SET DATE TO british
SET TALK OFF
SET STATUS OFF
SET ECHO OFF
SET DELETED OFF

PUBLIC pres, res, gpp
gpp = 0
STORE .T. TO pres, res
_SCREEN.CAPTION = "Computerized Student Examination Record (Geology
Department, FUT Minna)"
_SCREEN.ICON = "geology.ico"
_SCREEN.PICTURE = "plastic.bmp"
DO FORM frmintro
READ EVENTS


*COURSE FORM CODE*
THISFORM.SETALL("readonly",.T.,"textbox")
THISFORM.SETALL("readonly",.T.,"editbox")
IF USED("course_reg")
        SELE course_reg
ELSE
        SELE 0
        USE course_reg
ENDIF
*SET FILTER TO (matno = xmatno AND session = xsession AND clevel = xlevel)
*SCATTER MEMVAR MEMO BLANK
THISFORM.REFRESH


*THE INTRODUCTORY SCREEN CODE*
IF USED("results")
        SELE results
ELSE
        SELE 0
        USE results
ENDIF
SET FILTER TO (matno = pmatno AND rsession = psession)      && AND rlevel =
xlevel)
```

```
PUBLIC sgpa, points , tcredit, tgp
STORE 0 TO sgpa, points , tcredit, tgp
SCAN FOR (matno = pmatno AND rsession = psession)    && AND rlevel = xlevel)
        DO CASE grade
                CASE grade = "A"
                        points = 5
                CASE grade = "B"
                        points = 4
                CASE grade = "C"
                        points = 3
                CASE grade = "D"
                        points = 2
                CASE grade = "E"
                        points = 1
                CASE grade = "F"
                        points = 0
        ENDCASE
        tcredit = tcredit + credit
        tgp = tgp + (credit * points)
        sgpa = tgp / tcredit
ENDSCAN


*REGISTRATION COURSE FORM CODE*
PUBLIC ofrmcourse

ofrmcourse=NEWOBJECT("frmcourse")
ofrmcourse.Show
RETURN


        **************************************************
*-- Form:        frmcourse (c:\gel\frmcourse.scx)
*-- ParentClass:  form
*-- BaseClass:    form
*
DEFINE CLASS frmcourse AS form


        Height = 282
        Width = 530
        DoCreate = .T.
        AutoCenter = .T.
        Caption = "COURSE REGISTRATION FORM"
        WindowState = 0
        BackColor = RGB(170,150,130)
```

```
Name = "FRMCOURSE"


ADD OBJECT label1 AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontName = "Monotype Corsiva", ;
        FontSize = 14, ;
        Alignment = 2, ;
        BackStyle = 0, ;
        Caption = "COURSE REGISTRATION FORM", ;
        Height = 25, ;
        Left = 127, ;
        Top = 11, ;
        Width = 276, ;
        TabIndex = 16, ;
        ForeColor = RGB(128,0,0), ;
        Name = "Label1"


ADD OBJECT shape1 AS shape WITH ;
        Top = 233, ;
        Left = 25, ;
        Height = 40, ;
        Width = 479, ;
        BorderWidth = 2, ;
        BackColor = RGB(149,135,106), ;
        BorderColor = RGB(128,0,64), ;
        Name = "Shape1"


ADD OBJECT shape2 AS shape WITH ;
        Top = 44, ;
        Left = 25, ;
        Height = 172, ;
        Width = 479, ;
        BorderWidth = 2, ;
        BackColor = RGB(250,202,190), ;
        BorderColor = RGB(128,0,64), ;
        Name = "Shape2"


ADD OBJECT txtmatno AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
        ControlSource = "xmatno", ;
```

```
        Enabled = .F., ;
        Format = "!", ;
        Height = 23, ;
        Left = 301, ;
        MaxLength = 10, ;
        TabIndex = 12, ;
        Top = 51, ;
        Width = 81, ;
        DisabledForeColor = RGB(0,0,0), ;
        Name = "txtMatno"


ADD OBJECT lblmatno AS label WITH ;
        AutoSize = .T., ;
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Matriculation Number", ;
        Height = 19, ;
        Left = 148, ;
        Top = 53, ;
        Width = 143, ;
        TabIndex = 17, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblMatno"


ADD OBJECT cmdadd AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
        Left = 34, ;
        Height = 29, ;
        Width = 59, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = "\<Add", ;
        TabIndex = 4, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdadd"


ADD OBJECT cmddelete AS commandbutton WITH ;
        AutoSize = .F., ;
```

```
        Top = 239, ;
        Left = 95, ;
        Height = 29, ;
        Width = 59, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = "\<Drop", ;
        TabIndex = 5, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmddelete"


ADD OBJECT cmdmodify AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
        Left = 156, ;
        Height = 29, ;
        Width = 59, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = "\<Modify", ;
        TabIndex = 6, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdmodify"


ADD OBJECT cmdclose AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
        Left = 217, ;
        Height = 29, ;
        Width = 59, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = "\<Close", ;
        TabIndex = 7, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdclose"


ADD OBJECT cmdfirst AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
```

```
        Left = 290, ;
        Height = 29, ;
        Width = 50, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = "<<", ;
        TabIndex = 8, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdfirst"


ADD OBJECT cmdnext AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
        Left = 394, ;
        Height = 29, ;
        Width = 50, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = ">", ;
        TabIndex = 10, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdnext"


ADD OBJECT cmdlast AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
        Left = 446, ;
        Height = 29, ;
        Width = 50, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = ">>", ;
        TabIndex = 11, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdlast"


ADD OBJECT cmdprevious AS commandbutton WITH ;
        AutoSize = .F., ;
        Top = 239, ;
        Left = 342, ;
```

```
            SKIP 1
        ELSE
            MESSAGEBOX("This is the Last Record", 0 + 64,"Warning")
        ENDIF
    ENDPROC


    PROCEDURE cmdlast.Click
        IF USED("course_reg")
            SELE course_reg
        ELSE
            SELE 0
            USE course_reg
        ENDIF
        IF !EOF()
            GO BOTTOM
        ELSE
            MESSAGEBOX("This is the Last Record", 0 + 64,"Warning")
        ENDIF
    ENDPROC


    PROCEDURE cmdprevious.Click
        IF USED("course_reg")
            SELE course_reg
        ELSE
            SELE 0
            USE course_reg
        ENDIF
        IF !BOF()
            SKIP -1
        ELSE
            MESSAGEBOX("This is the first Record", 0 + 64,"Warning")
        ENDIF
    ENDPROC


ENDDEFINE
*
*-- EndDefine: frmcourse
**************************************************
```

```
        Height = 29, ;
        Width = 50, ;
        FontBold = .T., ;
        FontName = "Times New Roman", ;
        FontSize = 10, ;
        Caption = "<", ;
        TabIndex = 9, ;
        ForeColor = RGB(0,0,160), ;
        Name = "cmdprevious"


ADD OBJECT txtsession AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
        ControlSource = "xsession", ;
        Enabled = .F., ;
        Format = "!", ;
        Height = 23, ;
        Left = 89, ;
        MaxLength = 10, ;
        TabIndex = 13, ;
        Top = 91, ;
        Width = 90, ;
        DisabledForeColor = RGB(0,0,0), ;
        Name = "txtSession"


ADD OBJECT lblsession AS label WITH ;
        AutoSize = .F., ;
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Session", ;
        Left = 39, ;
        Top = 93, ;
        Width = 47, ;
        TabIndex = 18, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblSession"


ADD OBJECT txtsemester AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
```

```
        ControlSource = "xsemester", ;
        Enabled = .F., ;
        Format = "!", ;
        Height = 23, ;
        Left = 246, ;
        MaxLength = 10, ;
        TabIndex = 14, ;
        Top = 91, ;
        Width = 112, ;
        DisabledForeColor = RGB(0,0,0), ;
        Name = "txtSemester"


ADD OBJECT lblsemester AS label WITH ;
        AutoSize = .F., ;
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Semester", ;
        Left = 187, ;
        Top = 93, ;
        Width = 57, ;
        TabIndex = 19, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblSemester"


ADD OBJECT txtclevel AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
        ControlSource = "xlevel", ;
        Enabled = .F., ;
        Format = "!", ;
        Height = 23, ;
        Left = 400, ;
        MaxLength = 10, ;
        TabIndex = 15, ;
        Top = 91, ;
        Width = 90, ;
        DisabledForeColor = RGB(0,0,0), ;
        Name = "txtClevel"


ADD OBJECT lblclevel AS label WITH ;
```

```
        AutoSize = .F., ;
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Level", ;
        Left = 363, ;
        Top = 93, ;
        Width = 35, ;
        TabIndex = 20, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblClevel"


ADD OBJECT txtcourse_cod AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
        ControlSource = "m.course_cod", ;
        Format = "!", ;
        Height = 23, ;
        InputMask = "XXX 999", ;
        Left = 136, ;
        MaxLength = 10, ;
        TabIndex = 2, ;
        Top = 153, ;
        Width = 104, ;
        Name = "txtCourse_cod"


ADD OBJECT lblcourse_cod AS label WITH ;
        AutoSize = .F., ;
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Course Code", ;
        Height = 19, ;
        Left = 49, ;
        Top = 157, ;
        Width = 81, ;
        TabIndex = 21, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblCourse_cod"
```

```
ADD OBJECT txtcourse_tit AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
        ControlSource = "m.course_tit", ;
        Format = "!", ;
        Height = 23, ;
        Left = 136, ;
        MaxLength = 50, ;
        TabIndex = 1, ;
        Top = 124, ;
        Width = 355, ;
        Name = "txtCourse_tit"


ADD OBJECT lblcourse_tit AS label WITH ;
        AutoSize = .F., ;
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Course Title", ;
        Height = 19, ;
        Left = 49, ;
        Top = 128, ;
        Width = 78, ;
        TabIndex = 22, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblCourse_tit"


ADD OBJECT txtcredit_uni AS textbox WITH ;
        Comment = "", ;
        FontName = "Times New Roman", ;
        ControlSource = "m.credit_uni", ;
        Height = 23, ;
        Left = 136, ;
        TabIndex = 3, ;
        Top = 182, ;
        Width = 104, ;
        Name = "txtCredit_uni"


ADD OBJECT lblcredit_uni AS label WITH ;
        AutoSize = .F., ;
```

```
        FontBold = .T., ;
        FontName = "Garamond", ;
        FontSize = 11, ;
        WordWrap = .T., ;
        BackStyle = 0, ;
        Caption = "Credit Units", ;
        Height = 19, ;
        Left = 49, ;
        Top = 186, ;
        Width = 77, ;
        TabIndex = 23, ;
        ForeColor = RGB(128,0,0), ;
        Name = "lblCredit_uni"


PROCEDURE Init
        THISFORM.SETALL("readonly",.T.,"textbox")
        THISFORM.SETALL("readonly",.T.,"editbox")
        IF USED("course_reg")
                SELE course_reg
        ELSE
                SELE 0
                USE course_reg
        ENDIF
        *SET FILTER TO (matno = xmatno AND session = xsession AND clevel
= xlevel)
        *SCATTER MEMVAR MEMO BLANK
        THISFORM.REFRESH
ENDPROC


PROCEDURE cmdadd.Click
        IF USED("course_reg")
                SELE course_reg
        ELSE
                SELE 0
                USE course_reg
        ENDIF
        IF THIS.CAPTION = "\<Add"
                THISFORM.SETALL("readonly",.F.,"textbox")
                THISFORM.SETALL("readonly",.F.,"editbox")
                THISFORM.SETALL("ENABLED",.F.,"COMMANDBUTTON")
                THISFORM.cmdclose.ENABLED = .T.
                THIS.ENABLED = .T.
                SCATTER MEMVAR MEMO BLANK
                THISFORM.txtcourse_tit.SETFOCUS
```

```
            THISFORM.SETALL("readonly",.F.,"textbox")
            THISFORM.SETALL("readonly",.F.,"editbox")
            THISFORM.SETALL("ENABLED",.F.,"COMMANDBUTTON")
            THISFORM.cmdclose.ENABLED = .T.
            THIS.ENABLED = .T.
            THIS.CAPTION = "\<Save"
            THISFORM.REFRESH
        ELSE
            GATHER MEMVAR MEMO
            THIS.CAPTION = "\<Modify"
            THISFORM.SETALL("readonly",.T.,"textbox")
            THISFORM.SETALL("readonly",.T.,"editbox")
            THISFORM.SETALL("ENABLED",.T.,"COMMANDBUTTON")
        ENDIF
ENDPROC


PROCEDURE cmdclose.Click
        SET FILTER TO
        THISFORM.RELEASE
ENDPROC


PROCEDURE cmdfirst.Click
        IF USED("course_reg")
            SELE course_reg
        ELSE
            SELE 0
            USE course_reg
        ENDIF
        IF !BOF()
            GO TOP
        ELSE
            MESSAGEBOX("This is the First Record", 0 + 64,"Warning")
        ENDIF
ENDPROC


PROCEDURE cmdnext.Click
        IF USED("course_reg")
            SELE course_reg
        ELSE
            SELE 0
            USE course_reg
        ENDIF
        IF !EOF()
```

```
                THIS.CAPTION = "\<Save"
                THISFORM.REFRESH
            ELSE
                m.matno = xmatno
                m.session = xsession
                m.semester = xsemester
                m.clevel = xlevel
                INSERT INTO course_reg FROM MEMVAR
                THIS.CAPTION = "\<Add"
                THISFORM.SETALL("readonly",.T.,"textbox")
                THISFORM.SETALL("readonly",.T.,"editbox")
                THISFORM.SETALL("ENABLED",.T.,"COMMANDBUTTON")
            ENDIF
        ENDPROC


        PROCEDURE cmddelete.Click
            USE
            USE course_reg IN 0 EXCL AGAIN
            THISFORM.SETALL("ENABLED",.F.,"COMMANDBUTTON")
            THISFORM.cmdclose.ENABLED = .T.
            THIS.ENABLED = .T.
            ans = MESSAGEBOX("This Record is about to be Deleted, Proceed?", 4
+ 32,"Warning")
            IF ans = 6
                IF !EOF()
                    DELETE
                    PACK

        THISFORM.SETALL("ENABLED",.T.,"COMMANDBUTTON")
                ELSE
                    MESSAGEBOX("End of File Encoutered", 0 +
64,"Warning")
                ENDIF
            ENDIF
        ENDPROC


        PROCEDURE cmdmodify.Click
            IF USED("course_reg")
                SELE course_reg
            ELSE
                SELE 0
                USE course_reg
            ENDIF
            IF THIS.CAPTION = "\<Modify"
```

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF GEOLOGY

COURSE REGISTRATION FORM

NAME OF STUDENT: _____
SURNAME OTHER NAMES

MATRICULATION NUMBER: _____ YEAR OF MATRICULATION: _____

LEVEL: _____ SEMESTER: _____ SESSION: _____

S/N	CODE	TITLE	UNITS	SEMESTER 1ST	SEMESTER 2ND
1.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13					
1.					
1.					
1					
1.					
18.					
19.					
20.					

TOTAL UNITS: _____

NB: All Courses are compulsory.

Course Code	Course Title	Credits	Semester	Pre-requisite
PHY 113	General Physics I (Mechanics)	3		
GEL 111	Introduction to Geology I· Earth Materials	2	1st	-
CHE 111	General Chemistry	3	"	-
" 112	Inorganic Chemistry	2	"	-
PHY 100	General Physics (Lab)	2	"	-
BOT 111	Plant Diversity	3	"	-
GEL 121	Introduction to Geology II Earth Processes	2	2nd	-
CHE 121	General Chemistry II	3	"	-
CHE 191	Practical Chemistry	2	"	-
PHY 123	General Physics III (Properties of matter)	2	"	-
MAT 111	Elementary Math I (Algebra and Trigo)	3	1st	-
MAT 121	Elementary Math II (Calculus)	3	-	2nd
CPT 111	Introduction to Computer I	2	1st	-
CPT 121	Introduction to Computer II	2	-	2nd
GST 101	Use of English	3	1st	-
GST 102	Use of English	2	-	2nd
GST 103	Nigeria Peoples and Culture	2	1st	"
GST 104	Economics) Either/Or	2	"	"
	Law)		"	"
TCD 111	Technical Drawing	1	"	"
WSP 110	Workshop Practice	1	"	"
ZOO 121	Animal Diversity	3	"	"
	Total Credits =	49	-	-

NB: All Courses are compulsory.

Course Code	Course Title	Credits	Semester	Pre-requisite
GEL 211	Physical Geology	2	1st	-
GEL 212	Descriptive Mineralogy	2	"	-
GEL 213	Igneous & Metamorpide Petrology	2	"	-
GEL 214	Map Interpretation	2	"	-
GEL 221	Crystallography	2	2nd	-
GEL 222	Optical Mineralogy	2	"	-
GEL 223	Systematic Paleontology	3	"	-
GEL 224	Mineral Resources	2	"	-
STA 117	Statistics	2	1st	-
STA 127	"	2	2nd	-
CHE 211	Physical Chemistry II	2	1st	-
CHE 212	Inorganic Chemistry	2	"	-
PHY 215	Waves & Geometrical Optics	3	"	-
PHY 224	Thermal Physics	3	2nd	-
CPT 221	Computer Programming	3	"	-
GST 101*	Use of English I	3	1st	-
GST 102*	Use of English II	2	2nd	-
GST 103*	Nigeria Peoples and Culture	2	1st	-
GST 104*	Economics) Either/Or	2	"	-
	Law)	2	"	-
TCD 111*	Technical Drawing	1	"	-
WSP *	Workshop	1	"	-
SUR *	Land Surveying	2	"	-
GEL 225	Field Work	2	"	-
	Total Credits =	52	-	-

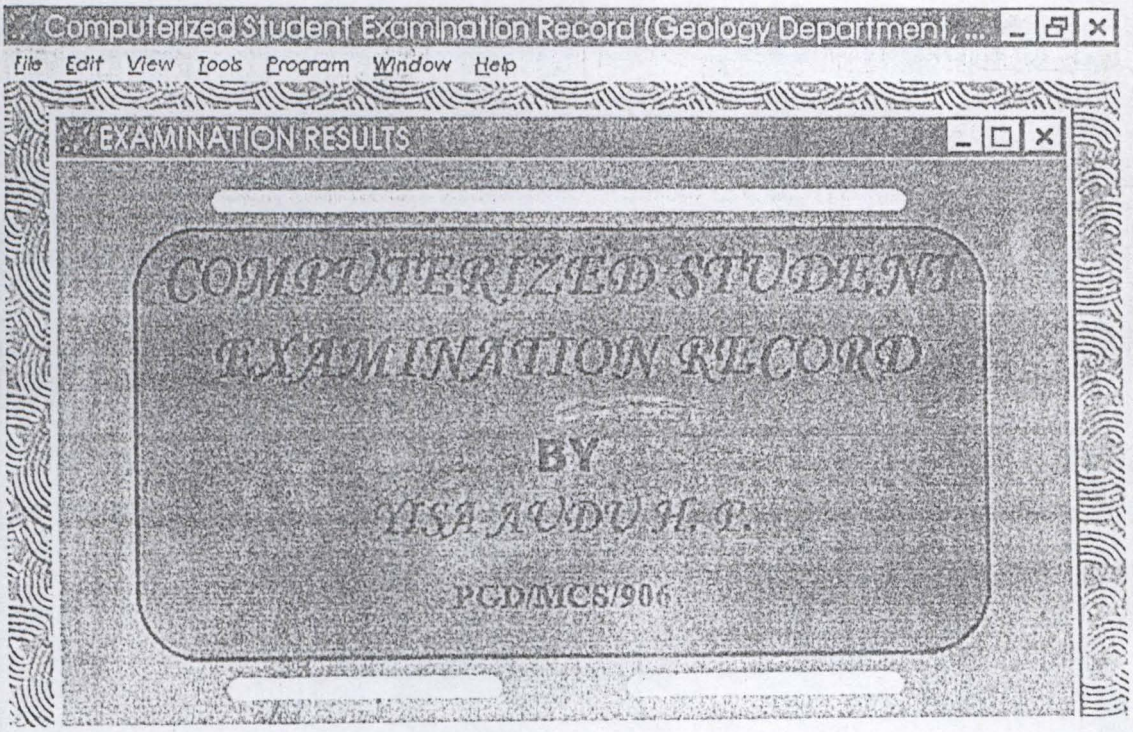
For Direct Entry Candidates, some of these courses can be taken at higher levels.

... LEVEL

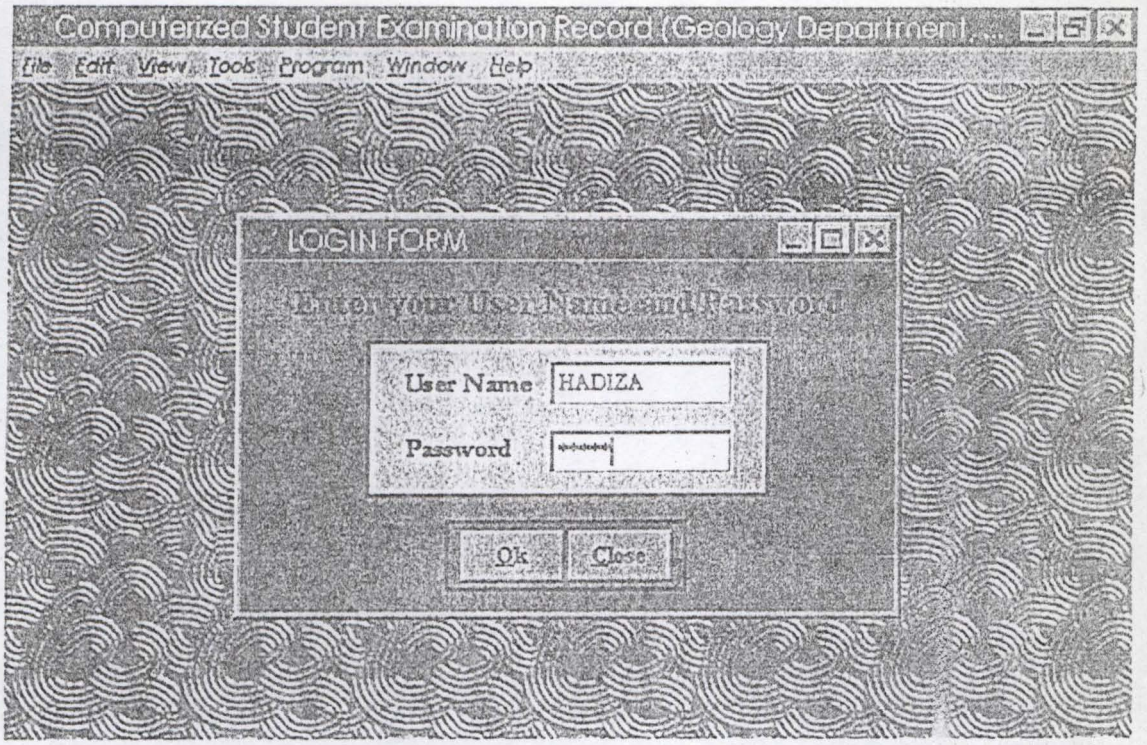
Course Code	Course Title	Credits	Semester	Pre-requisite
GEL 501	Research Project	4	1&2	GEL 415,416
GEL 502	Geology Seminar	2	"	-
GEL 503	Mapping Project	4	1st	GEL 311,316,322
GEL 511	Advanced Igneous Petrology	2	"	-
GEL 512	Advanced Met. Petrology	2	"	-
GEL 513	Applied Geophysics	3	"	-
GEL 516	Advanced Sedimentary Petrology	2	2nd	-
GEL 522	Regional Geology of Africa	2	"	GEL 322,323,415
GEL 523	Micropalaeontology	3	"	GEL 312,316
GEL 524	Geology of Nigeria II and Excursion	2	"	GEL 414
GEL 525	Environmental Geology	2	"	-
	Total =	26		

Electives: Minimum of 6 credits of Electives are required from the following:

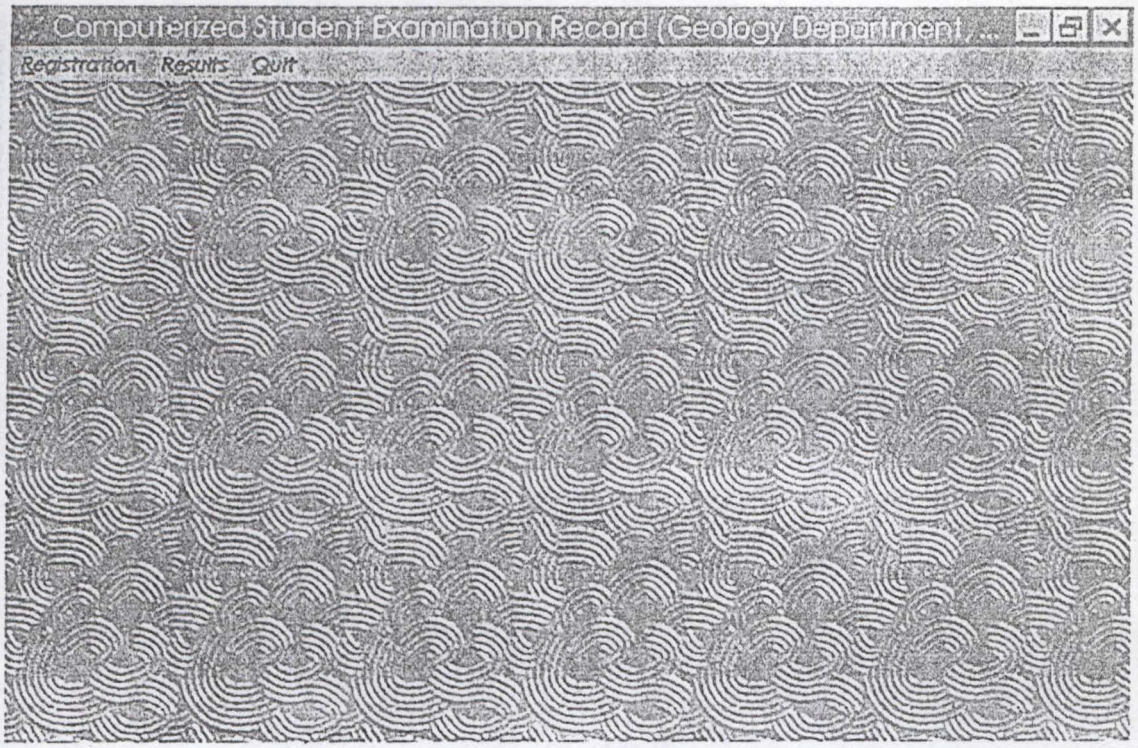
GEL 515	Applied Engineering Geology	3	1st	-
GEL 514	Applied Geochemistry	3	"	-
GEL 521	Sedimentary Environments and Basin Analysis	3	2nd	-
GEL 526	Applied Hydrogeology	3	"	-
PHY 419	Geophysical Data Processing	3	1st	-
MATHS		3	"	-
CEE 512	Geotech. Engineering I	3	"	-
BIO 513	Marine Biology	3	"	-
PHY 415	Optics	2	"	-
CHE 516	Advanced Analytical Chemistry	2	"	CHEM 324
	Total =	34		



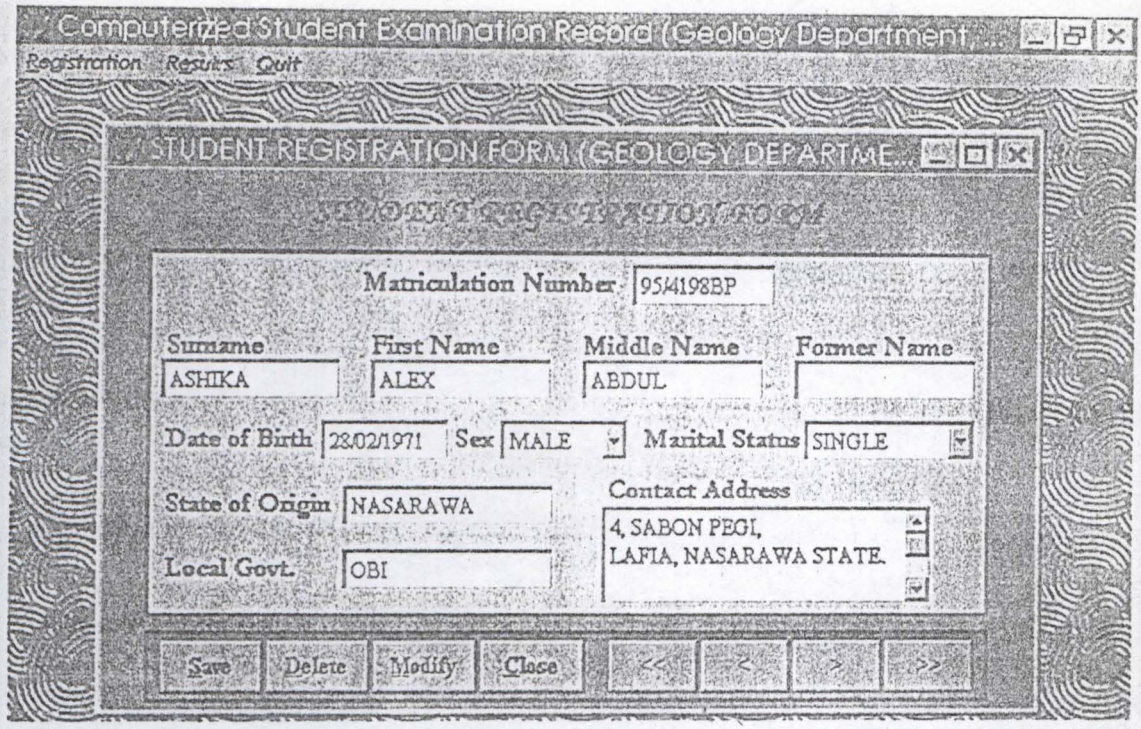
This Is The Welcome Screen



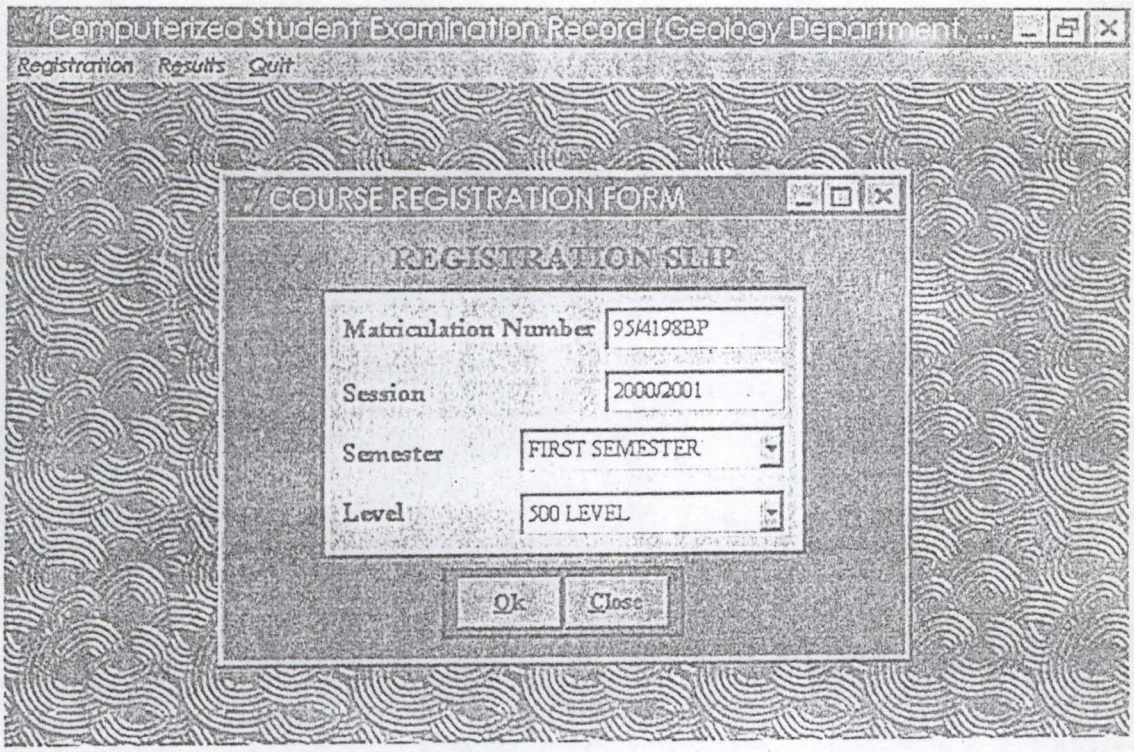
This Is The User And Password Form



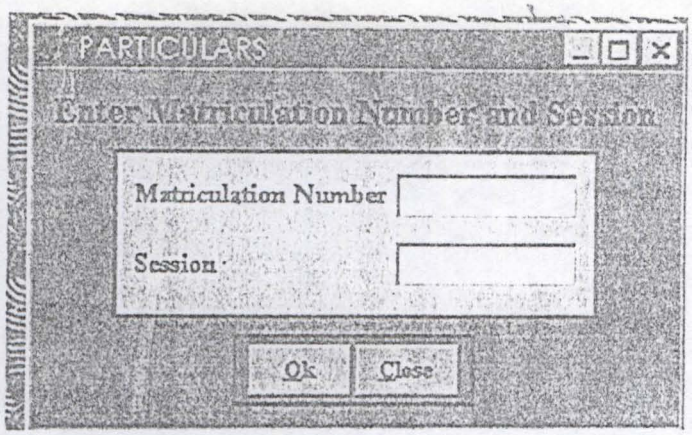
This Is The Program Main Menu

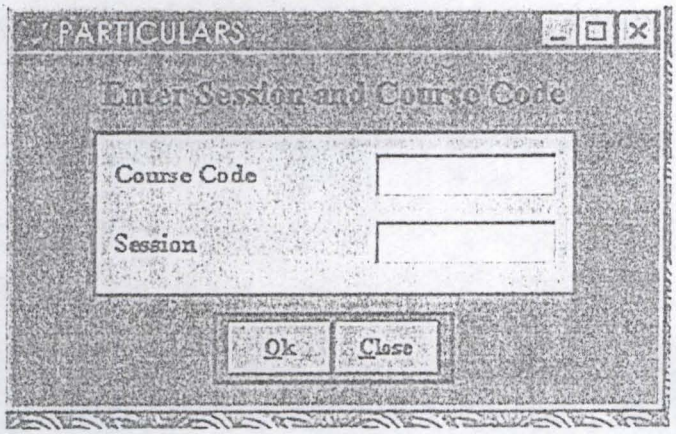


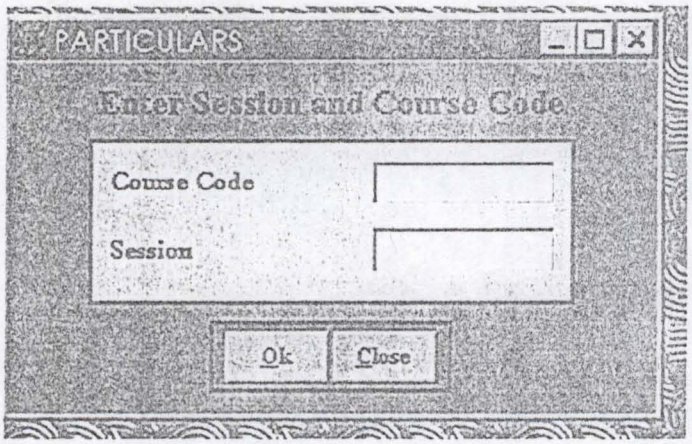
This Is The Student Registration Form



This Is The Student Course Registration Form







This Are The Print Outs Of The Various Results: (a) By Individual (b) By Course
(c) By Sessional GPA

SESSIONAL GRADE POINT AVERAGE

DATEO__

Matriculation Number MATNO_____ **Session** RSESSION__

Total Credit Units Taken tcredit_____

Total Grade Points tgp_____

Sessional GPA sgpa_____