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Result Alert System through SMS and E-mail

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Abstract: *With the advent of mobile network communication system, users have been offered lots of services such as ability to send multimedia messages like SMS, Video, Data files, Images e.t.c. This paper describes the design and implementation of a system (Result Alert System) that conveniently provides examination results to students with the use of Email and SMS technology via their Mobile phones and devices.*
Mobile phones and devices are necessary assets, most especially to students as it makes communication and the spread of information a lot easier. Result Alert System takes advantage of some of the technologies that Mobile devices provide, technologies such as the Email and Short Message Service (SMS). The implemented system allows registered students to access their results, including past results, provided they are available in the system's database.
Keywords: *RAS- Result Alert System, SMS- Short Message Service, PDU- protocol data unit, CSS- Cascading Style Sheets, PHP-Hypertext Preprocessor, API-Application Program Interface, MMS_ Multimedia Messaging Service.*

I. Introduction

We are living in the era of information revolution, with a lot of devices such as computers and mobile devices sprouting everywhere thereby making it easy for information to be communicated, and the education sector is not left out in this growing development. Computers and mobile phones have become an unavoidable part of our lives. There are a lot of things which we can do with these technologies. With the rapid development of mobile phones come several services like the Short Messaging Service (SMS), Multimedia Messaging Service (MMS) and others, which are readily available and add to the usefulness of mobile phones. The availability of such communication mediums in any institution makes it possible for information to be passed on to students as soon as they are available.

Result Alert System is a system that can be used to overcome the limitations most of our institutions of higher learning face in making the examination results and grades available to students. The major advantage this system offers is that students can receive valuable information on the fly, easily and conveniently. SMS and E-mail play a major role in the implementation of this system. SMS and email have become important services today due to their usefulness in conveying information from one place to another in a very fast and easy way.

II. Overview Of The Existing Work

Most Institutions make use of a web based platform to provide Examination results to their students when it is available; this is a common practice by various Universities. The students provide certain information before they are able to access their results as this provides protection from unauthorized access. Web based platforms (websites) are readily available platforms and can provide various options such as saving and printing. But this platform becomes inaccessible if the user has no access to the internet.

Web based Result Alert System is a good options in a country where internet is readily available, but in a country where internet services are poor, it can be inconvenient and expensive. Students would have to visit a cyber café and pay to gain access to their results.

The real impetus for the mobile devices started with the arrival of web 2.0 applications especially the active participation of the user towards the web which has pushed the growth of mobile devices in academic institutions. When we look at the different gadgets used around us it's obvious to note most of them are wireless. "Everywhere we go we cannot help but notice the number of mobile devices being used; cell phones, ipods, ipads, android devices, MP3 players, GPS systems, blackberries and even mini-laptops". Jacobs (2009) observes that "mobile access is the remediation of wireless internet". Libraries which play an integral part in the dissemination of information has always tried to use the opportunities created by technologies to provide innovative services to its users. Starting from the advent of microprocessors in libraries each technological milestone has created new and innovative services in the library realms. The latest innovations are the use of mobile technologies in library services.

There are several approaches to send an SMS message from a computer to recipients. The message can be sent from a computer with a mobile phone or a GSM/GPRS modem, or it can be sent from a computer to the SMS center or SMS gateway of a wireless carrier, then, to the recipients. The former has slow transmission

speed (about 6 messages per minute), while the later is very fast, but it involves more network wiring and routing. Considering SMS alert messages will only be sent when there are triggers, its traffic will be small in general. In order to send alert messages from the SMS server with more reliability, GSM/GPRS wireless modem will be selected, which allows the use of computer with AT commands to control the modem to send the alert messages directly (Wavecom, 2004). This technology of sending information through mobile application is not limited to the academic sector, it caught across several sectors like financial sector, health sector e.t.c Murthy (2008) explores primary health-care management for the rural population. A solution proposes the use of the mobile web-technologies in providing the PHC services to the rural population. The system involves the use of SMS and cell phone technology for information management, transactional exchange and personal communication.

III. Methodology

The result alert system with email and SMS was designed to work as an online application or software. The system was designed to have a point of Entry which is to be used by the Administrator with the login privilege and role granted. The Administrator is responsible for the following: registration of students, result upload for registered students and generating alert reports to all concerned students when new result updates are available. These alerts would be sent to the phone number the student provided at the point of registration.

This system was designed using the following: PHP programming language, PHP designer, Javascript, Css.

PHP is the key language used in the development of the software (RAS). Php is a script language for designing a web application. It has feature that comfortably aids the programming of the various tasks needed in developing a dynamic web application. Cascading style sheet came into play in giving the interface an aesthetic look.

The database of the system was designed using MySQL. MySQL is particularly popular for use with websites that are designed using PHP

For the system (RAS) to perform its proposed function, which is Sending results to students via Email and SMS technology, an SMS gateway was integrated into the system using an API. The system takes the messages to the message gateway which is going to be outsourced to another server. The target server receives the message and then re-routes it to the target device (Phone) using the number. On the side of email, the system simply composes the text message and sends the result to target email address. However, in both cases reliable internet connection is a key factor for this process to work as expected.

IV. System Architecture

The diagram in Figure 1 shows the system architecture of the proposed system. Student initiates the examination results retrieval process by sending SMS to the specific number provided by the system. The required information to be written in request SMS are Full name, Matric number, department, semester and session. These information are set as requirements for request SMS in order to suit with the institution's regulations. This information together with the sender's mobile phone number are then sent to the GSM modem via GSM network. This software firstly converts the messages from PDU mode to text mode and then saves it in its database. In this interaction, SMS gateway sends the sender's information to the system application for validation. This validation process is done by comparing the received information with student's information in the database. All examination results are stored in this database. If the validation succeeds, the system application retrieves the matching result from the database, The system application then forwards the result to the sms gateway , from the gateway to the GSM modem. Finally, the GSM modem sends the message to the student.

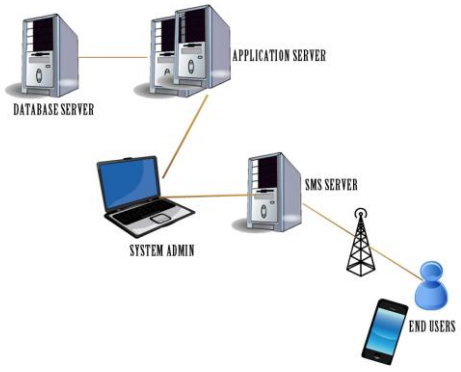

Fig 1: System Architecturre.

V. Results And Discussion

Figure 2 shows the screen shot of where the user (student) can provide his or her unique identifier in order to gain access to his or her results.

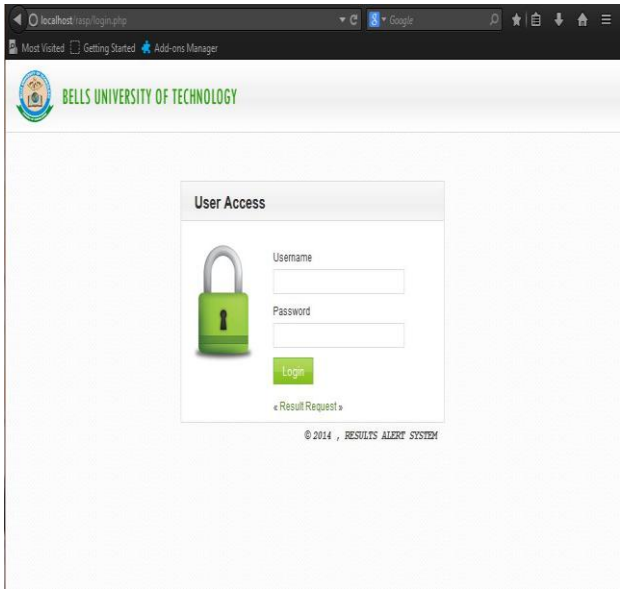

Fig. 2: Screen short of Students Login Page

Result Request Page

This page is for students requesting for their result, the system only accepts request from students who are registered in the system and have their results also uploaded in the system. Students are able to choose how they want their results to be communicated to them, either through Email or SMS. Figure 3 depicts the result request form. If the result requested for is not available, the system responds with an error message " Requested result not available" as seen in Figure4.

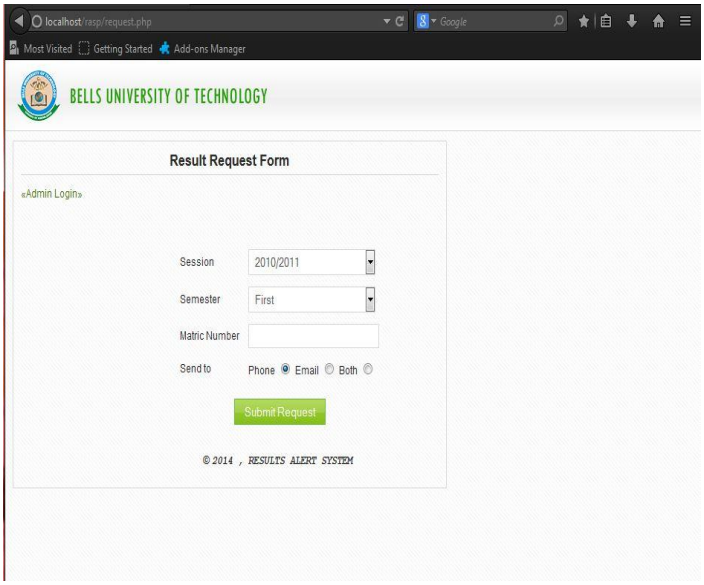

Fig. 3: Result Request Form

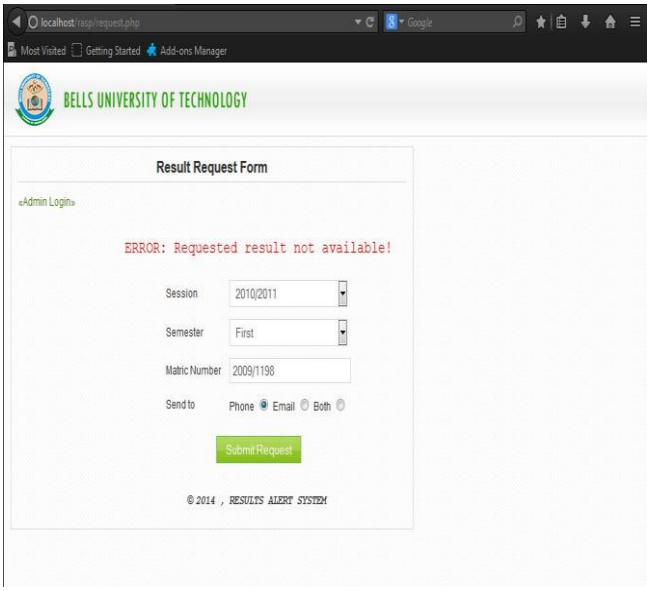

Fig. 4: Request Error Message

Menu

The Menu is the page the user sees, immediately after gaining access in to the system. It contains the following tabs; Students requests, Send results, Register students, Update student records, Upload Student result, system settings. System statistics and system information are also seen on the menu page, this is shown in Figure 5.

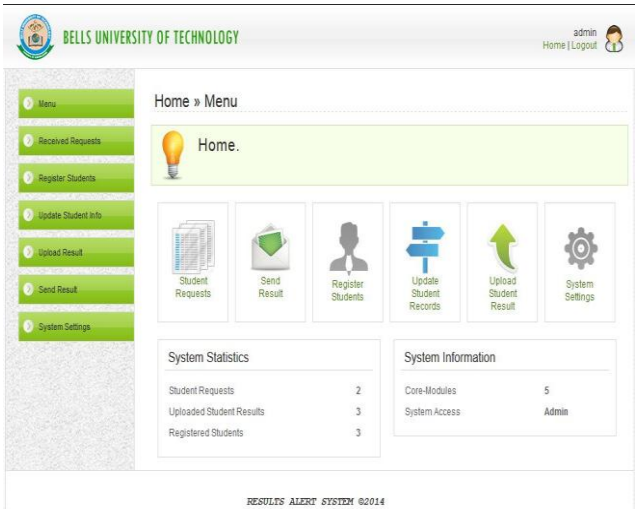

Fig.5: Home Page

Send Result.

Figure 6 shows the page where the result is sent to the students. This page enables the administrator to send results to registered students. When the result is sent, it goes through the SMS gateway before sending the results to the phones of the students and also their email addresses.

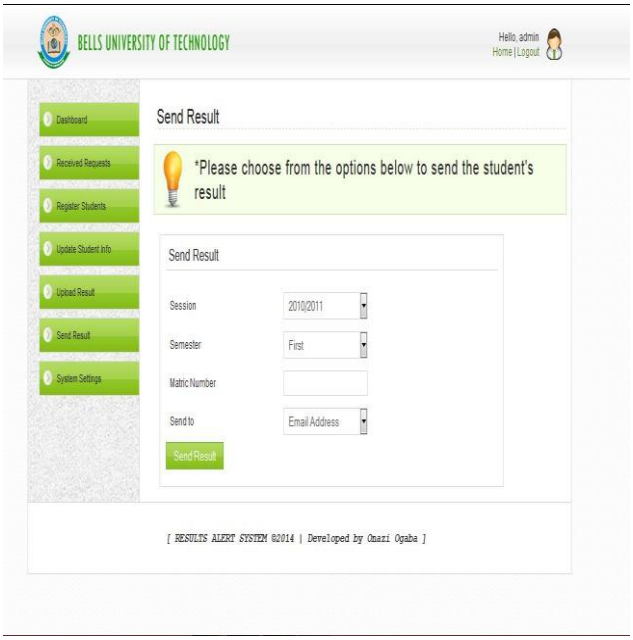

Fig. 6: Send Result Page

VI. Conclusion

Result Alert System with Email and SMS is an innovative addition to the education sector, as it makes the availability of results and grades a lot easier and efficient. Also it makes Email and SMS technology relevant in Educational sector.

VII. Recommendation

The result alert system should be adopted by the university, various departments can also adopt the system as it would help availability of result and also help in reducing the paper work involved in compiling and storing results.

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