A Secure On-Line University Clearance System for Graduating Students Using Finger Print Technique for Security Authentication.

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Abstract

Information technology has been developing over the years. Many actions are taking place via online. This has raised issues of information security held in databases for many organization. In this project a Secure online university clearance system for graduating students has been developed using Finger print for authentication. The reason for this research is to provide a better form for clearance other than the manual process that have been found inefficient. The system will aid students in processing school clearance online. The system is designed using XAMPP (Local Server) technology because of its robust nature. A student registration page interface has been developed to entail all vital information about a student. Another page called student Login Page has also been developed to allow the said student to input the matriculation no. and a password after which the system launches the student home page where he or she is allowed to make clearance on school fees, departmental and library clearance. The Finger Print System is used to give access to only valid students. It was designed to relate with central Database of Students upon Admission Registration. An automated system of clearance criteria are domiciled at the four various points of Students clearance in which our proposed system will relate with it centrally to give an up-to-date status of the clearing student.

Keywords: Secure, Clearance System, Finger print

Introduction

The University system is a special sector of the public service because of it's defined structure and result oriented nature. Every operation in the University is time bound and the goal of any operation is not achieved, if it is not accomplished within a given time frame, (Sowari, 2004). The University is a citadel of learning and excellent education with the vision of creating a centre of excellence in graduate studies (Uniport Anthem – 2007).   There are several faculties and schools in any given University system. The schools and faculties operating together makes the system multitasking and can be called a Multiversity. It is not a "grove of academe" which Newman C. and Kerr .J (1963) regarded as consisting of "teachers and learners from every quarter'. Multiversity is marked by separable and specialized activities of several communities of undergraduates, humanist, social scientist, administrators; it's edges are fuzzy: it reaches out to the alumini, legislators, farmers, business men who relate to some or more other communities.

The incessant complaints and bitter experiences from graduating students about the ambiguous processes and time slack involved in processing the clearance is what gave birth to this research work. Moreso, the security measures used in various applications is also of greater concern in the work.

Currently, students of Uniport undergo the manual process of clearance which is usually time consuming and stressful on

both the students and the clearing personnel. Upon completion of a course programme, the student commences the clearance by obtaining the Clearance Form from the department. This method has been found very ambiguous and inefficient. More pathetic is the fact that such manual processes are not secured. On line activities are quiet numerous and posses insecurity to some extent, hence it is very important that transactions made on line be secured for only valid users. Finger print security authentication is one of the various forms of security checks. It is reliable and well believed that two different individuals cannot have the same pattern of finger print. Finger print technique breaches the gap for invalid users. Invalid users in this context are students who are still indebted to the school, have one or more unfinished course work, etc.

Aim and Objectives of the Study:

Our aim of this dissertation is to develop a secure on-line University clearance system for graduating students using finger print technique for security authentication.

The specific objectives include:

i. To develop a secure database model for on-line students clearance.
ii. To implement the model using PHP – Hyper text pre-processor.
iii. To authenticate the model using finger print as the security technique.
iv. To evaluate the model using time matric

Materials and methods

The running of the program and the implementation of the system demand an effective computer system with the following minimum requirement:

Hard Ware Requirement:

- A processor machine of Pentium IV standard with 800MHz speed

- A memory (RAM) size of 256MB or above
- A Video Graphic Adapter (VGA) screen with 24bit high color or 286 color
- A disk space (Hard disk) of not less than 1GB
- A server Machine

Software Requirement:

Windows Operating System or Windows Server . A JavaScript Enabled browser of Internet Explorer 7 and above or FireFox 2 and above, Opera 9 and above, Google Chrome or Hot Java. Internet Information Service Servers executing on local host or on the remote machine MySQL Server executing on local host , PHP 5 Engine Running on the APACHE Web Server. The programme was implemented using the XAMPP technology. XAMPP Technology/language was used because of its' robust and simple nature. PHP is a XAMPP technology tool used for communication and information, it is a very potent tool used for online applications. The system was designed using the Object Oriented approach, which has enormous importance such as: usability, ease of maintenance, ease of re-use etc. MySQL was also used as the database server.

Proposed system

Figure 1.0 overleaf is the diagram of the proposed system. This system is far better and more efficient than the manual system. It relieves stress on both the students and the admin officers in charge of the clearance thereby creating a robotics environment for prospecting students. This system checks and authenticates valid students. It Admin officer in charge of clearance interacts electronically with the Library, department, bursary to ascertain the validity of a student before proceeding on to the clearance. After the various stages of confirmation, it moves on to enable the student print an e-copy of the Success letter, takes it to the Registry

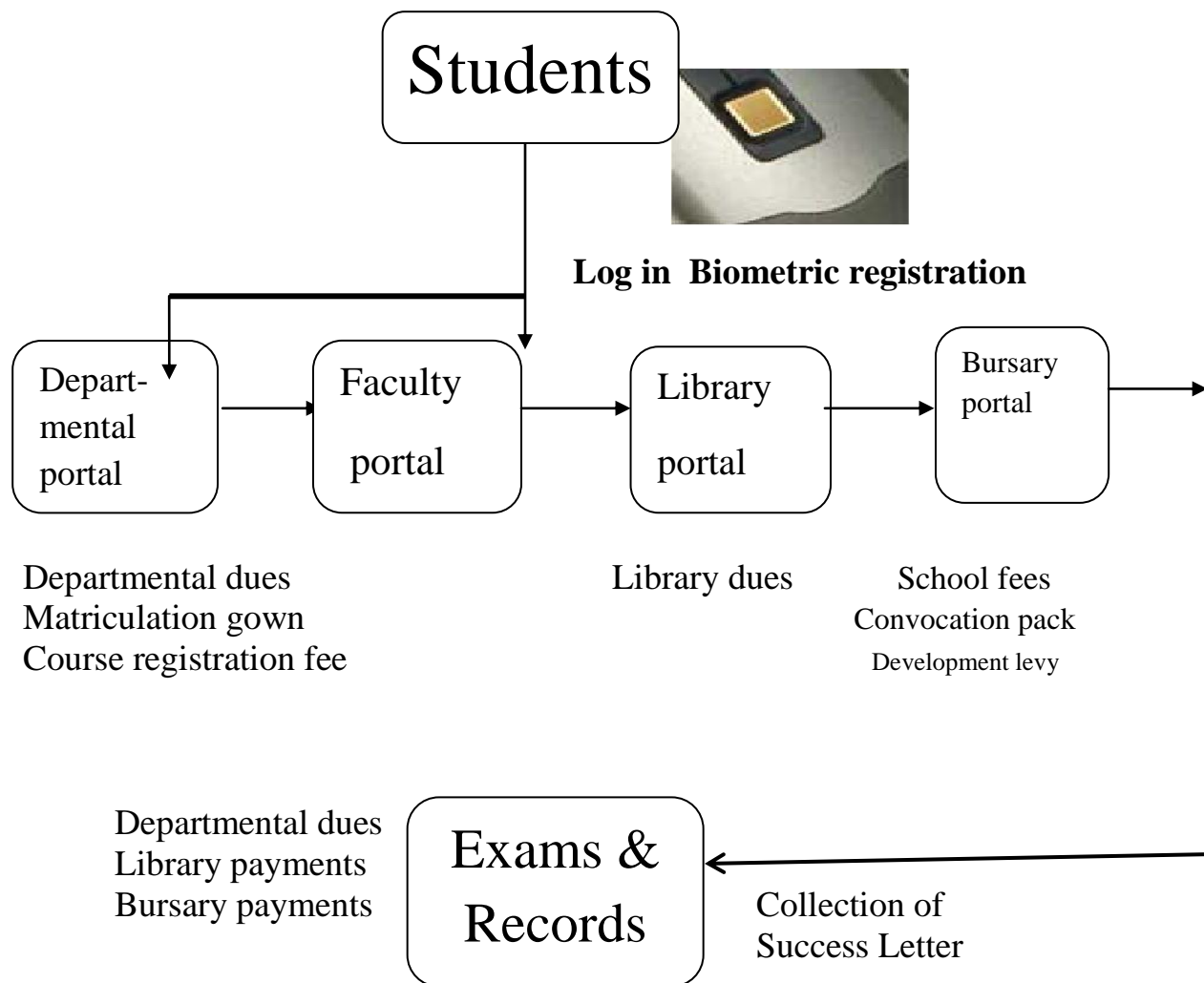unit (Exams & Records) to print the original   copy.

Students

Log in Biometric registration

| Depart-mental portal | Faculty portal | Library portal | Bursary portal |

Departmental dues
Matriculation gown
Course registration fee

Library dues

School fees
Convocation pack
Development levy

Departmental dues
Library payments
Bursary payments

Exams & Records

Collection of
Success Letter

Figure 1.0: Architecture of the Proposed System

Result Performance Evaluation:

This research work incorporates the use of several interfaces for displaying results, and server system for storage in databases. The last stage of the processes is the printing of the e-copy success letter – figure 1.1. In the performance evaluation, time matric was used. Instead of the longer time being used in processing manually, it has been drastically reduced as depicted in table 1.1 overleaf.

In figure 1.1 Interface for Success Letter output

Table 1.0: PERFORMANCE EVALUATION

Clearance phases	Existing system	Proposed system
Departmental	2 or more weeks	5 mins
Library	2 or more weeks	5 mins
Bursary	2 or more weeks	5 mins
Exams and records	2 or more weeks	5 mins

Discussion and Conclusion

Using the proposed system, the secure online university clearance for graduating student has improved, made easy and stress free for student to obtained their success letter/certificate and also for the staff in the appropriate units of clearance to work perfectly without delay.

We developed a secure online university clearance system for graduating student using Finger print for security authentication – a case study of the University of Port Harcourt. MySQL was also used as the database server. This server houses information gathered from the student's department, library, and bursary units. Online clearance is not just about developing a web application, it is also the basic tool developed to control the security of information using Finger print for security authentication. It is believed that no two individuals (students) can have the same finger print. The system developed made ease of transfer of information to enable rapid delivery of information and timely clearance for graduating students.

CONTRIBUTION TO KNOWLEDGE

This work will undoubtedly eliminate the stress involved in processing students' clearance manually. The world is advancing digitally; as such the work will certainly make the university to catch up with modern trends of going paperless in the nearest future.

RECOMMENDATIONS

Secure online University Clearance system promotes effective, efficient and rapid process of clearance to both staff and students. We recommend this research work to university staff, both teaching and non-teaching and also to students especially students that have keen passion for PHP Programs, it will serve as an inspiration to develop more complex system. We equally recommend this project work to post graduate students for further modifications to include payment portals which as avertedly omitted due to complex e-payment challenges that is linked with such payment portals. We also recommend this work to researchers that will find this work useful as an inspiration in carrying out other related researches that will need the use of the tools that were deployed in this work

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