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Abstract: Processing of results is a process embarks upon in every semester ending by academic staff to, convert student examination scores into a meaningful information (transcripts and results). This paper is internet-based result processing enhance system that will over-come the undesirable problem associated with misplacement of student academic standing data and poor information handling. The objectives of this paper is to make students record to be easily accessed and retrieved with full, reduced handling processes, which will lower cost of data processing, since information is normally stored in a database with reduced data redundancy, thereby preventing over-working of personnel. This new system is designed using PHP, JavaScript and MySQL Server, for its simple syntax and its features in developing web applications.

Keywords: Result processing, data-based, web-based, application, assessments

Introduction

The admission of students into the universities has increased tremendously and now becomes an issue for the work force to handle the magnitude of examination work within a specified time frame, which leads to delay in results publications (Amadin and Ukaoho, 2015; Oilabu *et al.*, 2015). Result preparation is a routine activity in most academic institutions. In every semester ending in our tertiary institutions examinations are conducted to assess the performances of the students. The performance assessment usually comes in various ways, examinations, tests and laboratory practical. Student performance assessment is an important parameter to uphold standard of learning in our schools. In primary and modern secondary school systems, the pupils and the students are graded in positions that make them work hard to make the best result. The tertiary institution system is no difference.

In every semester ending results are computed. In tertiary institutions creation, maintenance, accessibility and retrieving of student's data are top most priority areas of interest. Information management in institutions is very crucial for accurate student data handling. Student data, if not carefully created and stored, errors might occur in usage.

(Okpeki and Adebari, 2012), the use of information systems is an entrepreneurial activity. In order to have good information system, attention has to been given to data gathering, processing, storage, entry and analysis (Okonigene *et al.*, 2008; Ezenma *et al.*, 2014). All educational settings requires proper data management and processing system, using computers for student data processing, makes the computation easier and possible to obtain students records like course information, Grade Point Average, generating grandaunt list, failed courses, proper records update and secured data storage. Adigwe and Okoye (1998), Emmanuel and Choji (2012) defined data as a process of converging or manipulating data into meaningful data information. The information gathered and processed at the end are the results. In the Universities, the results produced inform the authority about the student performance in various courses in their various departments. The results contained are used to ascertain the level of students understanding of the entire courses taught. From the survey conducted on how the Departments in University carries out its result computation, transcript generation, it appears that current method adopted needs improvement.

In our tertiary institutions the Five-Point Grading System is been used, courses offered are allocated credits hours which varies from course to course and grade points scored in a course determines the performance of that student in that course. The grade-points are calculated by multiplying the value of the grade by the credit hours of the course. The total

grade-points are computed by summing all the grade-points of courses offered. Student Grade-Point Average is calculated by dividing total grade-points scores by the sum of credit hours of all courses taken in that semester. The Cumulative Grade Point Average is an important determinant that determines the student progress either to move from one level to another or be in probation or withdrawal from programme of study. The Cumulative Grade Point Average determines the class of degrees awarded to student that eventually completes the programme.

The current method of students result processing is the manual system and this new system is automated and web-based. The objective of the study is to develop and implement a web-based result processing and transcript generating system.

Several authors and researchers have taken step towards analysing the problems associated with manual method and the need for computerized result processing. In Akinmosin (2014), the author designed and implemented automated student results management system, he used Oracle database and his empirical assessment clearly showed, the system fastened the whole process of students results preparation. In Pecham and Joseph (1995), the authors hold the view that various operations in our institutions such as data processing, result computation will be faster, more accurate and less error using computer system.

By adoption of computer into information management has tremendously improved the information need of organizations; the success of this system is knowledge base dependent. (Anigbogu, 2000), defined a computer as an electronic system that accept data and instructions, processes the data based on the instructions to generate output in a manner that is yet to be as fast by any other known system in existence. In this new millennium, no establishment and institution can do without data processing system. In Ukem *et al.* (2012), the authors Stated that errors inherent with the current manual results processing method in most Nigeria universities, makes it challenging to adopt computerized approach in measuring students' progress. In his views, the manual methods being employed suffers severe setbacks, these makes the process cumbersome and prone to errors. Manual computation methods leads to late publications or release of results most often with wrong grades being computed for students which could lead to wrong degrees been awarded. Few students could be awarded undeserved good class of degree, while others are not and this could lead to frustration and ill feeling. This can ruin the reputations of departments and that of the entire institutions. In view of the above he advocated for the adoption of a robust examination

results processing method that would be sufficiently accurate and reasonably timely.

In Eludire (2011), the author observed that several issues associated with academic records of students includes improper course registration on path of students, late release of students results, inaccuracy in the computed results with manual calculations and retrieval difficulties. In his views development of database concept is the solutions to these issues where the amount of redundant data is reduced and the possibility that data contained on a file might be inaccurate for lack of update. In Mohini and Amar (2011), the authors pointed out that computation and Publication of students' results manually takes a long time and in that period students

remain idle for months in campuses. In this work we adopted the structured system analysis method and the system is web-based.

Materials and Methods

The Structured System Analysis methodology was adopted to develop the application. The system is Web-based, HTML 5, CSS8 and Javascript were used. The backend functionalities are powered by PHP server side scripting language and MySQL. And all the modules were integrated into a single program.

Proposed system modules

System Block Diagram

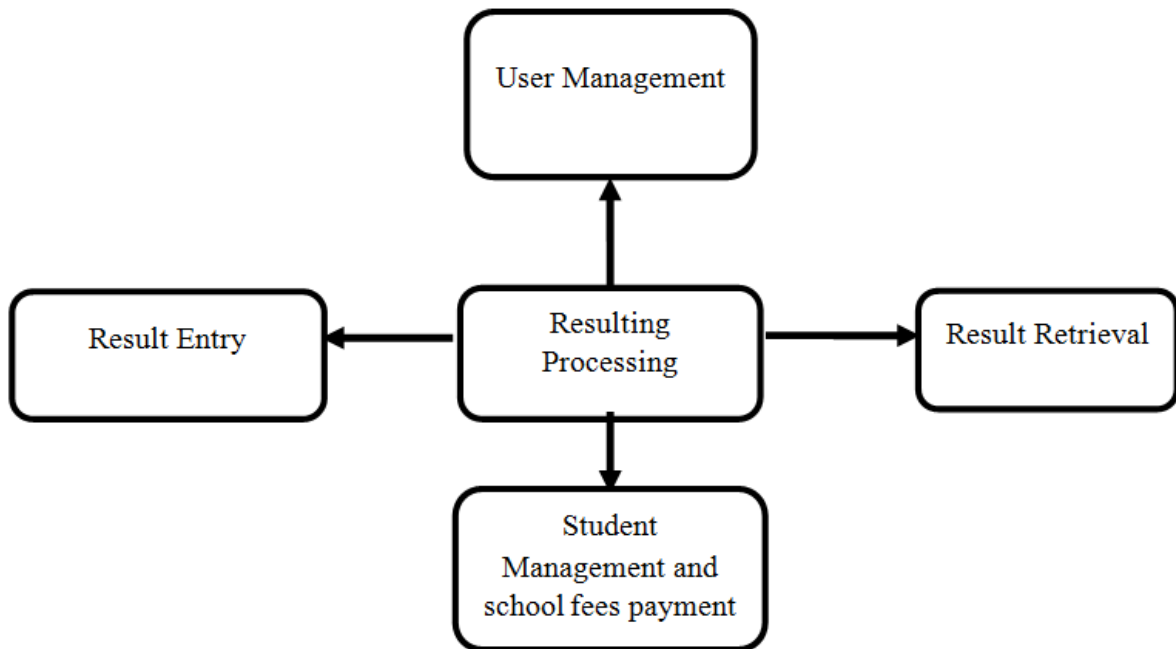


Fig. 1: Block diagram of the proposed processing system

Data Flow Diagram

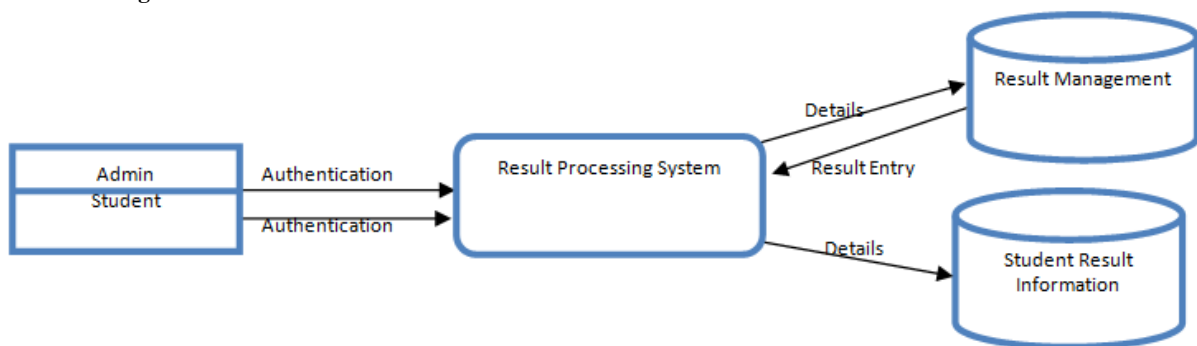


Fig. 2: Context level data flow processing system

System Architecture

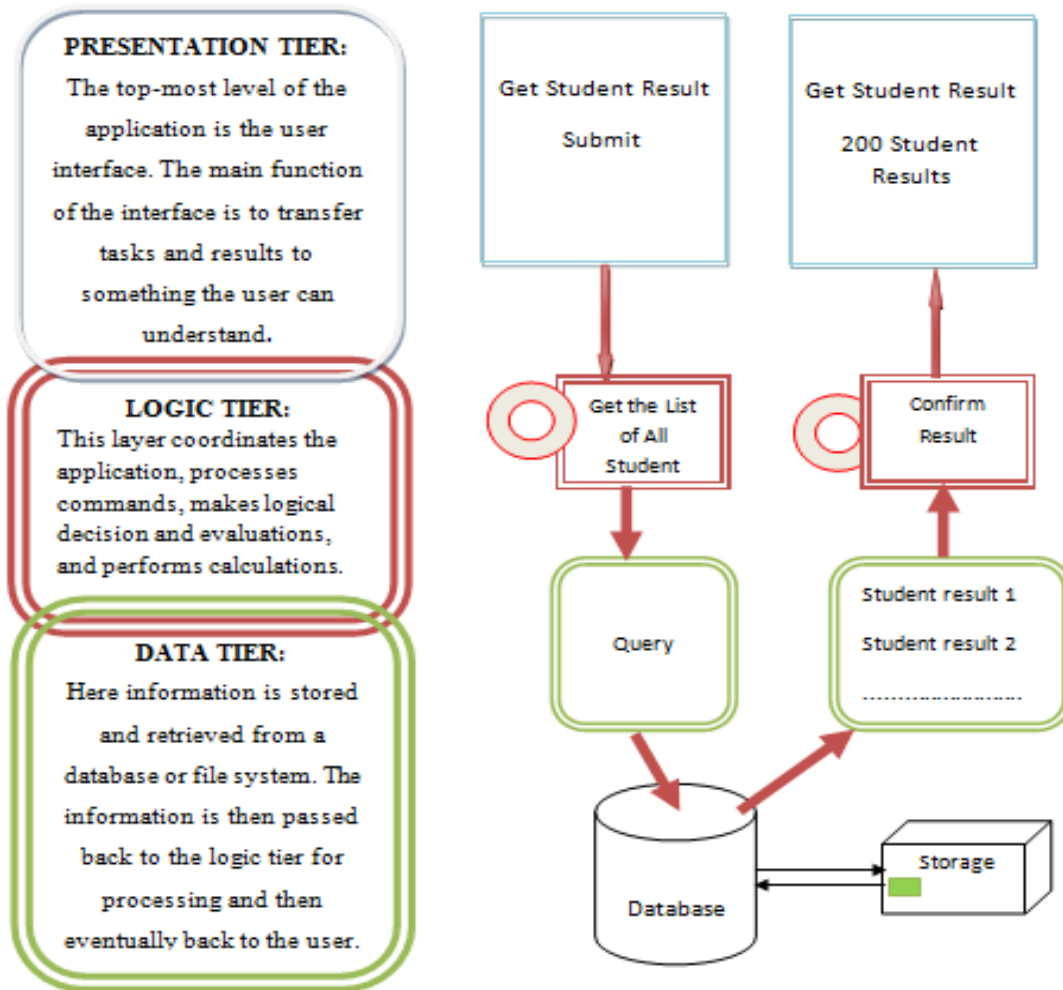


Fig. 3: System architectural diagram

Use Case Diagram

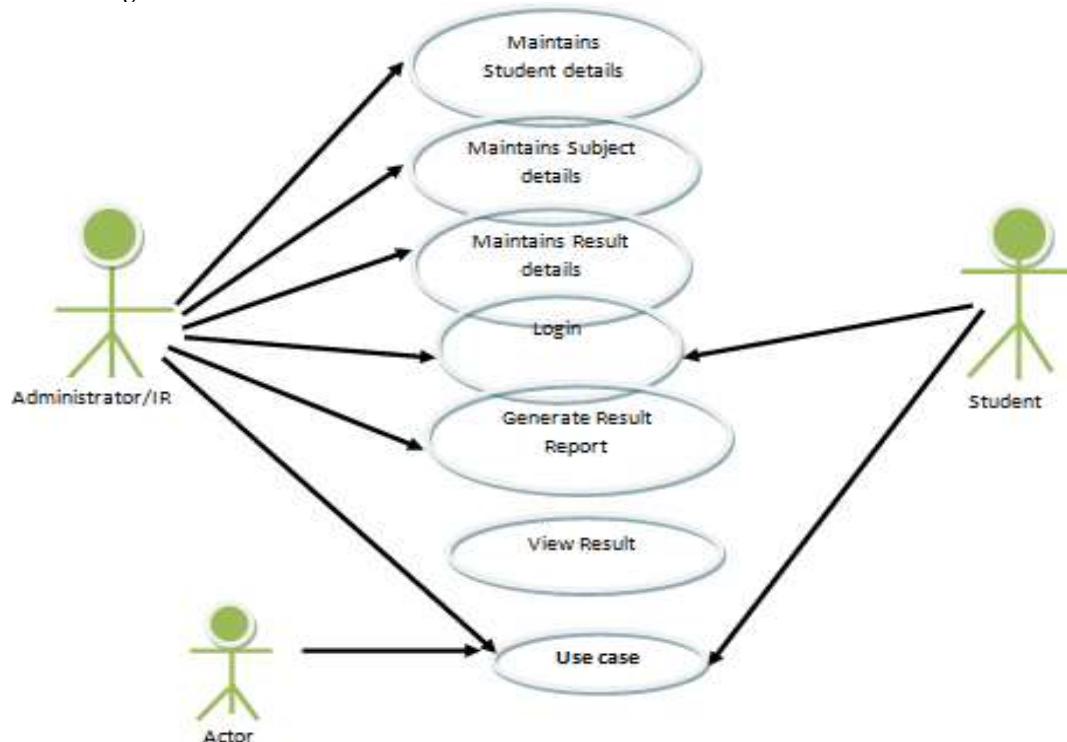


Fig. 4: Use case diagram for result processing and transcript generating system

Flowchart:

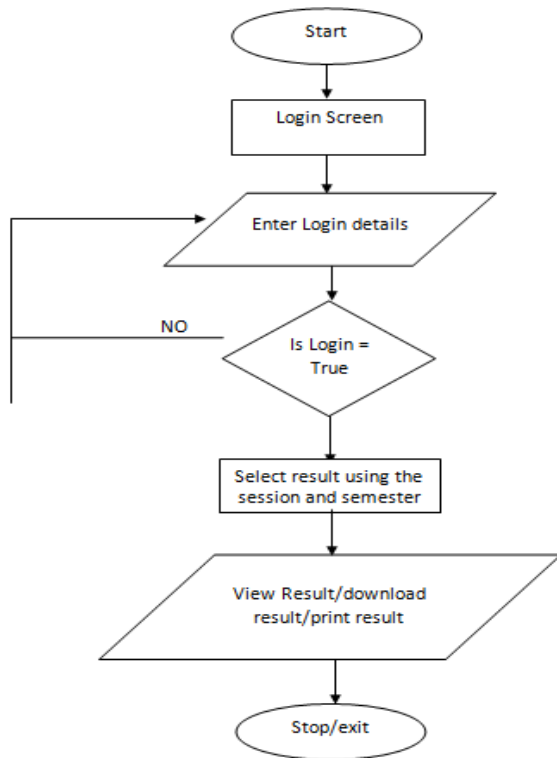


Fig. 5: Student login flowchart

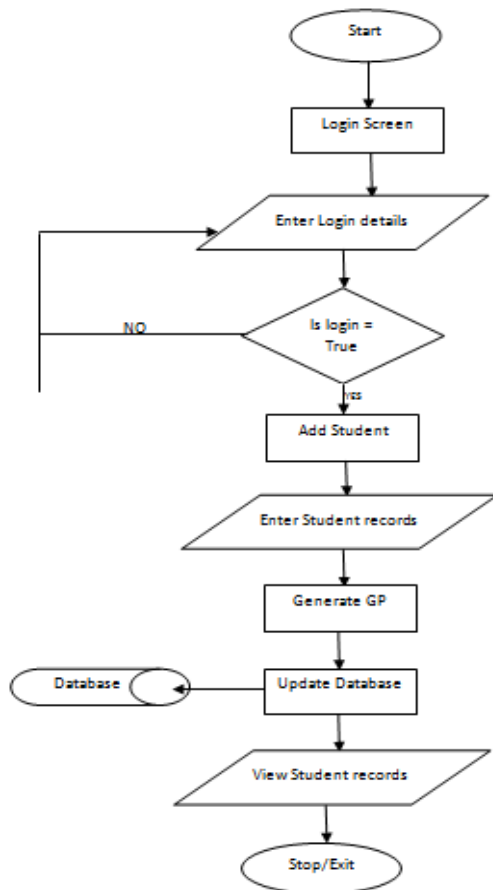


Fig. 6: Admin login flowchart

Implementation:

The developed program should fulfil the understated tasks or functions.

Functionality: It must successfully support the user’s requirements. Specified hardware and software business routine must enable the staff effectively undertake their processing tasks.

Accuracy: Data inaccuracy and entry error can be checked and resolved.

Efficiency: It should meet functional requirements within a specified time.

Duplicative error elimination, it should provide room to eliminate duplicative issues that is synonymous with the manual system.

Economical: It should be highly economical, demand minimum storage and minimize redundant data storage by the system to reduce problems inherent with data redundancy

User friendliness, it should provide convenient work environment and give out comprehensive output.

This new system should eliminate the voluminous paper work associated with manual system and produce timely management report.

The screenshots obtained from implementing the software are given below:

Login Page:

This page provides fields for login data for the user and also the admin. The login details for the Admin include, username and password. The login details for Students includes, their matriculation numbers and password.

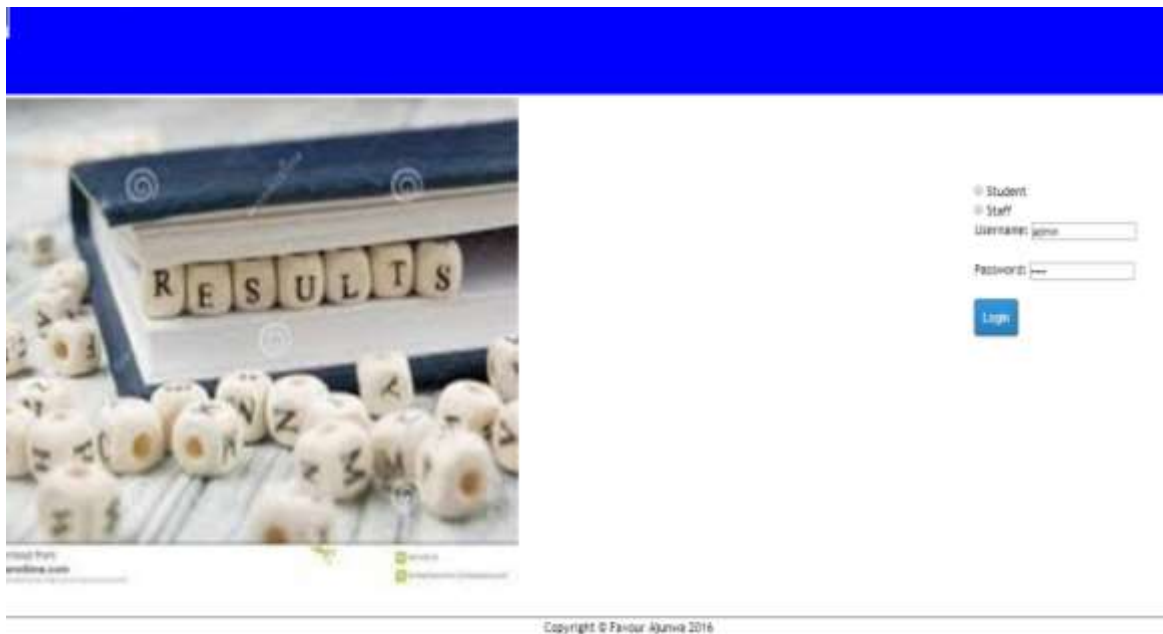


Fig. 7: Login page

Admin page

The Administration page has all the major functions that the system performs. These includes, Adding students, filling student records, their matric number, department, level, the courses, the units, and the scores. With this it generate the GP of each student. The Administration Page also contains a Setting Page where the administrator adds the semester and the session.

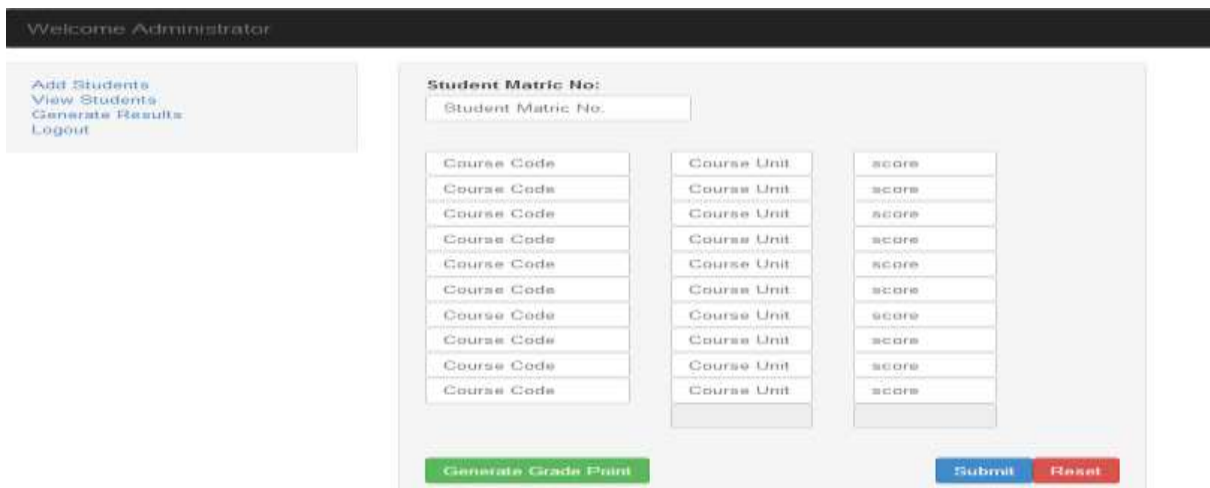


Fig. 8: GPA generation page

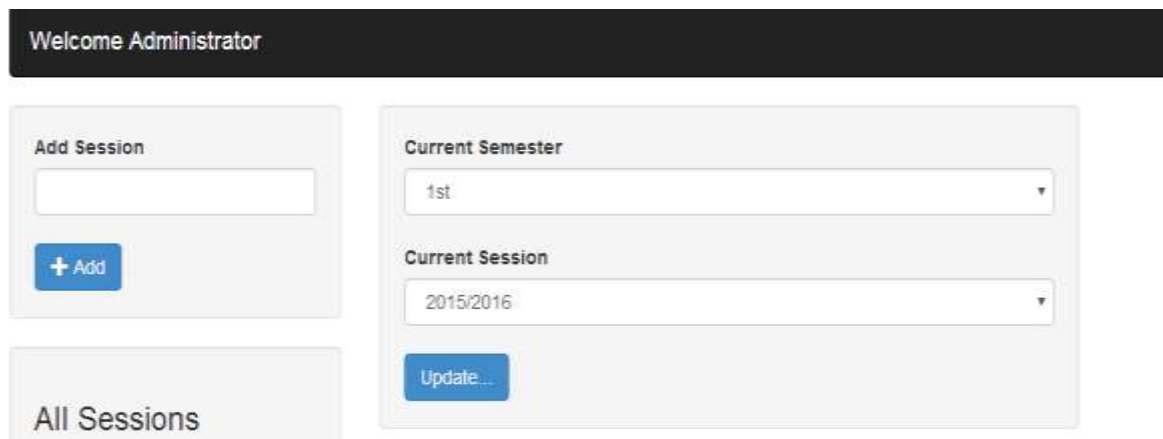


Fig. 9: Settings page

Welcome Administrator

Add Students
View Students
Generate Results
Logout

Matric Number:

Student FullName:

Department:

Level:

[Add Student](#) [Reset Fields](#)

Fig. 10: Add student page

Welcome Administrator

Add Students
View Students
Generate Results
Logout

S/N	Matric No	Surname	Firstname	Middlename	Level	Department	Action
1	1202020101	Adebiyi	Samuel	Dolapo	400	physical and computer sciences	Generate Result
2	1202020105	Chinenye	Enyabine		400	physical and computer sciences	Generate Result
3	1202020111	Ajunwa	Favour	Emmanuel	400	physical and computer sciences	Generate Result
4	1202020112	Soremekun	Tosin	Samuel	400	physical and computer sciences	Generate Result
5	150202002	Muyiwa	Obama		100	Biological Sciences	Generate Result

Fig. 11: Over-view of student page

Result page

The result page contains results of student. Students after login in with, they are to select the option of the session result they want to view, after which they can either download or print their result in any format.

Welcome Ajunwa Favour

2015/2016(1st semester)
2015/2016(2nd semester)

2013/2014(1st semester)
2013/2014(2nd semester)

2012/2013(1st semester)
2012/2013(2nd semester)

Fig. 12: Session options

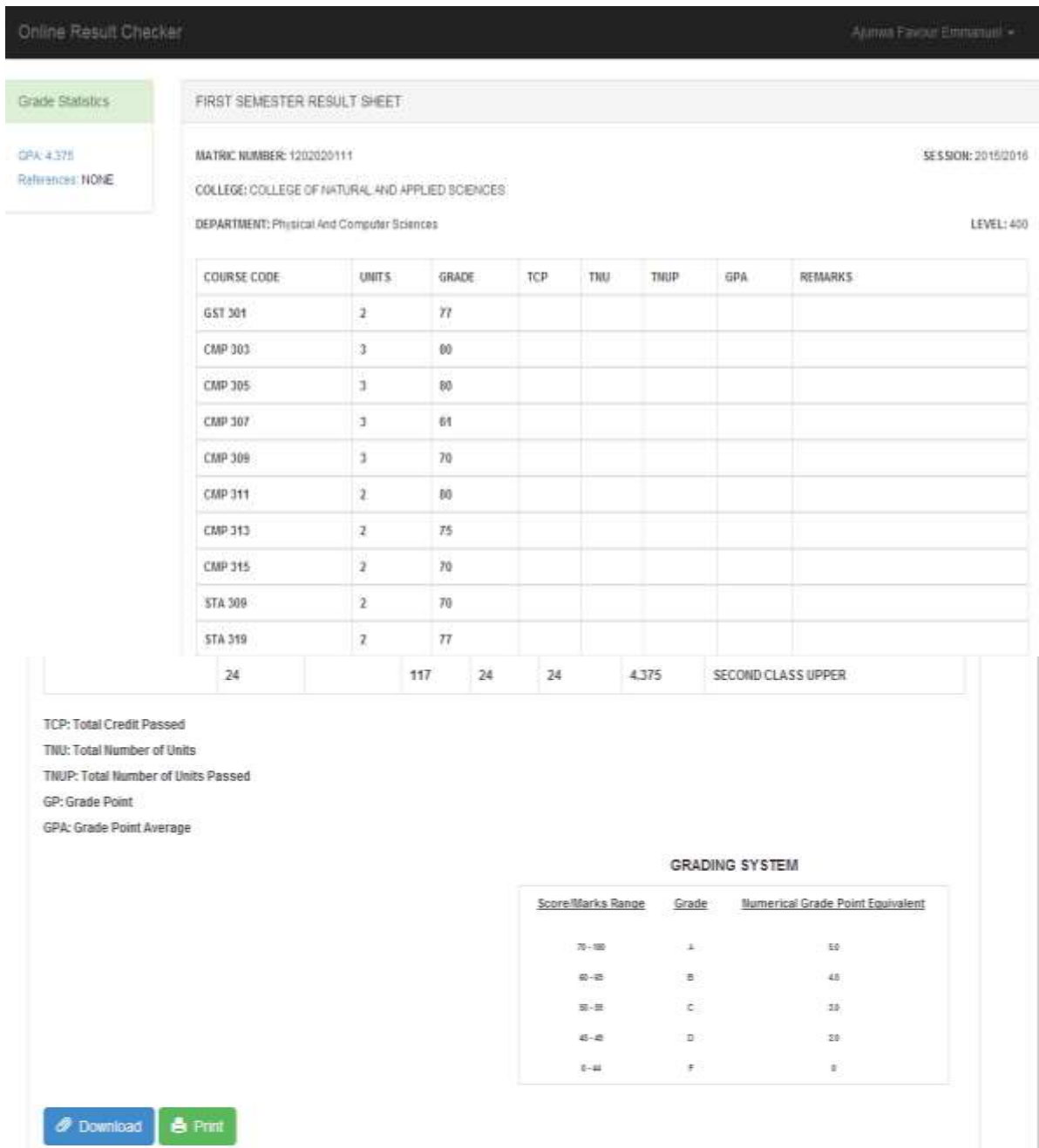


Fig. 13: Semester result

Testing:

The develop program was run on the system and found to operate perfectly.

Results and Discussion

The system consists of two parts, the Admin and the Student sections. Within the Admin section we have the login, this provides fields for the admin. The login details for the Admin are username and password.

After the login, the Admin performs most functions of the system, such as Adding student i.e. newly admitted student data are entered the system then computes their result and generates GPAs.

In the Student section we have the login, this provides fields for the login details of students and he login details for Student are his matriculation number and password.

After the login, the student only views his/her result. In this section the student is provided with the option of downloading the result or print of the result in pdf format.

Conclusion

The project culminated in development and deployment of application package, to ease processing of students' results in the department of Elect/Elect Engineering, Delta State University Oleh campus. The application was successfully developed and tested. It can process and store students' results with high speed and accuracy, and present outputs in a required formats. The new system is flexible and can be modified to suite all kind of data processing and record keeping. The system is a graphical user interface and not command-line approach. It is easy to use, secure, enforces data integrity that results from used of relational database system. With this application, student's results are automated, thereby reducing processing time and increasing accuracy.

Conflict of Interest

Authors declare that there is no conflict of interest in this study.

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