

Result Processing System for Hand Held Mobile Devices

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ABSTRACT

Examination remains the only option to assess a student's understanding of a course. Several automated result processing systems involved the compilation of students result at the end of each semester. The results after the compilation and processing by the exams and records is forwarded to the department and faculty for record purposes. Students are required to go to their department notice boards to see their results. Most often, the results are often torn and removed such that students may not be able to know their scores in the respective courses. Students, as major stakeholders should be availed timely access to their scores and overall performance by instant computation of Grade Point Average (GPA), and CGPA at the end of the semester. The paper examined the inadequacies involved in the current system of automated result processing and presented a new form of Result Processing that enables students to get instant results at the end of every semester using their hand phones. The system calculates the Grade Point Average (GPA) and the Cumulative Grade Point Average of each student at the end of each semester and forward it to the student. With that, the student will know his or her performance at the end of every session. The system was designed with HTML, and PhP at the front end while MYSQL at the back end. The system was implemented in Windows 8 and the result was that students were able to get their GPA and CGPA at the end of each semester.

Keywords: Automated result processing, Cumulative grade point average, examination scores, grade point average, and hand phones.

INTRODUCTION

Examination is an important part of academic activities within institutions of learning. 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/inefficiency [1]. Final result of examination enables students to know the courses they pass and the ones they failed. The job of compiling student results is tedious. Most often, the staff that are responsible for processing students' results as required are equally involved with other academic activities such that result processing is delayed [2].

There are many general based computer software that have been developed to assist examination and record staff in compiling and processing result. Some of the spreadsheet packages such as

Microsoft Excel, Lotus 1-2-3, Matlab, Mathcad, etc. all have facilities for entry and processing of results. Unfortunately, they are not customized to solve unique problems of individual institutions [3].

There are specific based software systems that were designed to solve unique problems of individual institutions. Among them are the various computer based test software like the one in use at the Federal Polytechnic, Oko, and the software developed by [4, 5].

Unfortunately, most of the software are limited to sending students' scores and grades to the students' email boxes. With such systems, students who do not have access to email are deprived timely access to their results. Also, informing a student of his scores and grades in different courses in a semester can only make him to know his performance in

the courses but not the overall performance in relation to the performance of other students in the class. Some students do not know how to calculate the GPA while some feel nonchalant about such calculations [6].

The new software registers a lecturer and enables him to submit his continuous assessment and examination results. It also registers a student and

enables him or her to view results. Using the results submitted, the system calculates the Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) for each student. After the calculation, the system forwards the scores and grade of courses for the semester, the GPA and CGPA directly to a student's hand phone [7, 8, 9].

PURPOSE OF STUDY

The purpose of the study is to design and implement a new form of result processing that enables a student to get his or her instant result which includes the scores in the respective courses taken, the GPA and CGPA at the end of each semester using his hand held mobile device. A parent that wish to have the result will request and the

result will be sent to him. This would help to reduce the incessant cases of result delay and enable parents to access their wards' performance. Education not only serves as a feedback for the trainer to ascertain the level of knowledge acquisition but also serves as a measure of knowledge retention by the trainee.

LITERATURE REVIEW

A result is an official school report on the record of student, listing courses and grades received [2]. There are so many processes that are involved in result preparation. Most of the activities involved in result preparation were usually done through manual processes. Such manual processes have a lot of challenges. Due to manual system, the desk officers both in examination and records and statistics who are in charge of result processing find it difficult to edit documented results and cancel out some errors such as omission or wrong entries. Even though these corrections are made, the paper work will look mutilated [4]. Therefore, there came the need to introduce computer systems in the handling of result processing. [6], identified the benefits of computerized test taking, marking of results and result publication to include minimization of human interference, facilitation of management to see trends in result at various levels, and minimization of redundancy. It is the policy of university to improve both the efficiency and effectiveness of course registration and result processing operations and services through the implementation of an integrated database system [8]. The need to improve result processing led to the introduction of so many automated systems. Presently, automated software has overtaken manual processes in

many ramifications. Each automated though has its own achievements, has its own limitations.

Using computer to handle result processing passed through different stages. There are universal applications that are used to process results. Microsoft Excel spreadsheet program is a good example. It can be used to build an intelligent knowledge-based system linking use of various programming facilities provided by the application. The programming is hard coded into the cells and cell referencing which could be applied to monitor and track student's performance such as cumulative points [9]. Other statistical packages such as Mathlab, Mathcad, Statistical Package for Social Sciences (SPSS), can also be used to solve result processing problems.

However, general purpose applications cannot handle special problems of institutions that are tailored toward computer based examination, GPA and CGPA calculation, and posting of result to the candidate and school management. This led to the design and implementation of customized software for individual schools. Most of the software in this category can send score and grade to the student but not GPA and CGPA. Most of the software can only send the GPA and CGPA to the Exams and Records. The proposed software uses the National Board for Technical Education (NBTE) grading system to

award grade to a score in a subject. Thereafter, it calculates the GPA and CGPA and forwards the results to the

Exams and Record as well to the student's hand held mobile device.

METHODOLOGY

The methodology adopted for this study is Object Oriented Analysis and Design Methodology (OOADM). The model involved the development of modular designs which could be done in real world terms or domain specific terms by adoption of appropriate relative names. Relational database approach was adopted. My Structured Query Language (MySQL) was used to develop the appropriate database. MySQL is very

fast, reliable and easy to use and its connectivity, speed and security make it highly suited for accessing database. Hypertext Pre-Processor (PHP) which is an object oriented script language that is ideal for online and internet activities was used to interface and link the database. The advantage of PHP is that it is a cross platform, i.e. it can interface with several operating system platforms.

DISCUSSION

The system was designed and implemented such that the following activities were accomplished:

- a. Commencement: This shows how the program begins. Once the software is clicked it commences operation.
- b. User validation: This ensures that only registered staff and students can be able to use the software. The administrator has to register himself with a default username and password. He then registers staff and students respectively and assign a username and password to each of them.
- c. Module activation: There are four main modules - registration (administrator, lecturer and student; lecturer, student and result processing. Each of the modules once selected is activated.

The registration module is the platform that enables an administrator to register himself, the lecturer and the students. The registration involves assigning user name and password to each of the lecturer in the school. Other details of the lecturer such as his department, school and rank are also captured

during lecturer registration. A student is also assigned a user name and password along with his or her telephone number. The telephone is used to post the result to the hand help mobile device.

Another module in the system is the lecturer module. The module enables the lecturer to upload his results. The result includes the continuous assessment and examination which is provided in softcopy form. Any error should be corrected before a lecturer uploads his result.

The next module is the student module. The module enables a student to view his score and grade in a course including the grade point average and cumulative grade point average which is forwarded to the student at the end of a semester.

The fourth module is the result calculation and processing module. It is the module that calculates and generates the GPA and CGPA of each student at the end of the semester. The module handles delivery of result to student's mobile hand phone

The program logic flow is as shown in Fig.1 below:

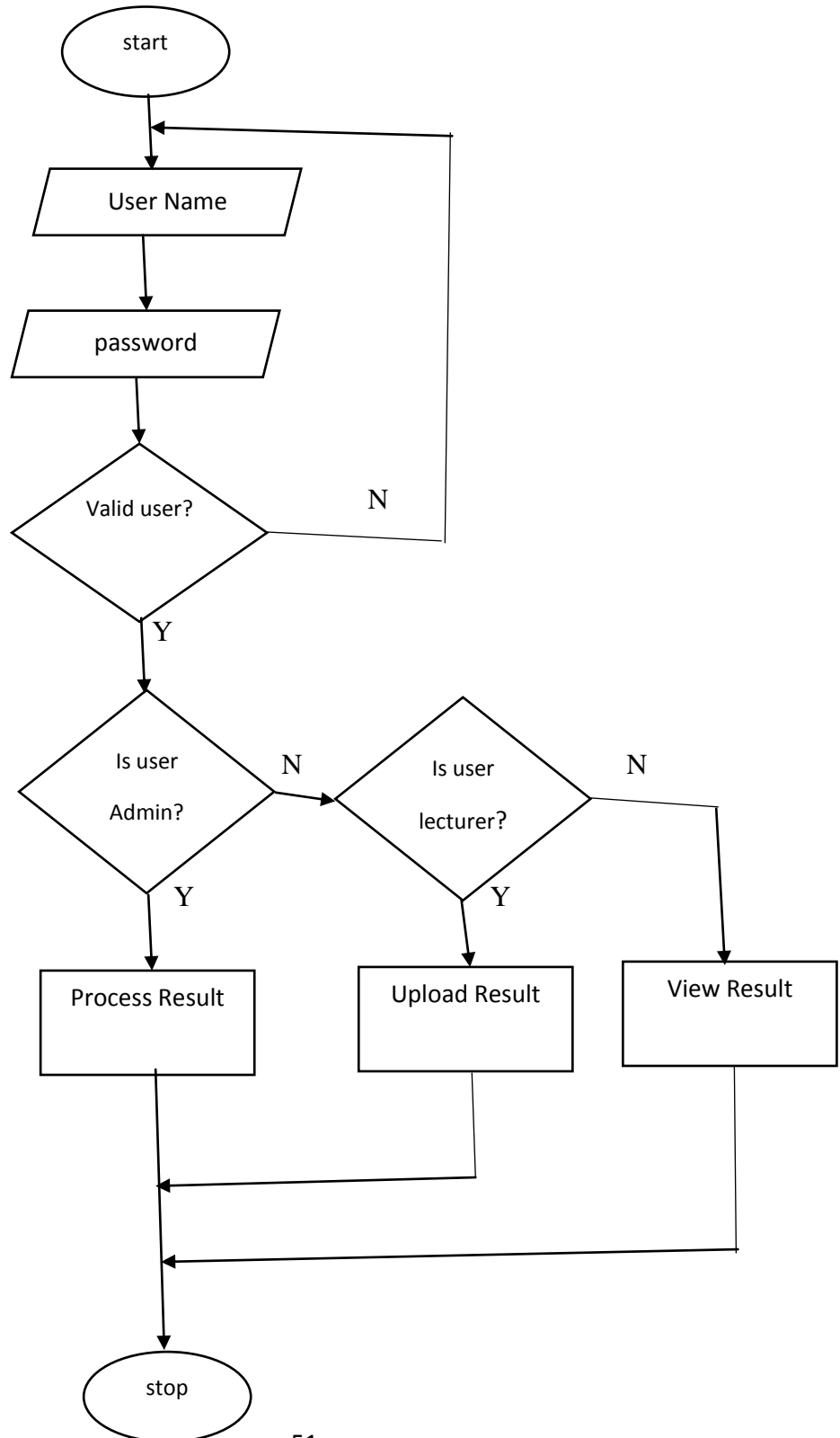


Fig. 1

Program Flow

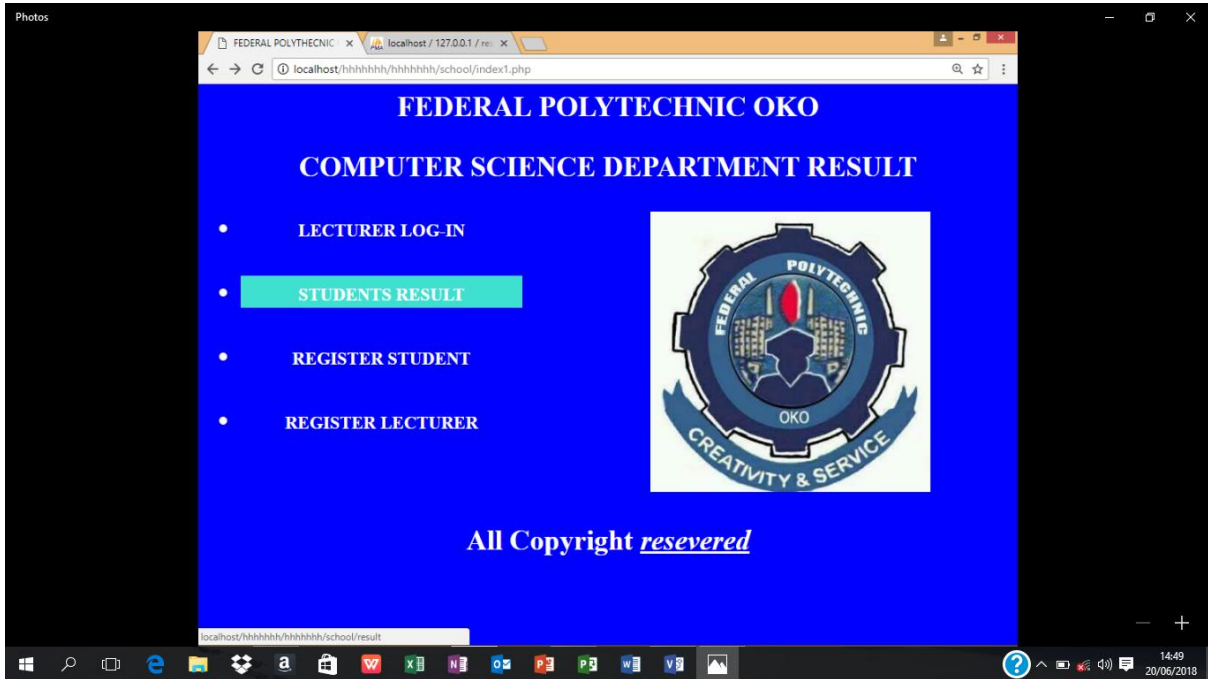


Fig. 2

Registration/Login Interface

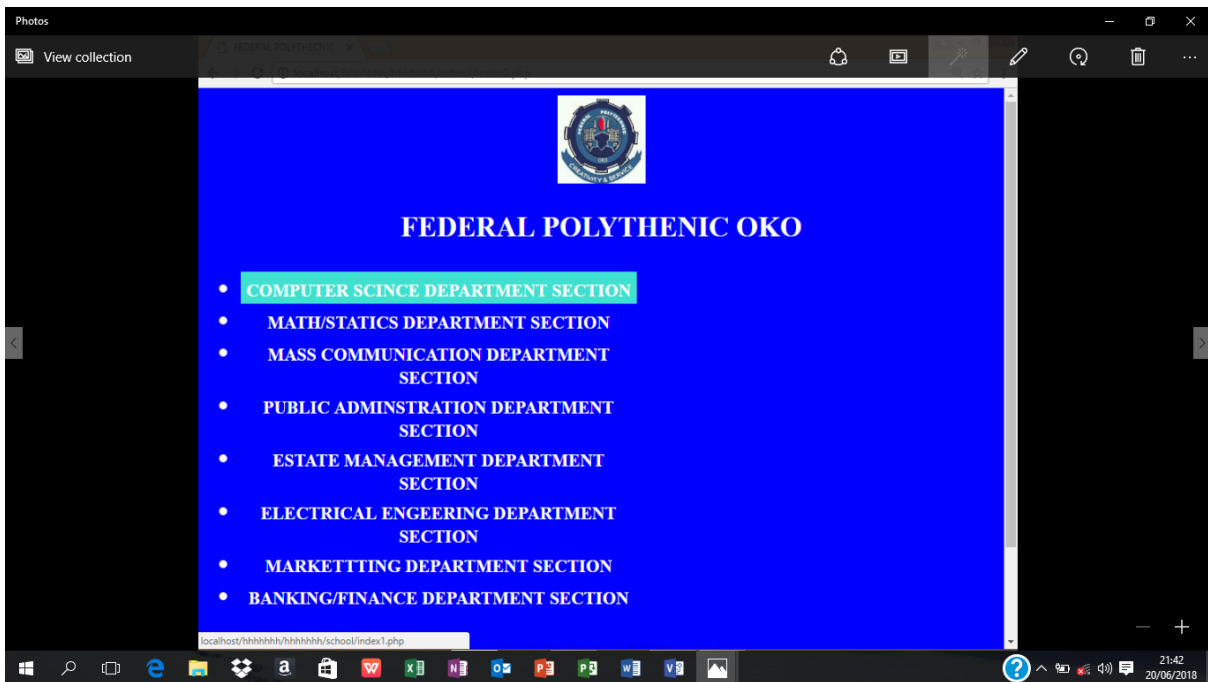


Fig. 3

Department Selection Interface

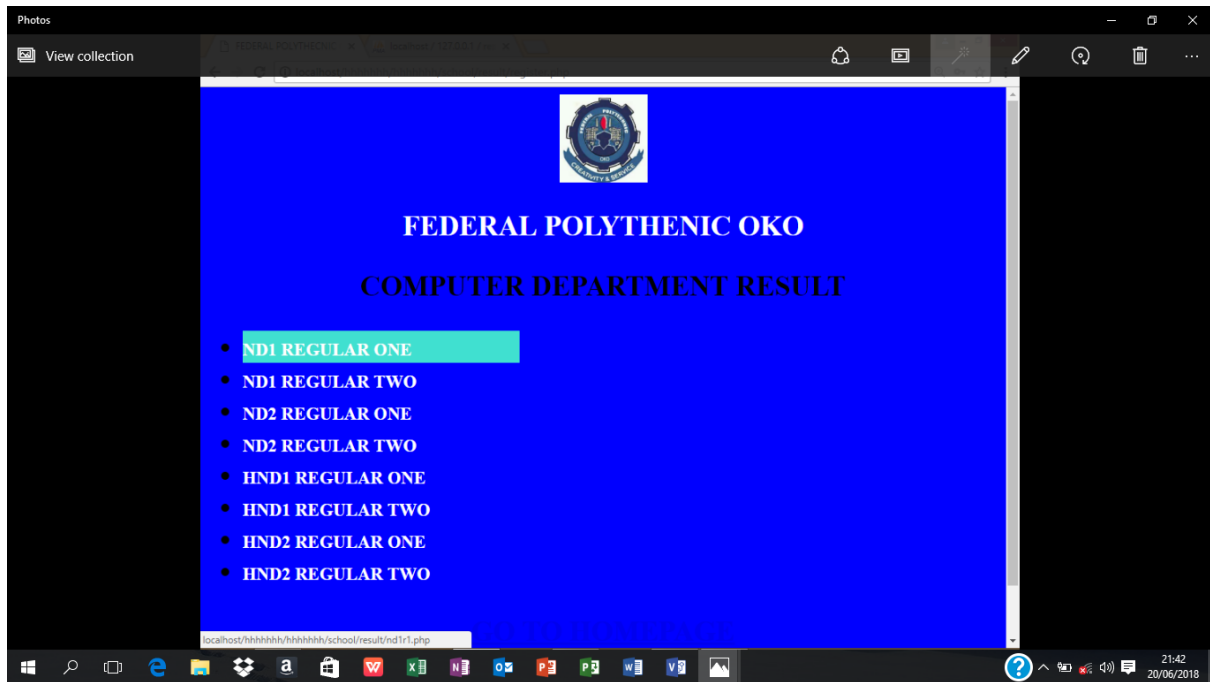


Fig:4

Programme Selection Interface

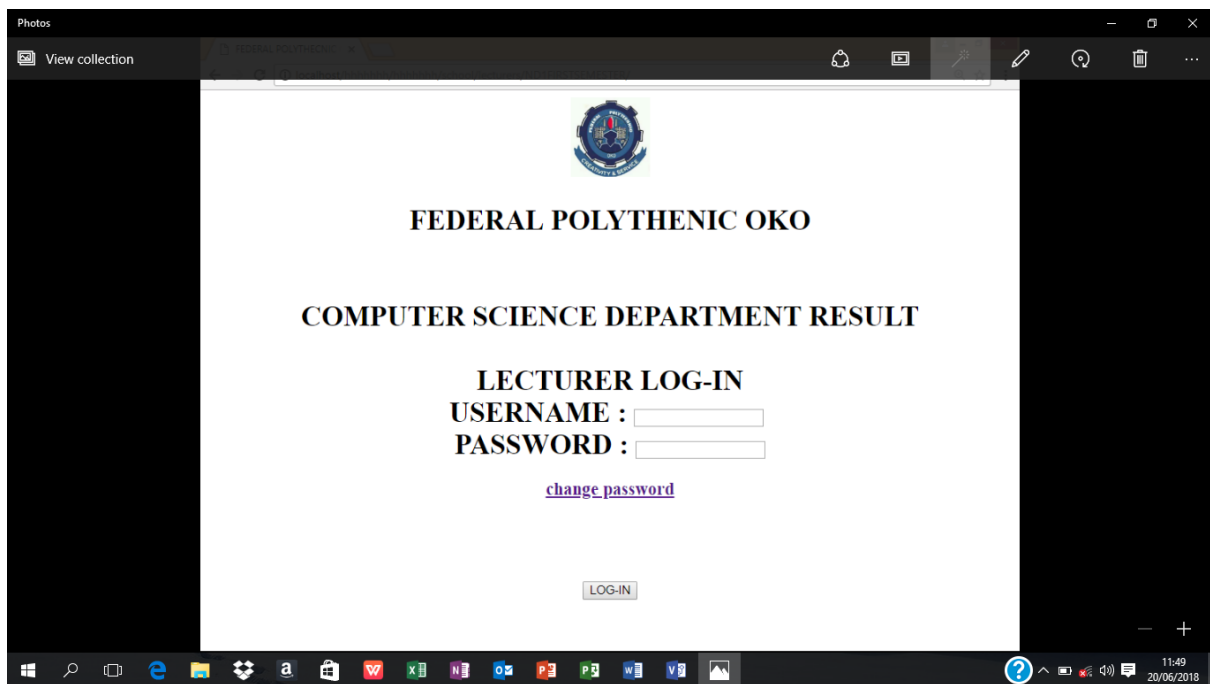


Fig 5

Change Password Interface

REG. NUMBER ENTER REGISTRATION NUMBER

REGULAR 1 ND1 COMPUTER SCIENCE FIR RESULT

S/N	NAMES	PHONE NO.	ENTER CREDIT HOUR	CREDIT HOURS	5	5	5	5	5	5	5			
					COM 112	COM 113	MTH 111	MTH 112	STA 111	STA 112	OTH 1			
1	MAMAH MALACHY CHINEDU	08069800675	89	A	99	A	99	A	99	A	77	A	99	A
2	EZE GRACE IFUNANYA		77	A	77	A	77	A	77	A	55	C	77	A
3	ODO TOOCHI EMMANUEL		85	B	65	B	65	B	65	B	77	A	65	B
4	NELSON JOE VALENTINE		55	C	55	C	55	C	55	C	55	C	55	C
5	NNAJI NECHE ROSEMARY		56	C	56	C	56	C	56	C	55	C	56	C
6	NNAJI NECHE ROSEMARY		43	P	43	P	43	P	43	P	78	A	43	P
7	UGWU CHARLES MADUABU		32	F	32	F	32	F	32	F	86	A	32	F
8	UGWU CHARLES MADUABU		76	A	76	A	76	A	76	A	44	P	76	A
9	FLORENCE NNAJI GUCCI		54	CD	54	CD	54	CD	54	CD	43	P	54	CD
10	ODO IFEANYI BENJAJ		43	P	43	P	43	P	43	P	76	A	43	P
11	ODO TOOCHI EMMANUEL		54	CD	54	CD	54	CD	54	CD	55	C	54	CD
12	NNAJI NECHE ROSEMARY		85	B	65	B	65	B	65	B	44	P	65	B
13	NNAJI NECHE ROSEMARY		53	CD	53	CD	53	CD	53	CD	77	A	53	CD
14	NNAJI NECHE ROSEMARY		99	A	99	A	99	A	99	A	76	A	99	A
15	NNAJI NECHE ROSEMARY		89	A	89	A	89	A	89	A	67	B	89	A
16	NNAJI NECHE ROSEMARY		76	A	76	A	76	A	76	A	67	B	76	A
17	NNAJI NECHE ROSEMARY		85	B	65	B	65	B	65	B	77	A	85	B
18	UGWU CHARLES MADUABU		85	B	65	B	65	B	65	B	77	A	85	B
19	UGWU CHARLES MADUABU		67	B	67	B	67	B	67	B	55	C	67	B
20	UGWU CHARLES MADUABU		75	A	75	A	75	A	75	A	76	A	75	A
21	UGWU CHARLES MADUABU		84	BC	64	BC	64	BC	64	BC	55	C	64	BC
22	UGWU CHARLES MADUABU		85	B	65	B	65	B	65	B	67	B	85	B

Fig. 6

Digital Result Sheet

FEDERAL POLYTHENIC OKO
COMPUTER SCIENCE DEPARTMENT RESULT
CHANGE OF TELEPHONE-NUMBER

OLD TELEPHONE-NUMBER :

NEW TELEPHONE-NUMBER :

RE-TYPE TELEPH-NUMBER :

[BACK](#)

Fig. 7

Telephone Number Registration

Fig. 2 is the registration/login interface. The administrator has the sole duty of initially registering himself, and registering the lecturers and students. During registration, a user has to be assigned a username and password. Without the username and password, a person cannot be granted access to the software.

The duty of the administrator is register the lecturers and the students. When a lecturer is registered, he can submit his result to the administrator. When all the lecturers have finished submitting their results, the administrator will press the compile button. The compile command will trigger the generation of GPA and CGPA. The print command will print the hard copy and for delivery to the Exams and Records. The result is also forwarded to the hand phone of the student.

The student can only view the results. He will view the score and grade for each course, the GPA and CGPA.

Fig. 3 is the interface for selection of department. There are several departments which the user can select to enable him commence operation. Some of departments are Computer Science, Maths/Statistics, Mass Communication, Public Administration,

Estate Management, Electrical Engineering, Marketing, Banking/Finance, etc.

Fig. 4. is the interface for selection of programme. The programme could be National Diploma (ND) or Higher National Diploma (HND). There are ND1 and ND2, and also HND 1 and HND2. For each of the ND and HND, there are regular 1 and regular 2. A lecturer will select the programme that he wants to upload its result.

Fig. 5 is the interface for change of password. When a person feels that his password is no longer secure, he will change the password through the interface. When a person forgets his password, the administrator will assign a new one to him.

Fig. 6 is the digital result interface. It shows the composite result of all the students in the class. From the scores, the GPA and CGPA are generated and posted to the Exams and Records as well as to the student concerned.

Fig. 7 is the interface for telephone registration. Each registered student has his telephone number linked to the database so that whenever, the result is processed, it can be forwarded to his hand held mobile device.

CONCLUSION

The new system has the capacity of achieving the following: (i) the lecturer can upload result after the semester. The result will include the continuous assessment and examination of a course taken at the semester; (ii) the administrator will enable the system to calculate and generate the grade point average and the cumulative grade point average of each student in the semester; (iii) the score of a student including the

grade point average and cumulative point average will be sent to the student's hand held mobile device. With the new system, the student will immediately know his performance in each course at the end of the semester. He will also know his grade point average and the cumulative point average. With such awareness he will know how to improve on his studies.

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