p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

APPLICATION OF COMPUTER TECHNOLOGY TOWARDS DIGITALIZING PERFORMANCE ASSESSMENT SYSTEM

[1]*Awojide, S. and [1]Onyijen, O. H.

[1]Samuel Adegboyega University, Department of Mathematical and Physical Sciences

***Corresponding author:** simple4real08@yahoo.com

Abstract - The routine activities carried out in the business world today are very different from previous years, especially in Nigeria Private Universities, where the Annual Performance Evaluation Report (APER) is done conventionally. Information communication technology was introduced to advance the direction of human resource management technology to master conventional challenges in the practice of PAS. In this work, an efficient web-based system is developed to automate and streamline employee performance appraisals. The importance of web-based PAS on a conventional basis was strictly illustrated. This work will make a major contribution to meeting the challenges of private Universities with full implementation.

Keywords: Terms: ICT, Private Institutions, Performance Appraisal System, Database

INTRODUCTION

The use of Information systems (IS) has increased in the past decade not only by companies, but by individuals and government. Exploitation of IS has been driven by technological breakthroughs in telecommunications advancement such as the Internet. The global effect of this development has created unlimited global market, a strong growth of the information economy, and the rise of competing digital companies. (Yusuf and Aina, 2014). According to Omogbhemhe and Awojide (2017), Technological revolution over the past 20 years has made Information Technology (IT) an integral part of every important activity. IT is increasingly becoming an important factor that is fundamental to support business processes in organizations. IT success is quite productive in supporting transactions and management mechanisms, provided that organizational and business processes are properly connected to IT. Digitizing data is one of the most important benefits of using web assessments in organizational systems. The web-based system includes the use of current technology features to evaluate employee performance in an organization. At present, many organizations have been involved in using web based assessment systems to modernize their work (Abdulaziz, Saad and Saad, 2011; Kamal and Kumar, 2013; Aro-Gordon, 2015).

The educational institution is one of the leading users of computer applications for managing data and information. Kamal and Kumar (2013) in their study said that, computers have simplified the analysis

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

of large amounts of data, and they can be very valuable in managing human resources from contract processing to record keeping. The advancement in computer hardware, software, and databases have positioned organizations to better manage and document information for easy access and retrieval. Clearly, the use of computer technology has gradually shifted organizations focus from processing information using pen and paper to employing the use of automated technology. With the advent of automated technology like computer systems, many repetitive tasks can be performed easily and at a rapid speed. Also, the number of people needed to perform the task is greatly reduced.

So far, most Nigerian private institutions have traditionally used pens and paper to complete their evaluation forms. This means, all employees must be present to fill their evaluation forms and other information needed. This traditional evaluation method faces many challenges: it is very complicated, time consuming and it is difficult to trace previous evaluation forms

In some private institutions, case of Samuel Adegboyega university, The Performance Appraisal is an annual activity where by forms are sent out traditionally to deserving personnel to fill. These forms are usually called "Annual Performance Evaluation and Report (APER)" forms. Generally, criteria are set to both Academic and Non-Academic staff such as; staff confirmation, number of journal publications, number of years spent at the present level, Additional degrees obtained in addition to performance on various responsibilities assigned to the staff, conducting a written test particularly for the non-academics, conducting an oral interview between the management team and the employees, making use of an external appraisers and preparing reports. Employees' performance appraisal process is a crucial task undertaken by the Head of Department, the Deans of Colleges, the Appointment and Promotion Committee made up of some Senate members and some members of the Governing Council of the University. A section of the Registry Department called Establishment Division is charged with this responsibility of maintaining a complete employee database including contact information, salary details, attendance, performance evaluation and promotion of all employees. Various steps are involved in an Annual Performance Appraisal Form for Academic and Non-academic Staff.

According to Akinyele (2010) in his work said that, during the design of performance application system in private universities, the management should consider all factors of an effective system so as

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

to achieve the goals upon which they are designed. The major factor should include among others: frequency of the appraisal, accurate record system, employees' performance measurement, self-appraisal approach, employee's performance review, employees' strength and weaknesses, the system as an employee's motivator, the system should be able to provide feedback to employees, the system should be void of biasness, the process and procedures for the system should be ratable.

Akinyele (2010) concluded that, because the performance appraisal systems used in private universities are not effective and that they exist just as a matter of formalities, the private universities cannot measure members of staff performance, hence making it difficult to achieve the intended human resource management objective.

The ability for a Performance Appraisal to be done digitally is now a necessity. In addition to the identification of loopholes; the web-based appraisal systems also play an instrumental role towards the development of efficient remedies for the various loopholes (Miller, 2003). Hence, this paper discusses a detailed overview of the digitalized means of handling the Performance Appraisal exercise in Universities using Samuel Adegboyega University, Ogwa as a case study. with a view of designing a digitalized system that will help the University to manage its employees Performance Appraisal System. This paper is streamlined, in the following design perspective of the system. 1. Design and Modeling of the entire solution 2. Database Analysis and 3 Design and Implementation of a Digitalized Application development.

Existing System

Employee Performance appraisal is a process that needs to be undertaken meticulously if a desirable result is to be obtained. Many Nigeria Private Universities conduct this kind of evaluation on employees from time to time majorly because it is an organizational tradition or requirement but not necessary because of its impact on the future. However, there are those who do it for a purpose but in some instances tend to face numerous challenges along the process. Purohit (2014) conclude that, the result of the evaluation is not openly explained and discussed with the employee, and conducts of the evaluation are not honestly and fairly done. In the existing system, the performance appraisal evaluation

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

process is done manually such that lots of paper works are involved. Since the activities are done manually, it makes the whole process to be cumbersome and time-consuming. Feedback to employees are delayed making the system poor in its response and it's full of biasness in its evaluation process (Obaisi, 2011). However, with the application of information technology, this task can be done quite professionally with precision by developing a web-based application that will efficiently handle performance appraisal for employee eradicating the present challenges faced.

Related Work

According to Commonwealth Secretariat, (2010); cited by Olaopa, (2015), the essence of Performance Appraisal Software (PAS) is to improve the overall appraisal system, simplify it and cut-down on drudgery. PAS automation helps to achieve more objectives that are accurate and produces quicker results thereby reducing the obstructive phenomenon of subjectivity associated with the traditional PAS (Susskind, 2013; Chopra, 2014; Dobbs *et al.*, 2015). This will help to build credibility and employees' confidence in the system.

Computer technology has good capability to automate performance standards and expectations as well as to accurately reflect desirable measures of performance (Aro-Gordon, 2015). Increased competition, changing technology, and process re-engineering have changed the traditional employee practice and capability. To meet such demands, organizations and businesses are relying on communications technology to monitor and improve employee performance and productivity.

Abdulaziz *et al.* (2011 stated that, electronic Performance Management Systems (e-PMS) are being used by many organizations to monitor the performance. The challenge for most organizations is that the use of technology to drive human performance is relatively new and not well understood. Common concepts and practices in Strategic Performance Management System (SPMS) are well-documented in the HR literature, but sparse attention has so far been paid to the crucial issue of technology-assisted performance appraisal. Performance appraisal is used to denote a formal record of a supervisor's opinion or summary of the quality of an employee's work, his/her potential for development and overall performance against the set goals (Grote, 2011; Rao, 2012; Aro-Gordon, 2015).

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

It is important to note that a company that does not have a computerized system still has a Human Resource Management (HRM) system. That is, the paper systems that most companies use before the development of computer technology. But the management of employee information was not done quickly as in a computerized system.Kavanagh M.J., thite M. and Johnson R.D., (2012) sated that, If a company did not have a paper system, the development and implementation of a computerized system would be extremely difficult . For the purpose of this we will use the term HRIS to refer to a computerized system designed to manage company's HR.

Kamal and Kumar (2013) discuss that, Majority of the organizations have now understood the importance of information storage and retrieval. It can be said that Human resources (HR) practice is becoming more and more challenging day by day, they have to face lot of problems like retention, attraction of employee, dealing with different cultural people, managing work force diversity, technological and informational changes. to overcome with these challenges training is necessary of HR people

Fetaji *et al.* (2014) said, the purpose of Academic Staff Performance Evaluation System (ASPES) is to evaluate individual staff performance on an annual basis. The aim is to recognize achievement, support continuous development and provide information for the processes of contract renewal and promotion. In ASPES, Academic Staff members can fill their profiles by themselves and create professional curriculum that can be visible publically.

Performance appraisal system should bring a positive experience and contribute to the overall development of the organization. If done properly, it is a very effective tool to improve performance and productivity, for developing employees of that organization. However, the result of the evaluation is not openly explained and discussed to the employee concerned and conducts of evaluation are not honestly and fairly done (Purohit, 2014).

The data emerging from such an exercise constitutes the primary database for individual development and should be communicated to the subordinate because one of the major issues in performance appraisal is communication. If one's performance is not communicated to him or her, there would be

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

no way the person's performance would improve in the subsequent future, which would definitely defeat the purpose of performance appraisal (Rao, 2004; Obisi, 2011),

METHODOLOGY

There are many methods of performance appraisal that are well-documented in the literature (Bhattacharya and Sengupta, 2009; Sudarsan, 2009; Grote, 2011), but Rating Scale was employed for this study. This is because it is widely used across many fields of research. The rating idea lends itself to enhancing objectivity and analysis in performance evaluation process. The rating scale takes certain behavioral goals and traits before scoring based on the scale. Every class of employee was graded by the same standards. The rating scale was numerically based in descending order from 5 to 1. The form contains a checklist and a series of performance questions given the option Yes or No. An excessive number of negative responses indicated employee's grades might be very low.

An Employee Performance Standard (EPS) was also established using a Balanced Scorecard (BS). BS contains key performance drivers of a strategy-focused organization as prescribed by Kaplan and Norton (2000) and Niven (2006). BS was found useful for enhancing individual and institutional performance (Malina and Selto, 2001). It helped to compare the actual performance of the employees. The criteria required to judge the performance of the employees was set as successful or unsuccessful. The amounts of their contribution to the organizational goal and objectives were also taken into consideration. The standard set was clear, easily understandable and in measurable terms. If employee does not come up to expectance, then it should be taken extra care for. The Appraisal and Appointment Committee with their objectives, measure the performance of employees in supervisory to achieve those goals.

The proposed system is a web-based system which automates the processes in the existing system. The Employee to be appraised is expected to commence the exercise by login in and enters his or her data to access and retrieve the electronic appraisal form for filling.

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

System Development Methodology

The design methodology used for this study is the Iterative waterfall model first developed by Benington in 1956 and modified by Winston Royce 1970 (Ruparelia, 2010). The SDLC is a methodology for building, designing, and maintenance of computer software, information and industrial systems (Ajinaja, 2017). It is a very popular software development architecture. This model is very simple to understand and best used for smaller projects where their requirements are well known. It consists of sequence of stages where the output of each stage leads to the input for the next stage. At the requirement stage, the end users (staff) were interviewed to determine their perceptions and prospect of the application. On the design stage, system design and the architecture were developed to meet end users' needs. However, the graphical user interface of the system was developed using HTML, Cascading Style Sheet (CSS), JavaScript, Servlet, Java Server page (JSP), Net Beans and Java Runtime Environment Oracle database, as the database in the implementation stage. In the testing phase, after testing the workability of each unit developed in the implementation phase, all the units were integrated into a system. Lastly, there is a room for maintaining the system after future deployment.

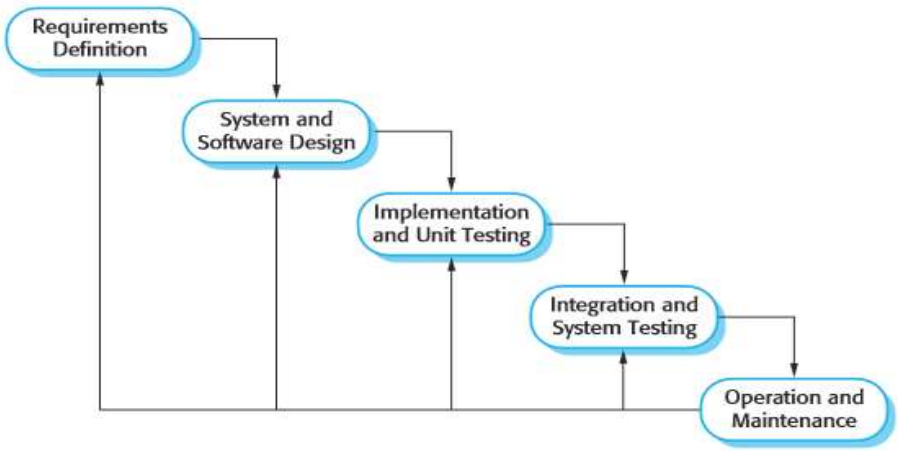

Figure 1: Iterative waterfall model Software Development Life cycle (SDLC)
(Source: Ajinaja, 2017)

1) **Requirements analysis and definition:** The Performance Evaluation System services, constraints, and goals were established by consultation with system users (staff). They were defined in details and serve as a system specification.

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

2) **System and software design:** The Performance Evaluation System design process allocated the requirements to either hardware or software systems by establishing an overall system architecture.

3) **Implementation and unit testing during this stage:** The APER software design was implemented and each unit tested before overall testing is done on staff. All errors were duly corrected and improvement made.

4) **Integration and system testing:** The program was integrated and tested as a complete system to ensure that the Performance Evaluation System software requirements was met.

5) **Operation and maintenance:** This is the longest life cycle phase. The APER system is installed and put into practical use. It is regularly maintained by correcting errors which were not discovered in earlier stages of the life cycle, improving the implementation of system units and enhancing the APER system's services as new requirements are discovered. Using the waterfall model, the APER SDLC was split up into a number of independent steps as shown in Figure 1.0 above. Each step was carried out in sequence and accordance one after the other. The previous stage is always completed before moving to the next stage of the life cycle.

The System Model

The APER developed in this paper had features of its manual system. The features were the fields used in the manual system for filling of seethe appraisal form. The system provided a feature through which information can be displayed in the interface for the users to see the available user type. Also, provided in this electronic system is authentication. This enabled only eligible staff to be appraised have access to login and fill their details in the staff appraisal form available on the webpage. At the home page, there are two logins, one for the administrator and the other for staffs. The model is shown in figure 2.

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

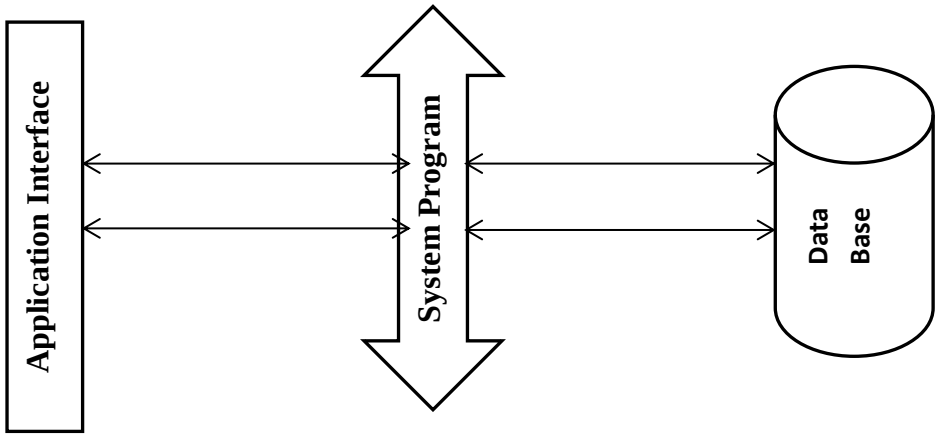

Figure 2: System Design Model. Source: (Omogbhemhe and Awojide, 2017).

SYSTEM ARCHITECTURE

System architecture is a conceptual model that defines the structure, behavior and views of a system. A system architecture can comprise system components that will work to implement the overall system. Figure 3 below illustrates the system architecture of the APER.

***p* - ISSN: 2536 – 6866**
***e* - ISSN: 2659 - 1529**

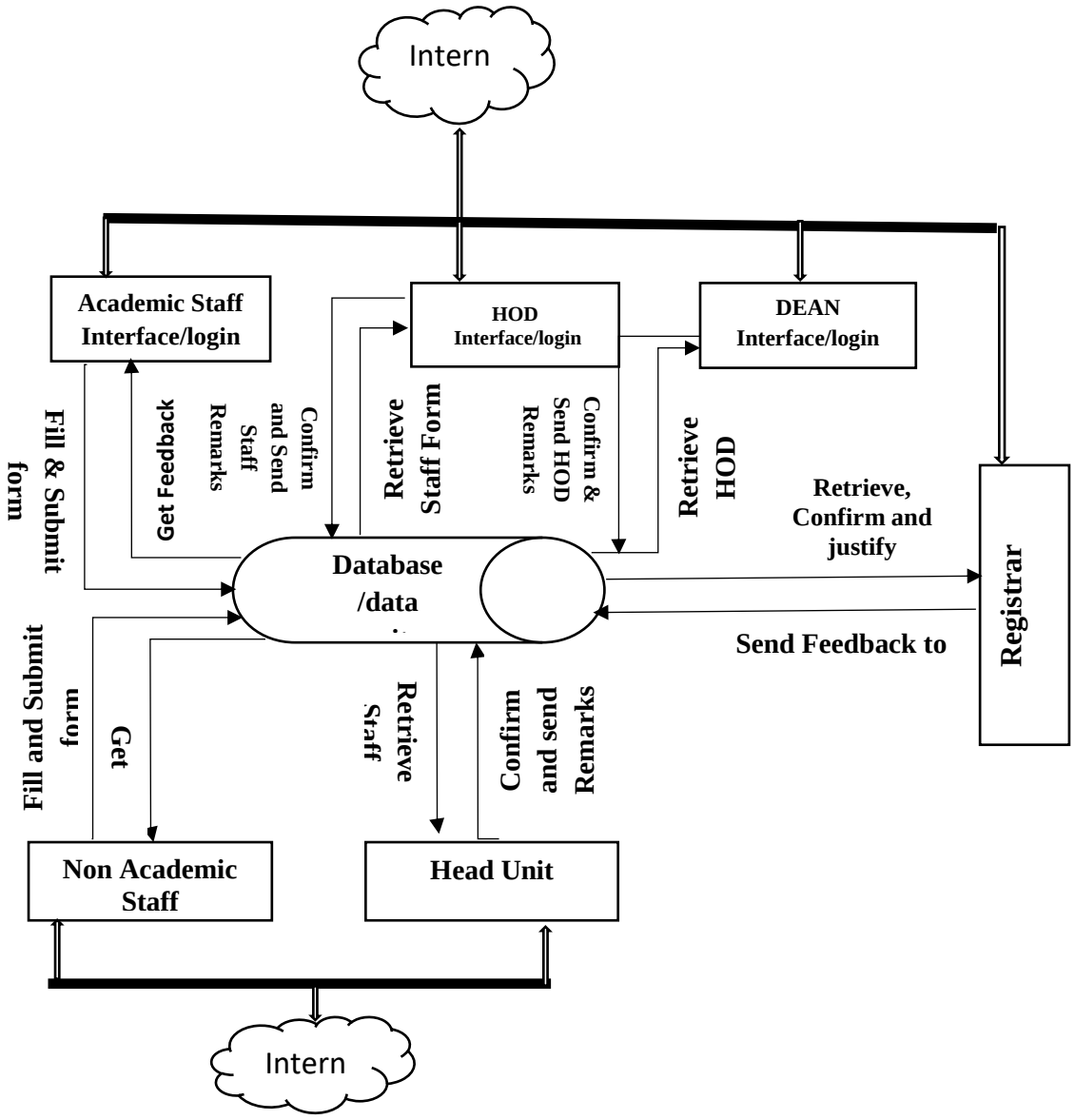

Figure 3: Architectural Design

Data Modeling (E-R diagram)

Entity relationship is a data-modeling tool and can be drawn using a variety of notations. They are normally represented in an Entity Relationship Diagram (ERD), which uses graphical representations to model database components.

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

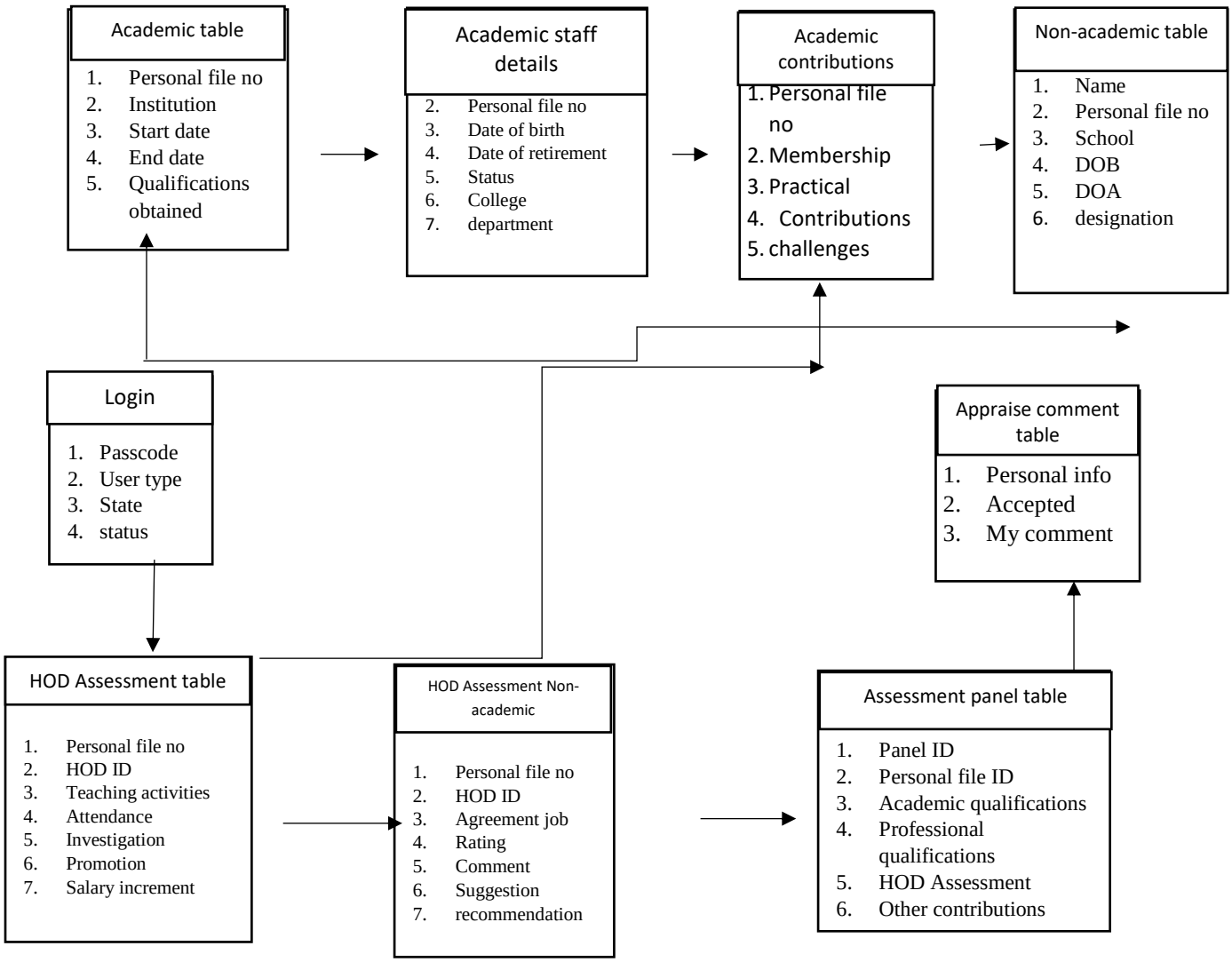

Figure 4: E-R Diagram

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

System Flow Chart

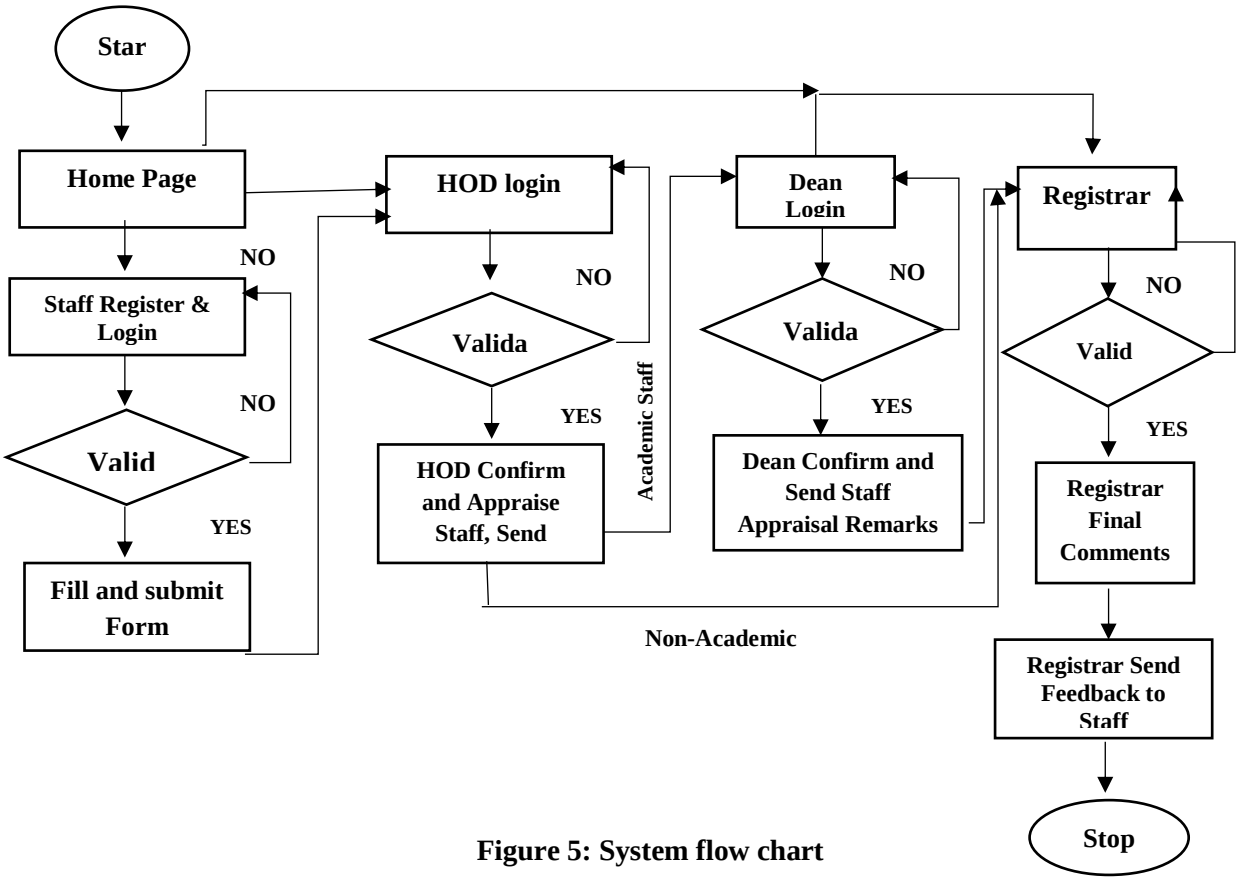

Figure 5: System flow chart

System Algorithm

Step 1: Display welcome screen

Step 2: display login screen

Step 3: Admin login and create users

Step 4: Fill appraisal form and submit

Step 5: HOD login with passcode (PersonalFileNumber)

Step 6: login validation

If (true) goto step 7 else goto step 5

Step 7: HOD appraise staff and submit

Step 8: Staff login with passcode (PersonalFileNumber)

Step 9: login validation

If (true) goto step 10 else goto step 8

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

Step 10: Staff comment on his appraisal by HOD

Step 11: Departmental Appraisal committee login with passcode

Step 12: login validation

If (true) goto step 10 else goto step 8

Step 13: Departmental Appraisal committee appraise staff

Step 14: Appointment and Promotion committee login with passcode

Step 15: login validation

If (true) goto step 16 else goto step 14

Step 16: Appointment and Promotion committee final decision on staff appraisal staff

Step 17: Staff login with passcode (PersonalFileNumber)

Step 18: login validation

If (true) goto step 19 else goto step 17

Step 19: View staff promotion status

Step 20: end

Database Design

A database design is the development of a comprehensive data model of database. This database model comprises all needed logical and physical design choice and physical storage parameters needed to generate a design in a data definition language, which can be used to create a database. A fully attributed data model contains detailed attributes for each entity.

The process of doing database design generally consists of a number of steps such as determine:

1. Table sizes
2. Specifying data to be stored in each table
3. field names
4. field names
5. data types

The database layout has the following sections;

1. Academic staff details table

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

2. Non-academic staff details table
3. HOD assessment table
4. Assessment panel table

System Implementation

Having an online performance appraisal system allows you access to the data from anywhere - all you need is an Internet connection. The system after testing gives employee real time feedback on their performance, it also improves compliance, efficiency and reporting. The system help in providing a systematic and fair information for organization for decision making. It gives the registrar the ability to manage and track compliance through the annual review process. The system is very simple to use

1. System software requirement

Below are the basic minimum system software requirements;

i. Operating System: Windows 7

ii. Web browser: Mozilla Firefox, Google Chrome, and Internet explorer,

iii. Oracle 11g

2. System hardware requirement

Below are the basic minimum system hardware requirements;

i. Computer systems: desktops and laptops

ii. System specifications: Pentium processor (1.60GHz) and above, 1GB RAM,

System Implementation Tools

The tools employed in the front end and back end include; Hypertext Mark-up Language (HTML), Cascading Style Sheet (CSS), JavaScript, Servlet, Java Server page (JSP), Net Beans and Java Runtime Environment Oracle database,

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

Explanation Of How The System Works

The APER system has four platforms (Admin, HOD, Dean and Registrar login) and it will work in the following sequential order as explained below:

A. The Admin Platform:

This platform has access to every other platform and can perform every function on the system. To access the admin platform you have to first login as admin. The features on the admin platform are:

1. **Add new users:** The admin can add a new user to the system in this case a staff, HoD or Dean.
2. **View users:** The admin can view all users profile in the database.
3. **View staff:** The admin can view all available staff in the database.
4. **View score:** The admin can view all staff scores in the database.

B. HoD platform

This platform has its own login dialog which provides the means of accessibility to only head of departments. Below are the features on the platform:

1. **Validate:** Each HoDs present in the database has the privilege to his/her staff in the database. He has the access to validate a staff APER form submitted on the platform.
2. **Confirm:** Each HoDs can confirm and appraise staff.
3. **Remarks:** He leave a remark which is simply appraisal of a staff and sends it to the dean.

C. Dean Platform:

Below are features on the platform:

1. **Validate:** Each dean present in the database has the privilege to his/her staff in the database. He/she has the access to validate a staff APER form submitted on the platform by the HoD.
2. **Confirm:** Each dean can confirm and appraise staff.
3. **Remarks:** He/she leave a remark which is simply appraisal of a staff and sends it to registrar.

D. Registrar Platform:

Below are features on the platform:

1. **Validate:** The registrar present in the database has the privilege to validate a staff APER form submitted on the platform by the respective Deans..
2. **Comments:** Registrar leave a comment based on the different remarks in the form.

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

3. **Feedbacks:** He sent a feedback to staff.

System Implementation Result

Some of the screenshots of the system implementation for the evaluation of staff are presented. Table 1 and 2 shows the database details of academic staff and non-academic staff. This is where the data of all staff collected and stored based on the identified parameters.

Table 1: Academic Staff Details Table

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	NAME	VARCHAR2(80 BYTE)	Yes	(null)	1	(null)
2	PERSONALFILENO	VARCHAR2(20 BYTE)	No	(null)	2	(null)
3	DATEOFBIRTH	DATE	Yes	(null)	3	(null)
4	DATERETIRE	DATE	Yes	(null)	4	(null)
5	STATUS	VARCHAR2(7 BYTE)	Yes	(null)	5	(null)
6	NOANDAGESOFCHILDREN	VARCHAR2(200 BYTE)	Yes	(null)	6	(null)
7	COLLEGE	VARCHAR2(100 BYTE)	Yes	(null)	7	(null)
8	DEPARTMENT	VARCHAR2(80 BYTE)	Yes	(null)	8	(null)
9	FIRSTAPPDATE	DATE	Yes	(null)	9	(null)
10	FIRSTGRADELEVEL	VARCHAR2(50 BYTE)	Yes	(null)	10	(null)
11	FIRSTDESIGNATION	VARCHAR2(50 BYTE)	Yes	(null)	11	(null)
12	CONFIRMATIONDATE	DATE	Yes	(null)	12	(null)
13	LASTPROMOTIONDATE	DATE	Yes	(null)	13	(null)
14	LASTGRADELEVEL	VARCHAR2(50 BYTE)	Yes	(null)	14	(null)
15	LASTDESIGNATION	VARCHAR2(50 BYTE)	Yes	(null)	15	(null)
16	PRESENTDESIGNATION	VARCHAR2(50 BYTE)	Yes	(null)	16	(null)
17	ACTUALSALARY	VARCHAR2(50 BYTE)	Yes	(null)	17	(null)

Table 2 Non-academic Staff Details Table

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	NAME	VARCHAR2(80 BYTE)	No	(null)	1	(null)
2	PERSONALFILENO	VARCHAR2(20 BYTE)	No	(null)	2	(null)
3	SCHOOL	VARCHAR2(80 BYTE)	Yes	(null)	3	(null)
4	DOB	DATE	Yes	(null)	4	(null)
5	DOA	DATE	Yes	(null)	5	(null)
6	DESIGNATIONFA	VARCHAR2(50 BYTE)	Yes	(null)	6	(null)
7	GRADEFA	VARCHAR2(20 BYTE)	Yes	(null)	7	(null)
8	CONFIRMED	VARCHAR2(5 BYTE)	Yes	(null)	8	(null)
9	WHYCONFIRMED	VARCHAR2(80 BYTE)	Yes	(null)	9	(null)
10	DOLP	DATE	Yes	(null)	10	(null)
11	DESIGNATIONLA	VARCHAR2(50 BYTE)	Yes	(null)	11	(null)
12	GRADELP	VARCHAR2(20 BYTE)	Yes	(null)	12	(null)
13	CONFERENCE	VARCHAR2(80 BYTE)	Yes	(null)	13	(null)

Table 3 and 4 captures the database details HOD assessment for academic staff and Academic and promotion panel. This is where the data of academic are staff collected and stored based on the identified parameters. The HoD assessed its staff based on the provided details.

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

Table 3: HOD Assessment table for Academic staff

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	PERSONALFILENO	VARCHAR2(20 BYTE)	Yes	(null)	1	(null)
2	HOD_ID	VARCHAR2(80 BYTE)	Yes	(null)	2	(null)
3	TEACHINGACTIVITIES	VARCHAR2(5 BYTE)	Yes	(null)	3	(null)
4	STUDENTSUPERVISION	VARCHAR2(5 BYTE)	Yes	(null)	4	(null)
5	EVIDENCEOFRESEARCH	VARCHAR2(5 BYTE)	Yes	(null)	5	(null)
6	DEPTRESPONSIBILITIES	VARCHAR2(5 BYTE)	Yes	(null)	6	(null)
7	CONTRBTNTOVERSITY	VARCHAR2(5 BYTE)	Yes	(null)	7	(null)
8	ATTENDANCE	VARCHAR2(5 BYTE)	Yes	(null)	8	(null)
9	INVIGILATION	VARCHAR2(5 BYTE)	Yes	(null)	9	(null)
10	PROMOTION	VARCHAR2(50 BYTE)	Yes	(null)	10	(null)
11	SALARYINCREMENT	VARCHAR2(20 BYTE)	Yes	(null)	11	(null)
12	WHYNOSALINCREMENT	VARCHAR2(200 BYTE)	Yes	(null)	12	(null)
13	DATE_CREATED	DATE	Yes	(null)	13	(null)

Table 4: Assessment Panel table

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	PANELID	VARCHAR2(20 BYTE)	Yes	(null)	1	(null)
2	PERSONALFILENO	VARCHAR2(20 BYTE)	Yes	(null)	2	(null)
3	BASICACADEMICQUALIFICATIONS	VARCHAR2(3 BYTE)	Yes	(null)	3	(null)
4	PROFESSIONALQUALIFICATIONS	VARCHAR2(3 BYTE)	Yes	(null)	4	(null)
5	YEARSOFCOGNATEEXPERIENCE	VARCHAR2(3 BYTE)	Yes	(null)	5	(null)
6	HODASSESSMENT	VARCHAR2(3 BYTE)	Yes	(null)	6	(null)
7	OTHERCONTRIBUTIONS	VARCHAR2(3 BYTE)	Yes	(null)	7	(null)
8	MANAGERIALABILITY	VARCHAR2(3 BYTE)	Yes	(null)	8	(null)
9	COMMENDATIONS	VARCHAR2(3 BYTE)	Yes	(null)	9	(null)

System Testing Samples

Figure 5 presents the log in page. The login page is the first page that is displayed to the user of the system. This page is necessary to control and manage the various types of users in the system

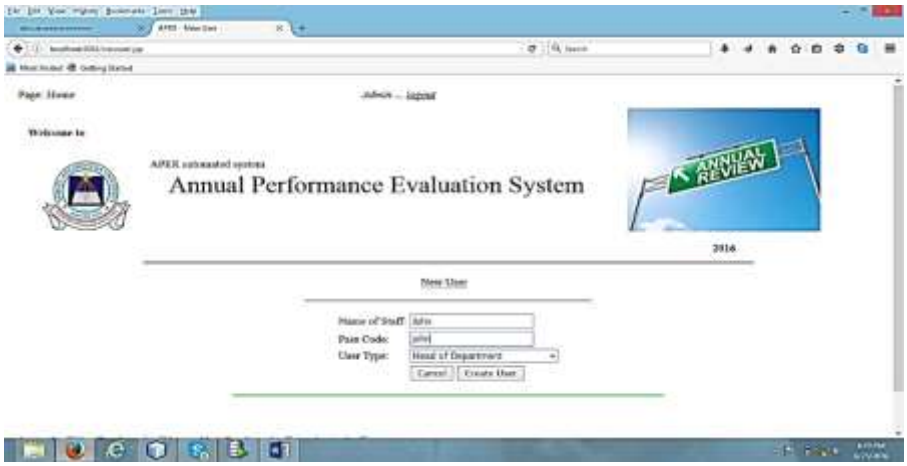

Figure 6: shows the login page

p - ISSN: 2536 – 6866
e - ISSN: 2659 - 1529

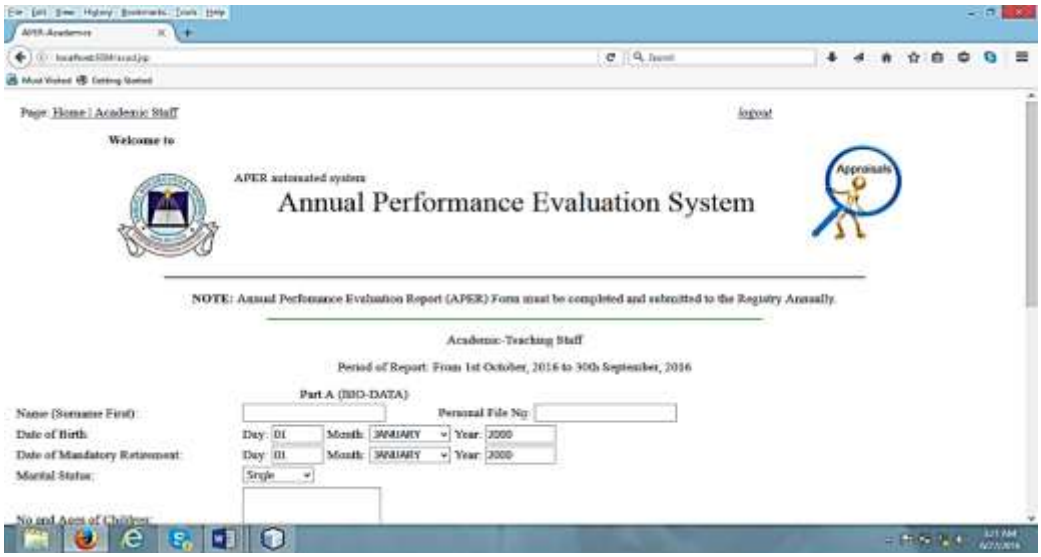

Figure 7: Show the screenshot of the form to fill

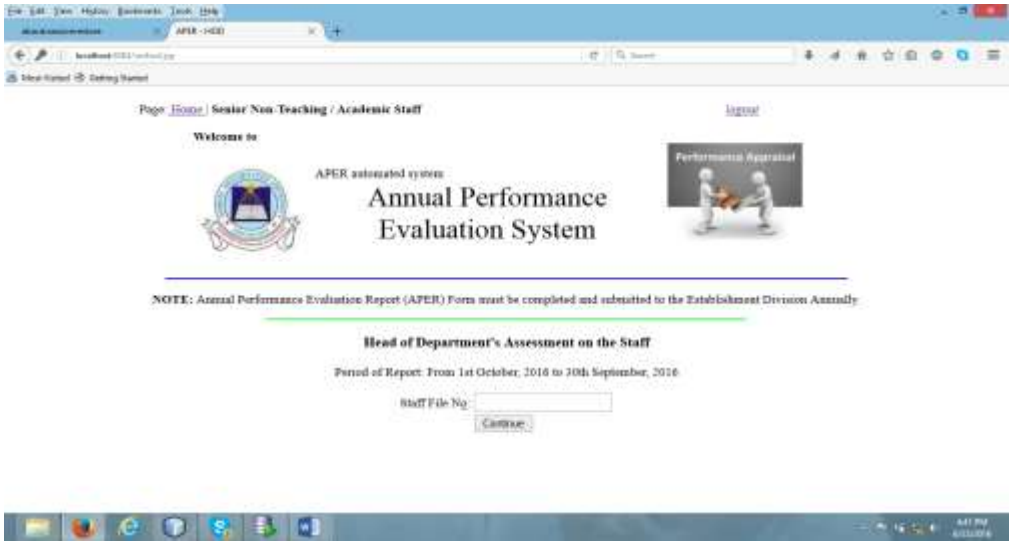

Figure 8: HOD Login screen

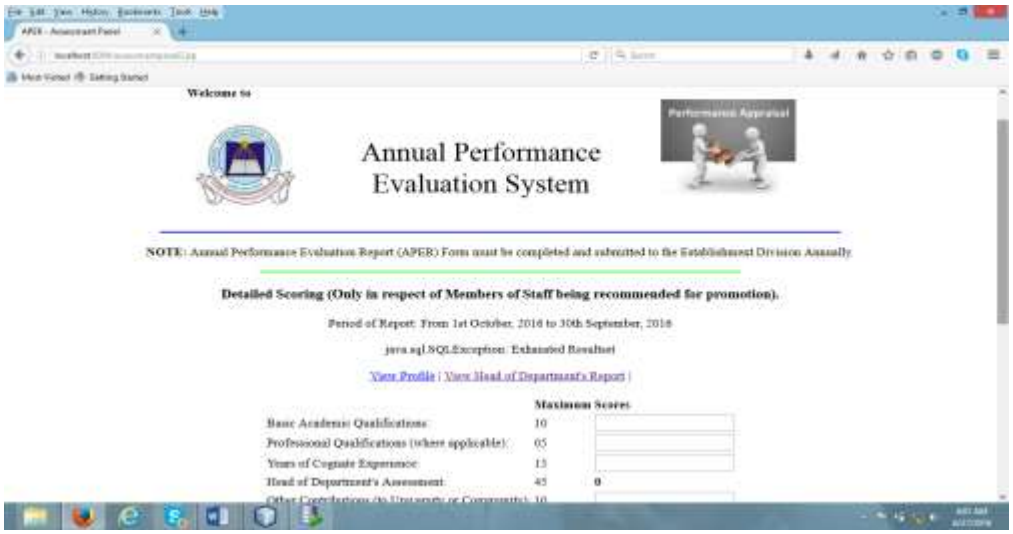

Figure 9: Screenshot shows the part to be completed by the College Promotion Panel

CONCLUSION

This paper presented an online performance appraisal system and a dais for the practical design, development and implementation of an online based performance appraisal system application. Executing/testing this system shows that its objectives of design were achieved in this paper. The system is recommended for use for efficiency in the private Universities in Nigeria, it will go a long way to improving their performance appraisal and also go a long way to eliminating the challenges faced by staffs during the appraisal exercise. However this system can be improved upon in terms of scope and robustness

REFERENCES

Abdulaziz, A., Saad, A. and Saad, T. (2011). Evaluation of E-Performance Analysis and Assessment in the United Arab Emirates (UAE). *Journal of Internet and Information System,* 2(2), 20 – 27.

Ajinaja, M. (2017). The Design and Implementation of a Computer Based Testing System using Component-Based Software Engineering. *International Journal of Implementation,* 8(1), 59 – 65.

Akinyele, S. T. (2010). Performance Appraisal Systems in Private Universities in Nigeria: A Study of Crawford University, Igbesa- Nigeria. *Educational Research,* 1(8), 293-303.

Aro-Gordon, S. (2015). An IT-Based Appraisal Model for Effective Performance Management System in Nigeria, *4th International Conference on Managing Human Resources at the Workplace*, December 4-5, Baze University Abuja Nigeria Department of Financial Mathematics Faculty of Computing and Applied Sciences.

Bhattacharya, M. S. and Sengupta, N. (2009). *Compensation Management*. New Delhi, India

Chopra, A. (2014). *Innovative State: How New Technologies Can Transform Government*. Atlantic Monthly Press, United Kingdom

Commonwealth Secretariat. (2010). Managing and Measuring Performance in the Public Service in Commonwealth Africa: Report of the Sixth Commonwealth Forum of Heads of African Public Services Mahe, Seychelles. Improving African Public Services Series: London: Commonwealth Secretariat.

Dobbs, R., Manyika, J. and Woetzel, J. (2015). *No Ordinary Disruption: The Four Forces Breaking all the Trends*. Public Affairs, New York, United States.

Fetaji, B., Fetaji, M., Ebibi, M., & Begovic, D. (2014). Software Engineering a Web Based Performance Evaluation System and Devising Mathematical Model for Performance Measurement, *TEM Journal*, 3(2), 830-1659.

Grote, D. (2011). *How to be Good at Performance Appraisals: Simple, Effective, Done Right*. Harvard Business Review Press. Brighton, Massachusetts, United States of America.

Kamal and Kumar, A. (2013). Impact of Technology Advancement on Human Resource Performance. *International Journal on Arts, Management and Humanities* 2(2), 43-47.

Kavanagh, M. J., Thite, M. and Johnson, R. D. (2012). *The Future of HRIS: Emerging trends in HRM & IT*. In Kavanagh, M.J., Thite, M. & Johnson, R. D. (Eds*.) Human Resource Information Systems: Basics, Applications & Directions*. Thousand Oaks, California: Sage. 536-556

Kolawole, T. O., Komolafe, I. T., Adebayo, A. A. and Adegoroye, A. A. (2013). Appraisal system: A Tool for Performance in Selected Organizations in Nigeria. *Department of Sociology, Federal University,* 5(7), 249-261.

Malina, M. A. and Selto, F. H. (2001). Communicating and Controlling Strategy: An Empirical Study of the Effectiveness of the Balanced Scorecard. *Journal of Management Accounting Research,* 13, 47-90.

Marc, J. E., and Adriana, R. (2005). Evaluating Performance in Information Technology. *The Society of Management Accountants of Canada, the American Institute of Certified Public Accountants and The Chartered Institute of Management Accountants*.

Miller, J. S. (2003). Managing Appraisal in the Information Age. *Journal of Labor Research,* 24(3), 409-424.

Niven, P. R. (2006). *Balanced Scorecard Step-by-Step: Maximizing Performance and Maintaining Results.* (2nd Edition). John Wiley & Sons Incorporated, Hoboken, New Jersey.

Obisi1, C. (2011). Employee Performance Appraisal and Its Implication for Individual and Organizational Growth. *Australian Journal of Business and Management Research*, 1(9), 92-97.

Olaopa, T. (2015). Change Agenda: The Devil in the Details of Execution. Presentation at the Nigerian Economic Summit. Retrieved from https://www.ngrguardiannews. com (Accessed on 25th February, 2020).

Omogbhemhe, I. M. and Awojide, S. (2017). Towards the Digitalization of Hotel Business in Nigeria: The Design Perspective. *International Journal of Scientific & Engineering Research*, 8, 11-75.

Peffers, K., Tuunanen, T., Gengler, C. E., Rossi, M., Hui, W., Virta-nen, V. and Bragge, J. (2006). The Design Science Research Process: A Model for Producing and Presenting Information Systems Re-Search". In Proceedings of the First International Conference on Design Science Research in Information Systems and Technology (DESRIST 2006), 83-106.

Purohit, M. (2014). Performance Appraisal System of Cooperative Banks in Pune Region: Its Implication to Employee's Performance. *International Journal of Scientific & Engineering Research*, 5(1), 1161-1169.

Rao, C. A. (2012). *Performance Management*. Biztantra Publisher, Delhi, India

Rao, T. V. (2004). *Performance Management and Appraisal Systems: HR Tools for Global Competitiveness*. London: Sage Publications Limited.

Ruparelia, N. B. (2010). Software Development Lifecycle. *Hewlett-Packard Enterprise Services,* 35(3), 8-13.

Sudarsan, A. (2009). Performance Appraisal Systems: A Survey of Organizational Views. The Icfai. *University Journal of Organizational Behaviour,* 3(1), 54-69.

Susskind, R. (2013). *Tomorrow's Lawyers: An Introduction to your Future*. Oxford University Press, United Kingdom.

Yusuf, M., Isyaka, M. S. and Aina, O. K. (2014). The Impact of Management Information System on the Performance of Business Organization in Nigeria. *International Journal of Humanities Social Sciences and Education,* 1, 76-86.