



Development of An Examination Result Processing Software For Undergraduate Students: Umar Suleiman College of Education Gashua, Yobe State Nigeria

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ABSTRACT

A number of problems associated with student academic record management include improper course registration, late release of students' results, inaccuracy due to manual and tedious calculation and retrieval difficulties/inefficiency. In most cases the data generated by academic institutions are usually created in non-delineated files for use by different departments/units within the institutions with the same data appearing on several of these files. This means that a simple change of address would have to be processed in two and probably three or four places, depending on the number of other files on which these data appears. The development of database concept is the answer to these problems where the amount of redundant data is reduced and the possibility that data contained on a file might be inaccurate because they were never updated. This paper discusses the design and implementation of a student course management database application with Microsoft Access. It also discusses the issues of selecting appropriate database model, interface design for easy result recording, grade point calculation and remarks, for undergraduate, NCE, Diploma and Certificates students respectively.

Keywords: Development, Examination, Software, Students Grade, Test & Exam Scores, Teachers, Application, Results Processing and Database.

1.0 INTRODUCTION

The major exercise in an educational institution is to train students and at the end of the training, conduct examinations for them (Esentürk et al., 2015). The ways in which the examination results are being processed determine the credibility, speed and accuracy of the entire education process (Akhmedov, 2022). The Nigerian education examination system in the Colleges and the University Results in the school are being processed manually before after which it graduated to being processed in an advanced manual method (Abah et al., 2022). Automating the key processing of the results is vital in ensuring students gets their result quickly as soon as possible after graduation. The effort expended in the process of registration of students and computation of their examination results is awesome. Quite worrisome is the fact that these processes are carried out every academic session, putting the operators in a continuous and ever demanding cycle. The computation of examination results and registration of students is obviously an object-centered activity, the student being the dominant object in this case. The data generated by organizations are usually created in files for use by different departments/units within the organization (Jia& Benson2022). If the data contained in these files are not carefully delineated it is very likely that the same data will appear on several of these files. That is these files would contain redundant data e.g. the University registry file and college or department file would contain the name and address of

a student. This would mean that a simple change of address has to be processed in two and probably three or four places, depending on the number of other files on which these data appears. As noted by Clark-Ginsberg et al., (2022) organizing and managing student records into a cohesive and efficient system might seem like an impossible task. The question now is to identify which of these school administrative functions are best suited for computerization (Mohamad et al., 2022). The development of the concept of database is the answer to this question where the amount of redundant data is reduced and the possibility that data contained on a file might be inaccurate because they were never updated. Various applications have been developed to address a number of these issues but the proprietary nature of user-oriented systems has not made it possible to have a good survey of such systems. There is a wide array of existing information and information needs, yet schools are often limited by personnel and financial concerns (Tattum, D. P. (2022)). In view of the above this project was designed to show a process of development and usage software to handle events in result processing faster than before in Umar Suleiman College of Education, Gashua, Yobe State, Nigeria.

1.1 Statement of the problem

Students' result is one of the most important records to be kept in the school, and the way these results are organized is vital to the school management. The following are some of the inadequacies discovered in result processing in the school using either manual or Advanced manual method: Problems associated with course system management include: Improper registration, Late release of students' results, Inaccuracy due to manual and tedious calculation, retrieval difficulties /inefficiency. Other problems include; Errors are very common in the computation, especially with lecturers handling bigger classes. Inaccuracies are prevalent, the time taken to process the results used to be very long, that is why sometime readiness of certificate by graduated students are delayed, results from different lecturers will have to be in different formats and layout. Though the layout may be similar, but not exactly the same, in fact some lecturers who are not versed in the use of Spreadsheet will have to be very versed in making some common errors and finally there is no data independence and results can't be stored in an organized manner. Hence, the need to develop standard software that can handle these challenges necessitated the development of this study.

1.2 Objectives of the study

In order to overcome these challenges posed by the result processing methods mentioned above, the need to develop a new program to present result in an orderly manner to cater for Degree result presentation in the school which will have the following capabilities:

1. Speedy computation of results and Minimization of errors to the barest minimum.
2. The soft-copy of the processed result will be stored in an orderly manner for future usage if necessary.

1.3 Purpose of the Study

The purpose of the study is design a student result recording and processing software with vital records as demonstrated in the figure below. The need to evolve not just a computerized process, but an object-oriented software design and implementation that will effectively and efficiently capture all the important objects associated with the registration and examination result processing within the college and the interactions among the objects. This will help the lecturers and Student Record Office in timely release of students' examination results.

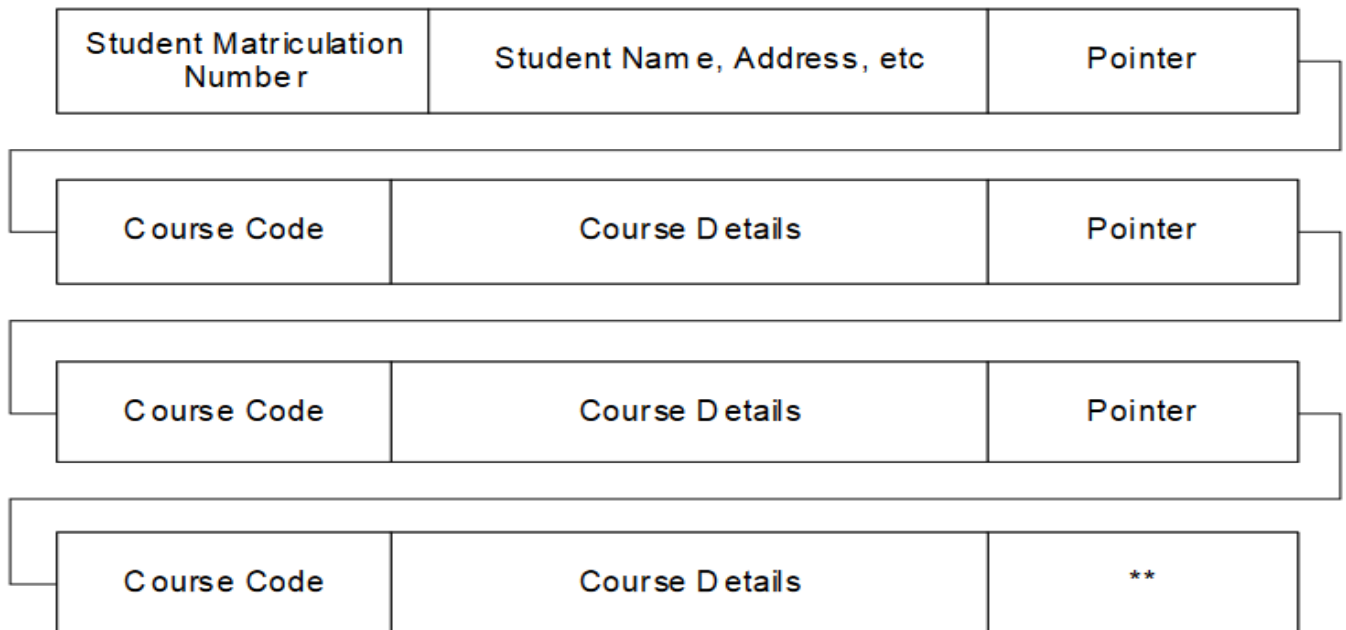


Figure 1a Schematic diagram of vital students records in the developed software

1.4 Justification of the study

Many schools have their own system to manage students profile and assessments. Common practice is by recording the student information in a record book. Students' information is obtained from the registration form completed by the parents when they registered their children for the first time. This practice has some weaknesses such as the longer time to search the student profile, the possibility of misplacement of record book and vulnerability of student record to be accessed by unauthorized person. In Yobe state public secondary schools, several assessments are prepared to evaluate student performance. Types of assessments that are common to all the secondary schools are assignments, monthly test, and end of term exams. At the end of each assignment, test and examination, the class teacher records student's marks and grades in the record book or in basic computer software such as Microsoft Excel for teachers with knowledge and access to computer. After that, the class teacher needs to determine student's position (ranking) in class based on their performances. However, it takes time to do these tasks because they need to formulate their own calculation for class position (ranking). These tasks will be much easier if all calculations for class position (ranking) can be automatically done when the teacher enter assignments, test and exams marks. Students result is the criteria for the measurement of the student's capability in terms of academic performance in the school. It is used to measure a student's capability in each subject offered by the student, because the student result is very important to the student and his/her parents, there is need to avoid common mistakes made during the result processing, this can easily be achieved by an automated result processing system, The system is an effective, efficient and error free results processing system designed and implemented for public secondary schools in Yobe state for proper running of the schools results processing. Therefore, the researcher developed an automated result processing system (ARP-System) in order to manage student information and assessments. This system will help school administration (principal and clerk) to manage student profile and class teacher to manage students' assessments imagine a teacher compiling just 30 students results and the stress the teacher have to undergo. The teacher gets busy calculating (addition and division) each student's test and exam scores. For every student, the teacher will add what the student scored in first test, second test and exam to get the total for that subject, assume the subject is Mathematic; the teacher will repeat it for the rest subjects offered by the same student just to get all the total scores for each subject. To get the average score for

this student, the teacher will have to add all the total scores for each subject offered and then divide by total number of subjects offered by the student. The same process is repeated for the remaining 29 students. After that, the teacher now orders the average scores to rank the students 1st, 2nd, 3rd ... position in the class, it does not end there. The teacher will also enter the record into each student "Report Card" then create a broad sheet called Master Sheet for all the students' records for future references. This is stressful and time consuming, in order to manage this computation and to make teachers less stressful, make their job enjoyable and to make them direct their attention on teaching is very easy with computerized system. On the other hand, Imagine one person processing 3000-7000 students result from various classes with little effort of just entering students' scores as soon as they are conducted, and results generated automatically for printing no matter the size of the students in a class/school. In each term, the system generates test and exam scores sheet with students names arranged accordingly with columns/rows created for each subject scores entering. This is given to the class teacher to fill in scores after the test or exam is conducted. It will be taken back to the system for entry and after that with just a click; the result is ready for printing. Most authorities and management of secondary schools in Yobe state think that the use of computer in school administration is only for the production of applications, memos and letters. There is not a single computer used in the library of these schools. Use of computers in schools cannot be over emphasized, it can help in administering the school during the admission procedures, processing examination, admission, registration, scheduling, storing of officials and students' records etc. Investigation revealed that the manual method adopted in results processing pose some problems in most secondary school in Yobe state. These problems can be arranged under the following heading: Poor security of documents, Untimely processing of results, and Production of inaccurate results. The Aim of this research is to develop a powerful computer application program that will ameliorate on the short-comings encountered in the student's result processing in Yobe state public secondary schools such as the stress of compiling students result by the teachers and errors generated in the results due to human factors thereby generating result that is accurate, timely and error free. All efforts in this research are geared towards the gathering of sufficient information that would help in making useful suggestions for the alleviation of manual processing of results in secondary schools considering the processing speed, storage and retrieve of information facilities, to provide the management with a tool with which to cut down on the time taken to provide results of evaluations. Result will be processed and presented at the click of a button. Hence computer becomes indispensable in results processing. Umar Suleiman College of education has been upgraded for some years now to be in affiliation with University of Maiduguri and therefore engaged in teaching/training of Degree Students. After Examination is conducted and scripts marked by lecturers, the way in which exam scores are recorded determine the speed at which final result and certificates are available. There is the need to bring in software that processes result at local level in order to enhance the speed at which final result becomes ready. Two major software will come to play here. The first one will be for individual lecturers to record their separate courses. While the second one will be a central program that captured the courses from different lecturers and enables all the courses in a department to be arranged together into a single table in the database. The two software engage in a software handshaking procedure, with the output database score of one becoming the input to the second one. There is data independence. The software is independent of the Results it process. Therefore results can be stored and arranged in organized way.

2.0 METHODOLOGY

The application was developed in the form of a database, using a Relational Database Management System (RDBMS). The decision to implement the application in the form of a database was informed by the consideration that various types of data would need to be held, and a database approach would be more appropriate due to the advantages that the database file system has over other forms of file systems (Bhardwaj & Singh 2011). According to Muntjir & Aljahdali, S. H. (2013), a database management system permits organizations to efficiently create databases for different applications by database administrators (DBAs) and any of other specialists. Muntjir & Aljahdali, S. H. (2013) reiterated that

Database management system allows many user application programs to simultaneously access the same database that is called concurrency. (Bhardwaj & Singh 2011)also employed Adobe Dreamweaver, an Integrated Development Environment, to create the Graphic User Interface and to write the codes, MYSQL (My Structured Query Language), a Relational Database Management System (RDBMS) to create the database tables and Personal Home Page Pre-Processor (PHP), a Scripting language to communicate with and manipulate the database. The primary features of the PHP are that it is object-oriented and a cross platform language. By cross platform, it means that the programs can run across several platforms such as Microsoft Windows, Apple Macintosh, Linux, and so on.

2.1 Method of Data Collection

A thorough investigation of functional requirement of the present system and finding out whether the requirements and objective of the system are being achieved was made in order to obtain detailed facts about the application area to be designed. Direct observation and examination of documents were carried out

2.2 Procedure

Examinations improve learning and enable people to take on new information. It helps to widen people's horizons and make them outstanding (Collins & Halverson 2018).Moreover, examinations have helped many to become better readers, learners and researchers. It is a means of assessment of how far the student has gone far in the teaching-learning process. After the conduct of examination, the next phase is to record and present the result which sometimes encounters a lot of problems especially when manual method is used. In order to overcome these problems, result processing software was developed for Umar Suleiman College of Education, Gashua in order to ameliorate the problems faced during result presentation. The package is a Window-based application that can be installed on a computer with WindowsXP or above. The application is user friendly and it has attached documentation (*Help*) which can guide through one who is not familiar with its use or a new user. Below are some of the important operational procedures of how to use the software.

2.3 Create new Result

This option enables the user to create a brand new result Database file. To create one Select: **Result File, Create New Result** from the menu option. The form for creating result Data will be displayed on the screen with the essential information about the course to be filled in which includes: Course Code, Course Title, Unit, Class Level, Department, Session, Semester, Lecturer's Name and Lecturer's Phone No respectively.

The screenshot shows a window titled "Create new Result". At the top, a note reads: "NOTE: The information you supplied here ARE VERY IMPORTANT! Please make sure that they are VERY CORRECT !!!". Below the note are several input fields: "Course Code", "Course Title", "Unit", "Level" (with a dropdown arrow), "Department", "Session" (with a dropdown arrow), "Semester" (with a dropdown arrow), "Lecturer's Name", and "Phone No". On the right side of the form, there are two buttons: "Create" and "Exit". The background of the form has a watermark of the Umar Suleiman College of Education logo.

Figure 1: Screen Form for Creating a new Result

The information supplied here are very vital and necessary for the creation of the result Data file, therefore it must be ensured to be correct because some of them may be used in the computation of GP and UGP for example the Course Unit. The course code must not contain special character like -,^,*,?. E.g. COM 112 is very correct, while COM*112 is very wrong.

Result data files are automatically created into the **C:\Result** folder, so the user need not to border about where to put the result. Result data files are created using the **Course Code** and the **Session** Field for easy identification. **NOTE:** Data File for a result only has to be created once.

The result data files are created with the **course code** and the **session** parameters. The result data file is **.Rst** file extension, it must be the one created with this program because attempting to load another data file that is not created with this program will result into error. The result data file that is either created or opened is made the **current result file**. If there is an existing one before, it will be discarded.

2.4 Open Existing Result File

This option enables the user to open an existing result data file. To Open result file, Select: **Result File, Open Existing Result** from the menu. The default folder that will be displayed will be the **C:\Result** folder, but the user can select another drive/folder where to open the result file from *if necessary*, for instance one can copy the result Data file from one computer to the other. In such a case the folder to specify will be in the drive one used to copy such as CD/DVD or flash disk.

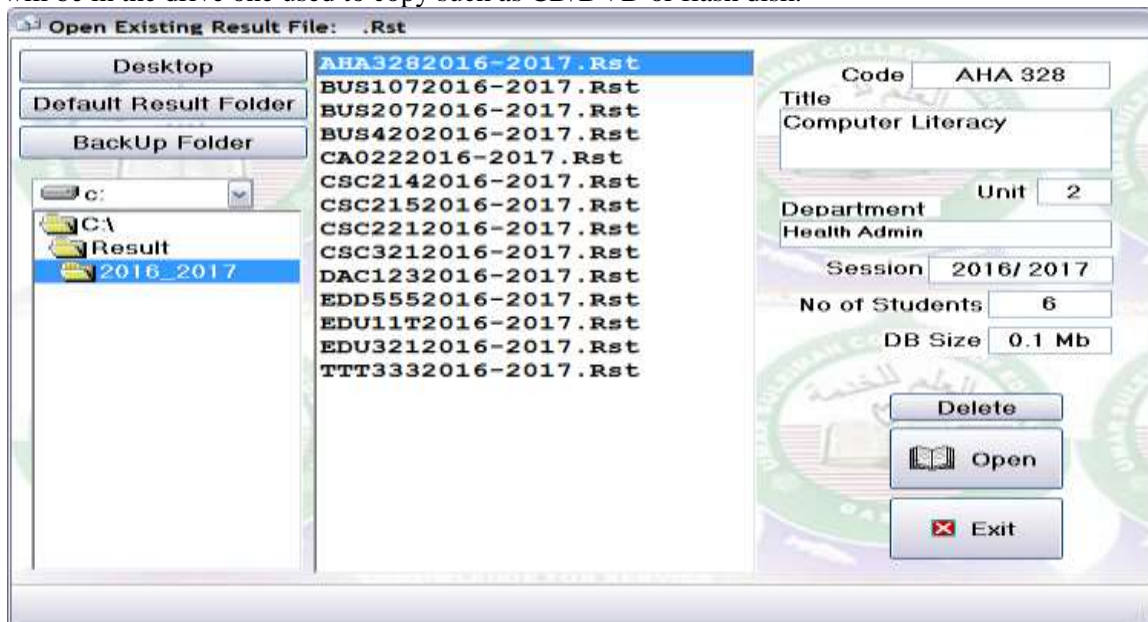


Figure 2: *Result Opening Form*

2.5 Copying Numbers from another Result

This option enables faster data entry when Results are to be entered for the same set of students for more than one time. Once Result for a set of students has been entered in a particular course, the number can be copied and transferred to a newly created result.

From the menu, select **Tools, Copy Numbers from another Result**. The numbers of the Current Result will then be copied from the other Result. **Note:** Numbers can only be copied into an empty result that has no student list.

2.6 Result Sheet Parameters and the Data Table

The result data which the program interprets to form the result sheet can be seen on the Data Table as shown below:

NCE Distribution		S/No	COLLEGE No.	TEST1	TEST2	TEST3	CA	EXAM	TOTAL	GRADE
No. of Stud:	58	29	12/10057	12	4	10	26	28	54	C
Unit(s):	2	30	12/10079	13	4	10	27	30	57	C
Page		31	12/10100	3	4	10	17	26	43	E
↑	A: 4	32	12/10150	7	5	10	22	33	55	C
↓	B: 11	33	12/10153	10	6	10	26	39	65	B
	C: 16	34	12/10189	14	4	10	28	28	56	C
	D: 6	35	12/10200	2	3	10	15	20	35	F
	E: 9	36	12/10257	9	6	10	25	43	68	B
	F: 12	37	12/10263	4	2	10	16	16	32	F
◀		38	12/10284	1	1	10	12	9	21	F
		39	12/10287	3	2	10	15	11	26	F
		40	12/10312	8	5	10	23	31	54	C
		41	12/10425	5	3	12	20	20	40	E
		42	12/10470	6	4	10	20	30	50	C
		43	12/10484	5	2	10	17	11	28	F
		44	12/10530	4	2	10	16	16	32	F
		45	12/10547	3	2	10	15	10	25	F
		46	12/10559	6	4	10	20	25	45	D
		47	12/10603	10	5	11	26	34	60	B
		48	12/10638	14	5	10	29	36	65	B
		49	12/10642	2	1	10	13	8	21	F
		50	12/10687	8	4	10	22	29	51	C
		51	12/10691	7	4	10	21	24	45	D
		52	12/10725	2	6	10	18	40	58	C
		53	12/10761	10	6	10	26	37	63	B
		54	12/10777	12	4	10	26	30	56	C
		55	12/10814	3	4	10	17	25	42	E
		56	12/10879	9	5	10	24	36	60	B
		57	12/10895	3	4	10	17	27	44	E
		58	12/10911	14	6	10	30	41	71	A

Figure 3: Result Data Table (Datagrid)

The result data is made visible on the screen by selecting Result, **Display Result**. The following are the titles of some columns on the Data Table:

CA: This stands for Continuous Assessment, which is the summation Test1, Test2 and Test3 on the Data Table. This can either be 30% or 40% depending on the programme.

Exam: This is the end-of-semester's examination score which can either be 60% or 70% depending on the programme.

Total: This is the summation of CA and Exam to be 100%.

GP: This is the Grade Point which is the weight in number allocated to the score range depending on the programme. Which can be either 1,2,3 etc.

UGP: This is obtained by multiplying the GP with the Course Unit.

Note: The columns COLLEGE_No, Test1, Test2, Test3 and Exam are *editable* by the user where the Lecturer can supply the Student ID, scores in CA and Exam. The columns S/No, CA, Total and GRADE cannot be changed by the user. The program calculates what are to be there as appropriate.

2.7 Entering Scores

This is one of the most vital procedures of this program. There are two ways of doing this, by going through **Scores, Enter Scores** in the menu or through the result Data Table when it has been made visible by selecting **Result, Display Result** on the menu. But the best way is to go through the Data Table. In fact the **Score** Menu is disabled until a Course File has either created or loaded. To enter scores:

1. Scores can be entered into the database directly through the data table grid, but only the columns **TEST1**, **TEST2**, **TEST3** and **EXAM** are **editable**. The columns **CA** and **TOTAL** have to be calculated by the program itself. Click on **Empty** to provide empty rows where you can enter students' records. The number of empty rows created will depend on the figure typed in the textbox in front of Empty button. It can range from 1 to 99. Entering a null value into a cell or deleting the content of a cell may create error, to delete the content of a cell, simply put 0 there.
2. **Select: Score, Enter Score** (*less advisable*) from the menu option, this will give you an option to select the score you want to enter whether **Test1**, **Test2**, **Test3** or **Exam**. Some or all may be selected. When score is to be entered, the row for the student is created once. For example if Test1 (Ca1) is entered the first time, the row for the student will be created, but if in another time Test2 (Ca2) is to be entered, once the student number that has already been entered comes in, it will not create a new row but will be filled in the row that has already been created for the student.

After entering the CAs and the Exams for the students, simply click **UPDATE** to instruct the computer to do all necessary computations and rearrangements.

2.8 Numbering

Numbering is one of the great issues that have to be understood in the use of the program. The computer is a machine, and can't reason like human being (*it can only mimic human being in artificial intelligence*). The method and format of the numbering for all the students must be exactly the same. For example if a student no is: **11/34865**. Presenting it to a person to be: 34865, 011/34865, 2011/34865, II/34865 may be understood by a human being to be carrying the identity of that particular students, but the computer will not take it like that. The computer sees what is presented as four different numbers. So in the computer **I** is not **1**, **O** is not **0** (*i is not one, o is not zero*).

The lecturers must stick to the same (*singular*) format of writing the students' numbers: The preferred format choice for this program is: **YY/XXXXXX** e.g. **13/17432**, **14/66784**, **15/28654** etc. Computer takes into consideration digits of numbers; and students' year of admission e.g **15/16211** is not the same as **015/16211** or **2015/16211**.

2.9 Data Table Activities

The following are the various operations that can be performed on the Data Table as displayed on data entry screen which consists of students' scores:

Updating: This is to carry out all necessary additions and grading for all the students and rearranging the students in order. This can be achieved by clicking the **Update** button.

Delete Row: This enables an unwanted student Number to be removed from the list. This can be achieved by clicking the **Delete** button.

Delete All: This option is useful if one wants to wipe-off the result list, it must be handled with care. It will remove all students from the list, leaving it blank. Conscious efforts must be taken to ensure one knows what he/she is doing before administering this option, because once the results are lost, they cannot be regained back.

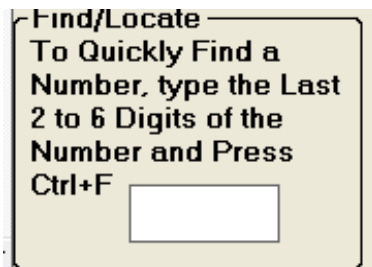
Clear Column: This deletes the entries in a particular column for all students. This can be achieved by clicking **Clear Column**.

Empty: This creates empty rows where to type in more students. Type the number of empty rows to be created (1 to 99) in the Empty-row textbox, and click **Empty**.

Unempty: If the number of empty rows created are more than the ones needed. Unempty *deletes* the remaining empty rows that have not been used.

Visibility: For quick data entry with quick easy accessibility, select the column to be made visible on the screen.

Quick Finder: This enables the location of a number quickly especially when searching for a student in a list of plenty students. Type the last few digits of the student number in the Quick Finder box as shown below and press **Ctrl+F**.



Entering CA and EXAM at Different Times: One of the major opportunities that make the program very viable is the ability to enter different columns at different time, even if the number of students is much. If two or more different columns are to be entered at different times, the first column to be entered is the only one that will be entered with the students' numbers. Since the number is already there when entering the second column, the Quick Finder option will be used to find the student concerned by typing the last **2 to 6 digits** of his/her Matric Number in the Find/Locate Textbox and press **Ctrl+F**. The student will be located immediately so that his/her score can be placed in the new column on the Data Table.

2.10 Edit Result Information

This option enables the primary information about the result to be corrected after it has been typed wrongly. This option can only be activated if a result file has either been loaded or created. To correct (*edit*) the primary information about a result, select **Tools, Edit Result Info**. The current information about the result will be displayed, and then you can change it to what you want and click *Edit* to change it, or click *Exit* to leave it as it is.

Figure 4: *Edit Result Info Form*

2.10.1 Making Report

Report is the end product of the whole process. It is the very aspect of the result process that will be presented to the appropriate authority. The program automatically generates the report in the required format. The information supplied while creating the result data file and the values in the result Data Table will be used to generate the reportsheet for the course because it has been stored into the database. From the menu, select: **Report, Ca/Exam**, this will take you to the main Report Form and give you the opportunity option to select the type of report to be generated by the program as shown below:

Figure 5: *Report Form*

After the appropriate reportsheet option has been selected for the appropriate program in the College, the program will do some calculation on the records in the database and generate the ResultSheet. Note that report generated in this way is very precise and accurate in counting the numbers of **A,B,C,D,E** and **F**. The report to be generated is in different dimensions of the various programmes operated in the College which has been incorporated into the program: NCE, PGDE, Diploma/Certificate or Degree.

After selecting this option the program will then generate and present the ResultSheet for the course on the screen view as shown below:

NCE

Line Height
 1 2 3 4

More than 4 Pages?
 Insert Page Number

Convert to PDF

Fixed Zoom%
 75% 100%

Close
 Exit

Zoom 100%

Umar Suleiman College of Education, Gashu'a, Yobe State.
OFFICE OF THE REGISTRAR
 (ACADEMIC AFFAIRS DIVISION)

Level: Certificate Semester: 1st Session: 2014/ 2015
 Department: HURDEC No of Cand: 18
 Code: CA 011 Title: Computer Fundamentals Unit: 2

SN	COLLEGE REGD NO.	S.E 60%	C.A. 40%	TOTAL 100%	LETTER GRADE	GP	W.GP	REMARKS
1	CP/14/1852	4	16	20	F	0	0	Fail
2	CP/14/1896	38	23	61	B	4	8	Pass
3	CP/14/1897	19	21	40	E	1	2	Pass
4	CP/14/1898	13	27	40	E	1	2	Pass
5	CP/14/1899	22	19	41	E	1	2	Pass
6	CP/14/1901	26	20	46	D	2	4	Pass
7	CP/14/1902	53	26	79	A	5	10	Pass
8	CP/14/1903	9	17	26	F	0	0	Fail
9	CP/14/1904	33	22	55	C	3	6	Pass
10	CP/14/1905	48	25	73	A	5	10	Pass
11	CP/14/1906	2	15	17	F	0	0	Fail
12	CP/14/1907	54	26	80	A	5	10	Pass
13	CP/14/1908	4	16	20	F	0	0	Fail
14	CP/14/1909	20	20	40	E	1	2	Pass
15	CP/14/1910	50	25	75	A	5	10	Pass
16	CP/14/1911	39	23	62	B	4	8	Pass
17	CP/14/1912	6	16	22	F	0	0	Fail
18	CP/14/1913	29	21	50	C	3	6	Pass

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Pages: 1

Figure 6: Result View Screen

The result view screen contains a lot of option to properly arrange the result, they includes:

Line Height: The *Line Height* options enables the result to be positioned appropriately on the page. It specify how the list will be extended or compressed on the page.



Page No: The *Insert Page No* option enables the result to be paginated, this may be necessary when the numbers of pages are much.



Convert to PDF: Since what the program does is to convert the result data into ResultSheet. A computer that does not have the program installed on it will not be able to generate Reportsheet from the result data. To do some other things about the result on another computer that doesn't have the program, the best way to handle it is to convert the result to PDF Format so that operations such as *printing* can be performed on the PDF version on the other computer.



2.10.2 Toolbars

The program is menu-driven. But in order to enable quick operations, there is the toolbars which contain simple icons especially on events that are being carried out frequently such as opening result, creating result, report making etc. these icons can be clicked to accomplish the same task of going through the menu.



Figure 7: *Icons on the Toolbar*

2.10.3 Copy Result Data

The use of this software has paved the way for another program to come to play for collated result presentation at the end of the semester and the computation of student CGPA at the end of the session. When processing result for a course, this program will create a simple Microsoft Access Database for that course. This database, which is an output of the program, will now serve as input to the CGPA computing program. The CGPA program will then load the result Database created by this program into a central collation database. To copy the Result Database of a course, select **Tools, Copy Result Database** from the menu. The form below will be displayed on the screen:



Figure 8: *Copy Result Data Form*

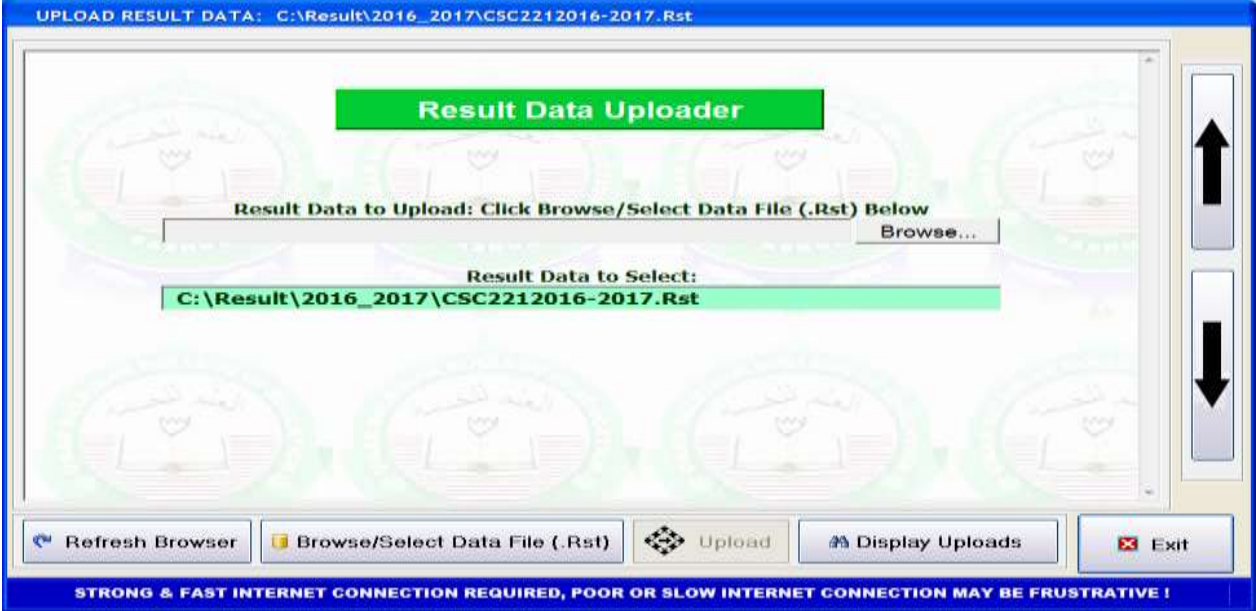
Specify the destination where to copy the result data to and click **Copy**. Then the Result data of the current result will be transferred to the specified destination. This softcopy which is the output of this program can now be forwarded to serve as input to the Collation program for the computation of CGPA at the end of the session and other activities on result presentation in the department as the need may be.

2.10.4 Uploading Result Data

The Result database that is generated by this program serves as input to centralised result processing system. Therefore, result processing in the school flows from softcopy to softcopy. Submitting the result data to the central office may be through a direct copy of the database or it can be uploaded to an account on the College Website. This gives the opportunity for lecturers that are far away to be able to submit the

softcopy of their result to the central office without the need to be on journey over a long distance. To upload result data:

Open the Result, Connect to the Internet, Select **Tools, Upload Result Data**. Then the Uploading Browser Control will be displayed:



Select The Result to upload by clicking **Browse/Select Data File (.Rst)**

Then click **Upload** to upload the result data.

Note:

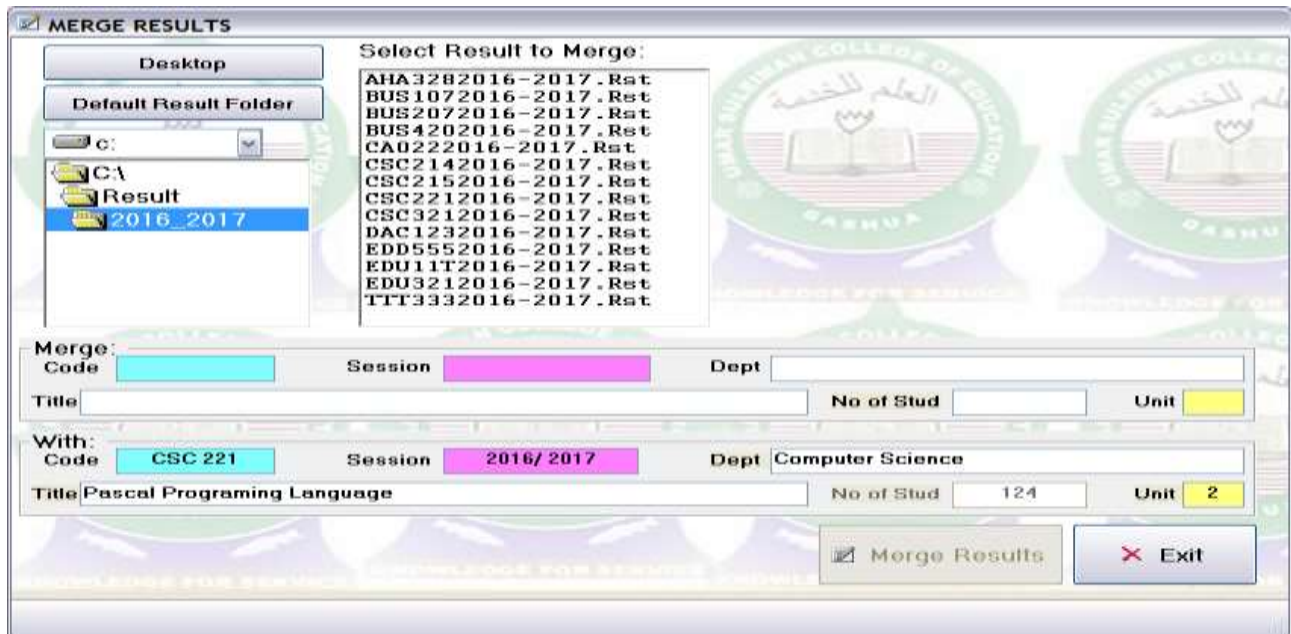
- What is displayed under Result Data to Upload and Result Data to select must be exactly the same for the procedure to work.
- Fast and Strong internet services are required for this operation. Weak or slow interne services will be frustrated.

2.10.5 Merging Results

This feature is required for situation where a single class is divided into more than one group because of the population and the results of these groups are compiled by different lecturers into different database files. Then these different database files has to be merged into a single database file so that the result can be administered at the central office on a single database.

To merge two results the results must have the **same name** advisable appended with a single character to make them different since two files with the same name in a single folder can not bear the same name. e.g. if the name of the first database is:EDU342016-2017.Rst, the second can be named as EDU342B016-2017.Rst. The first 6 characters of both of them must be the same. This can be achieved on the second database by opening the Result, and edit the name as EDU 324B, since Results Database name is derived from the course code and session e.g. BIO 112 in 2015/2016 session will be named as BIO1122015-2016.Rst.

Then open the result on which to merge another result to, Then select **Tools, Merge Results**. Then the merge result form will pop up



Select the Result you want to join (merge) to the currently loaded Result and select **Merge Results**. Then the selected result will be merged with the current result.

Note

-Make a backup of the results before merging them because this operation is not reversible. Once you merged results, you cannot detach them again.

-The 1st 6 Characters of Course Codes, Session and Units in both courses must be the same in order for this operation to work.

3.0 Major Features and Components of the Software

The computer software application is required to operate on windows platform; it is designed to be used by different lecturers on either personal computer which they will use to record their individual courses. These courses are collected by Head of Departments (HOD) and brought to the Management Information System (MIS) unit for coalition of the whole departmental result.

The Main menu:

The main menu contains dashboard and panel, on the dashboard sub menu which serves as a link to all other modules in the program, the sub menu are; Result File, Scores, Report, Tools, Degree Tools, About This Program. While the panel holds the forms for capturing data and display query result.

3.1 Summary

The research paper culminated in the design and implementation of a software application, meant to ease the processing of students' results in Umar Suleiman College of Education Gashua Yobe State. The application was successfully developed, tested, and found to be working as expected. It is capable of storing and processing students' results with high speed and accuracy, and presenting output in certain required forms. It has some qualities such as reduction in the cost of processing; reduction in time spent in computing student's first and second term results, and elimination of duplication of effort which makes it overshadow the manual system of students' record keeping. The new system is flexible and can be modified to suite any kind of record keeping and data processing. It uses graphical user interface (GUI) rather than command-line approach, hence is easy to use, reasonably secure, and enforces data integrity resulting from the use of a Database Management System. With this application, the processing of

students' results can be automated to a large extent, thereby reducing processing time and increasing accuracy.

3.2 CONCLUSION

Within the context of utilization this application system can be of tremendous help in solving some of the identified problems in administering student results. The developed system can be packaged and improved upon to become a generic one that can be deployed for commercial use. To realize this however, there is a need to carry out activities such as Data test, User acceptance testing, System Review and Deployment. The documented processes in this paper are also good source of information for further database system development and data analysis especially for academic work in data structures.

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