

Design and Implementation of Online Past Question System: A Case Study of the Department of Computer Technology Yaba College of Technology, Lagos, Nigeria

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ABSTRACT

It takes several reading materials for students to adequately prepare for standardized examinations, one of such materials are the past questions. The efficiency and effectiveness of past questions cannot be over emphasized over and over again students who make use of them triumph in their examinations. In as much as students want to make use of past questions, there are however factors that militate against the timely accessibility and availability of up-to-date past examination questions. This electronic past questions project prefers solutions to the existing system, thereby, providing past questions anytime, anywhere over the internet. The present system was analyzed using a standard procedure file organization and system analysis. Hypertext mark up language, Hypertext pre-processor, javascript, MySQL were used to code the program modules to the developed for the system using some computer aided design tools. This research work therefore present development of an online past question system for students in the department of Computer Technology, Yaba College of Technology, Yaba, Lagos. The online past questions system is envisioned towards reducing the cost and difficulties experienced by several students when trying to access accurate, reliable and up-to-date past examination papers. It is recommended that each Higher Educational Institution (HEI) should develop its online -past question system with more features.

Keywords: Online, Examination, Past Questions, Hypertext Makeup Language , MYSQL

Aims Research Journal Reference Format:

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1. INTRODUCTION

A number of materials are needed for students aiming to attain success in examinations. Some of these materials which include textbooks, handouts, lecture notes etc. are of utmost importance if any student is thinking about examination success. Another educational material that its importance has increased over time are the past examination questions. Past question which is short for past examination questions is a collection of previously set examination questions which have been used to test the knowledge of candidates or students at earlier times or years. The saying that “there is no new thing under the sun” totally explains why past question has become a must in the diary of every successful student. This is because there is no examination where at least 75% of questions asked have not been asked sometime before though the new question may not be in the same format. Past questions also familiarize students with the possible timing for the examination, possible format of the questions and even possible exam questions. It also give students a direction on what to read thereby preparing the student with the right tools to tackle the examination.

An examination is refer to an assessment which measure test-takers or students' knowledge, intelligence ,skill, physical fitness or aptitude(Wikipedia,2015). There can be verbal administration of test or examination , examination or test can also be done paper or on electronic devices such as the computer (Wikipedia, 2015). Examinations are basically used to test individuals on their knowledge about a particular subject. Standard examinations dates back to 605AD in the ancient china where they implemented the first standardized test which is imperial examination. The specific objective of the imperial examination was to select candidates for some specific government positions.The examination system was adopted in order to select candidates for positions into civil service in 1806.The examination was later introduced to education in London and Oxford.

Written examinations was instituted to access the pupils' aptitude by the universities from mid-19th century.Modern day examination bodies which include Scholastic Assessment Test, American College Test and General Certificate of Secondary Education are results of this revolution. In Nigeria, standard examinations were prompted when the Local Examination Syndicate of University of Cambridge, School Examination Matriculation Council of University of London and West Africa Department of Education were able to meet in 1952. West Africa Examination Council was the result of this meeting. Other very prominent examination bodies in \Nigeria includes National Examination Council, National Business and Technical Examination Board, Joint Admission Matriculation Board etc.

Conquering standardized examinations has always been an herculean task.But over the years it has been observed that when students study with past questions, it puts them in a better position to succeed in such examinations as it familiarizes them with possible timing. Format of question and even possible questions.As of now examinations like SAT sell their past questions along with their forms providing past question in manual form like book sand in digital form like phone applications, computer software and also on the internet thereby making it easy to access these past questions. Sadly, in Nigeria most Higher Educational Institutions (HEI's)have little or no provisions for onlinepast questions. Only the National Open University (NOUN) and few private universities provide past examination paper support. Private universities like Redeemers University and Covenant University provide e-learning facilities on their website and integrate e-past questions into them.

Most federal HEI's including the University of Lagos and Yaba College Of technology practice little or no e-learning and even those that practice are yet to integrate past question into their systems. This has left students of most federal institutions to the only alternative means which is to buy the bulky, incomplete and limiting past questions sold by unauthorized individuals on campus. This research work therefore digitizes the past question of the Department of Computer Technology, Yaba College of Technology thereby tackling all the problems associated with the manual version and meeting the needs of students.

2. LITERATURE REVIEW

2.1 Theoretical Background

Examination is a pivot which the whole system of education revolves and the failure or success of candidates in examinations is an indicator of the success or failure of a system of education Waliyat (2009). To be among the successful in examinations one need to have a studying technique that is efficient, timely and effective. Preparation for examination is not a day job rather it a sequence of activities done overtime.

Broadly, we can say It starts from receiving lectures, taking down lecture notes, hours of extensive reading and research before revision , which is the final stage of examination preparation. During revision students like to test their knowledge about the particular subject or course they are preparing for and majority of students achieve this by looking into past examination questions of their educational institution or examination body.

The unavailability of these past examination papers has distorted the reading circle of a lot of students and hampered students especially those in higher educational institutions in Nigeria from making excellent grades. This has led them to not being able to convincingly pass their examinations. I do not mean that availability of past questions will make all students pass examinations excellently I only propose that with past examination question students will have a better chance at passing examination. The existing system used to store past examination questions is manual. Individuals gather examination scripts from students after their examinations, they compile them, make photocopies, spiral band them and put them up for sale. This manual system comes with a couple of shortcomings, most of which affects the students or users of these past questions negatively.

The major weakness of this manual system is the source of data for the past question compilation. The method used to gather these question paper involves them going from one examination hall to another seeking questions from students or picking the once left over by students after their examination. Sometime students may not be willing to release their question papers or assuming the examination is of several types (type A, type B etc.) it is usually difficult for them to get all of those examination questions and since they have no alternative source to seek for those questions they go on to compile incomplete past questions.

Another problem associated with this manual system is redundancy. Purchasers of the manual past questions often complain about the unnecessary repetition of some question papers and also the inclusion of question papers that are not related to their discipline. This act makes the past questions unnecessarily bulky. Another setback of the manual system is about visibility. Because the question papers are later photocopied for sale, some of the question papers lose quality. This is due to variation in photocopy machine quality, if the output of *one pi* the machines used is faint, after a couple of photocopies, the output will definitely be poor. Finding past question that are very visible is one of the target of purchasers.

2.2 Electronic-Past Questions as an Application of E-Learning

E-learning as the name implies refers to the use and inculcation of electronic digitization and devices into the learning process. There are several educational resources e-learning provide as it serves as a source of scholastic research materials, platform for group discussion, a platform for assignment submission, source for educational materials (video tutorials, practice questions, lecture notes etc.), live lecture streaming and online assessment.

Major e-learning systems allow students to test and measure their progress and knowledge by taking online tests or by proving past questions facility. This is where e-learning comes into play. E-past questions is perfect branch of e-learning that provides past examination questions for students to use online or to download. E-past questions can be categorized under Computer Aided Learning or internet based e-learning because it make use of the internet as its main focal point.

2.3 Review of Related Works

Several scholars around the world have explained why and how to go about the process of digitizing past exam papers in order to provide effective and efficient online past exam paper system. This part of this project work reviews some of the thought of professionals about the whole process.

According to Rose (2005), who worked on "the Exambase Project at the University of Auckland: Electronic Provision of Past Exam Papers 2001-2005" explained the structure of the Exambase system. It started from the collection of examination papers (hard copies and available soft copies) then scanning the hard copies and converting them into pdf format. After that, they uploaded the pdf files to their web server, catalogued them and finally designed an appropriate interface for staff and students to access them.

(Sally, R. and Jon, 2001) who worked on a journal titled "Exam Papers on Demand" He also gave a technical description of the pilot project carried out to provide electronic past exam papers for the University of Surrey. The system consist of three parts; which are; administrator's interface , Learning Support Unit (LSU) processes and end-user interface .

Sally and Jon (2008) also explained that the design of the system made it easy for finding the copies of what the users required. After an evaluation exercise was carried out on the new system it was revealed that the students thought the new system was convenient, quicker, more beneficial and cheaper than the current provision of papers and more papers are to be added. Staff believed system would benefit their students.

The author presented that problem associated to accessing past exam papers by off campus, distance and part-time learners is addressed by the system. The system made use Adobe Acrobat Reader to convert to pdf because it enabled easy download for free of charge and the system is also a cross-platform tool.

Rose (2005), work on "Exambase Project at the University of Auckland: Electronic Provision of Past Exam Papers 2001-2005" stated some of the main issues that affected the effective implementation of online past exam papers in the University of Auckland. He stated changes in course code, who's responsibility it was to store the exam papers, loss of revenue, authentication, hardcopy or softcopy and cooperation from the examination office and library as the major drawbacks of the project.

She explained that the school and its examination office were not interested in storing past exam papers for student use that only the library and the departments were interested in providing online past exam papers for students use. He also stated that they encountered problem when they found out that the institution restructured course codes of most courses in 2001. This restructuring made every course had two course codes (former and present). The project team decided to work only with the present course codes and stated collecting only past papers from 2001.

Sally, and Jon (2001) put forward how its own system solved some of issues of past exam paper that were provided by the school library. They stated that the adoption of the electronic system made the library to no longer hold printed versions of the papers, thereby saving space. The system solved the problems of vandalism and incomplete copies. The online system also solved the difficulty of finding the required number of paper by users. This system enabled library to supply students and staff with the past papers they require simultaneously thereby, eradicating the problems of busy periods at the library due to search for past exam papers.

Akinniyi (2014), after carrying out a survey using questioners in 11 universities in south west Nigeria, wrote a journal on the "Examination of Digitization Capacity and Skills of Academic Librarians in Nigeria". This result of the research revealed that digitization is in its infancy in Nigeria and that there is need for more sensitization by United Nations Education & Cultural Organization (UNESCO), which is concerned with digitizing of world knowledge. International Conference on African Digital Libraries and Archives etc. He also stated there is need for these bodies to raise awareness among Liberians and Libraries about the gains of digitization and emphasized that this could be achieved by organizing trainings, symposia, seminars and workshops and some other other sensitization approaches.

(Akinniyi, 2014), also called for more digitization of educational materials in Nigeria, he noted that the number of university libraries is increasing and that intellectual outputs of faculty staff needs to be digitized in order to build institutional repositories. Implementing Library and Information Science literature in institutions have been reported to yield success stories. Akintunde and Anjo (2012) reported that University of Jos Library made it became the first institution in Nigeria because of its digitization activities and the institution was second in Africa in 2009 to establish an institutional repository.

3. METHODOLOGY

3.1 Analysis of the Existing System

There is little or no provision for past examination papers for student use in my case study; the Department of Computer Technology, Yaba College of Technology. The only way student get past questions is from vendors in the school business centers. These vendors collect examination papers after each examination using various methods. Most times, they collect directly from students or they send their agents to go to the examination areas after examinations to pick useful and neat left over examination papers. After collecting several examination papers, they organize and arrange them based on the departments (e.g. Department of Computer Technology) which the examination papers fall and based on their classes (National Diploma I, National Diploma II etc). After selecting related papers, they create a master copy. This master copy is photocopied, spiral bounded and prepared for mass production.

3.2 Analysis of the New System

The e-past question system is centered on a robust website which was a rich and interactive user-friendly interface. This website serves as the front end of the system. It provides two options for users; regular and premium. Regular users are only allowed to see a tip of the ice berg as they can only view the list of available past papers, see the available features but they can only access the sample exam paper. As a premium user, you have access to several past questions, tutorials and answers. A premium user is a registered user in the system. To register as a premium user, you are required to enter your details (name, username, phone number, e-mail etc) and are required to pay a particular fee after which a unique password would be generated for you. After this registration, you are required to login using your username and unique password in order to access all the facilities of e-past questions.

Past examination paper in the system are categories based on their course code, class and academic session. Activities on the website are co-ordinate by the page administrator (admin) who is in-charge of updating latest past questions, uploading answers and tutorial. He is also in-charge of managing which serves as the back end of the system. He can also view the details of all registered users in the system.

3.3 Model of the New System

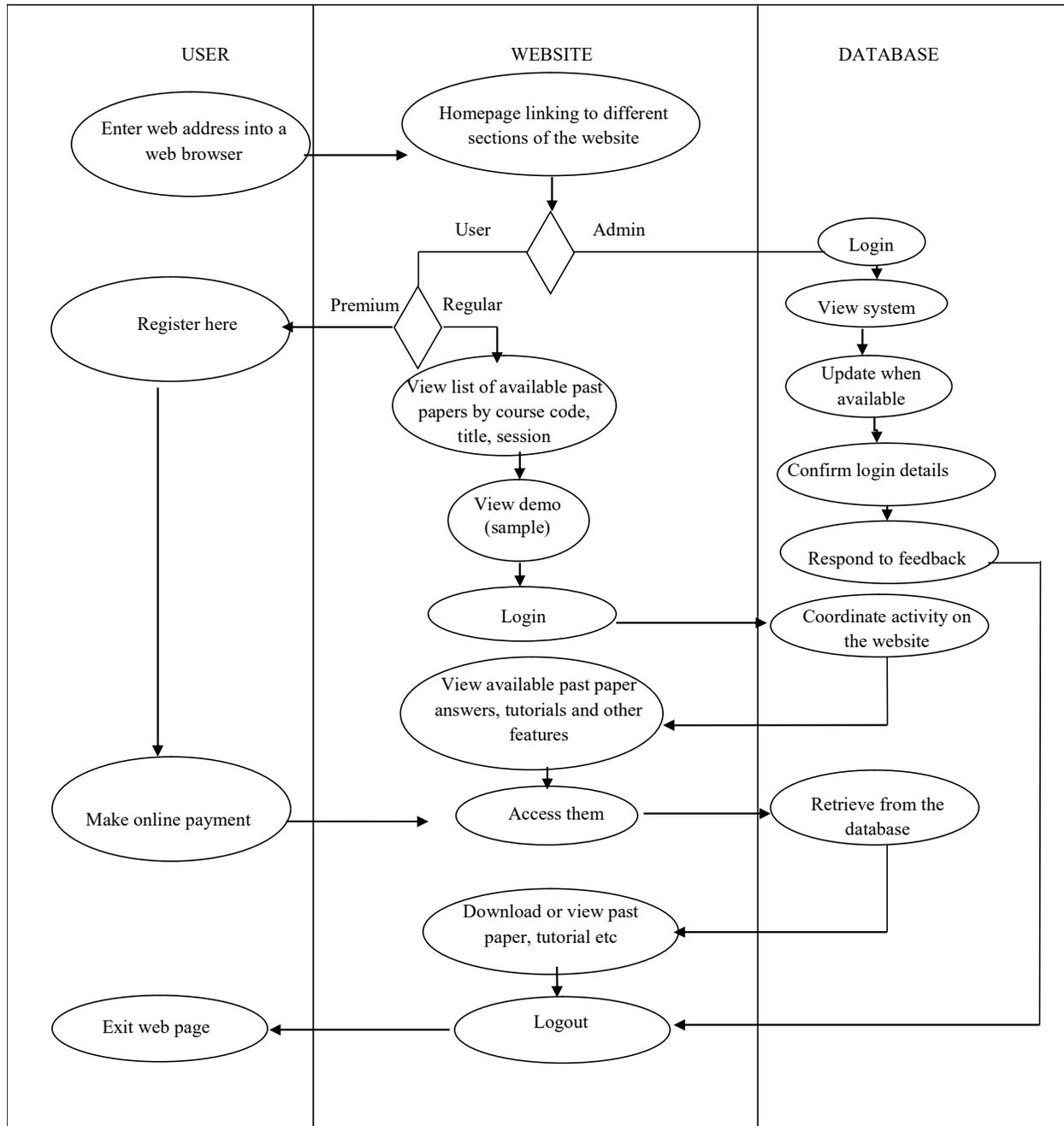


Figure 1: Activity Diagram of the E-Past Question System

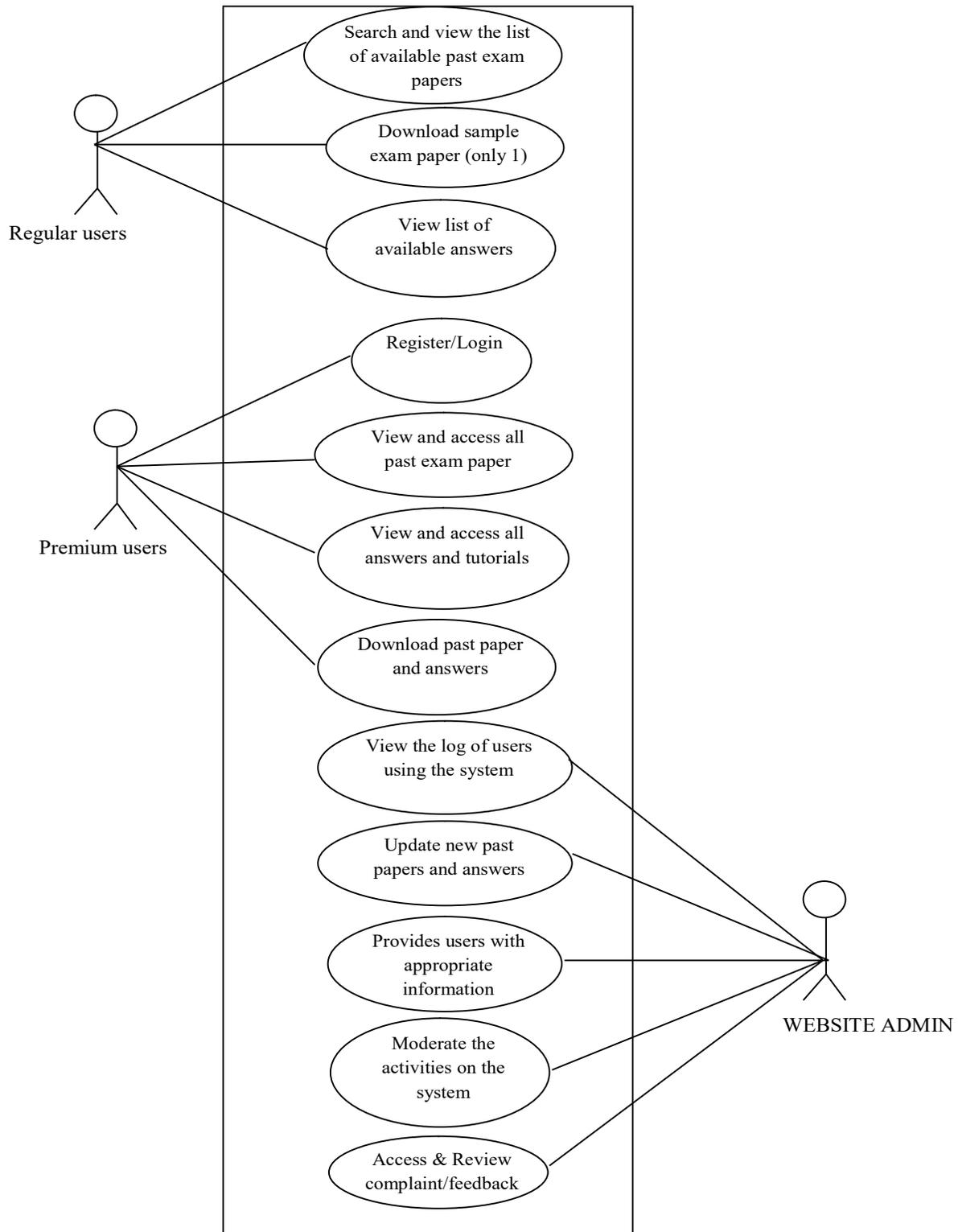


Figure 2 : Use-Case Diagram for Online Past Question Paper System

3.4 Design

The new system uses three designs which are; Input design, Database/processing design and Output design. Each of the aforementioned phases requires different input, data or output respectively. The inputs required from users are firstly during the registration and login phase and secondly when they attempt to request for an examination paper. Output design requires an interface which is represented by the website interface while the processing/database design would be created using the database. The design of this system would require several software tools and professional techniques.

3.4.1 Input Design

Users are required to register before they can become premium users. They are usually required to enter their first name, last name, username, email address, password and phone number. After this has been registered in the database, the users are required to login using their username and password.

The screenshot shows a web registration form with a dark sidebar on the left containing navigation links: Administrative Guide, Register New Admin (highlighted in red), Update Account Information, Manage Documents, and Reply to Messages. The main form area is titled 'Personal Information' and includes fields for Last Name, First Name, Other Names, Gender (dropdown), Date of Birth, Religion (dropdown), and an Upload Image section with a 'Browse...' button and 'No file selected.' text. Below this is the 'Nationality Information' section with fields for Country (dropdown), State of Origin (dropdown), Local Govt. Area (dropdown), and Place of Birth. The 'Contact Information' section at the bottom includes fields for Email, Username, Password, and Confirm Password. The form is styled with a light grey background and red accents.

Figure 3a : Registration / Login – Input Design

The image shows a login interface for the 'YABA COLLEGE OF TECHNOLOGY Online Past Question Management System'. At the top, the college name is displayed in large, green, 3D-style letters. Below it, the title 'Online Past Question' is centered, followed by the instruction 'Sign in to continue to Admin Panel'. The main content area is a white rounded rectangle containing a grey silhouette of a person's head and shoulders. Below the silhouette are two input fields: the first is labeled 'Username or Email' with a person icon, and the second is labeled 'Password' with an eye icon. A prominent red button with the text 'Sign in' is positioned below the input fields. Underneath the button, there is a link that reads 'Click Here for Information about Online Past Question Management System admin Log in Details (A case study of Yabatech)'. In the bottom right corner of the white box, there is a blue link that says 'Need Help?'.

Figure 3b: Registration / Login – Input Design

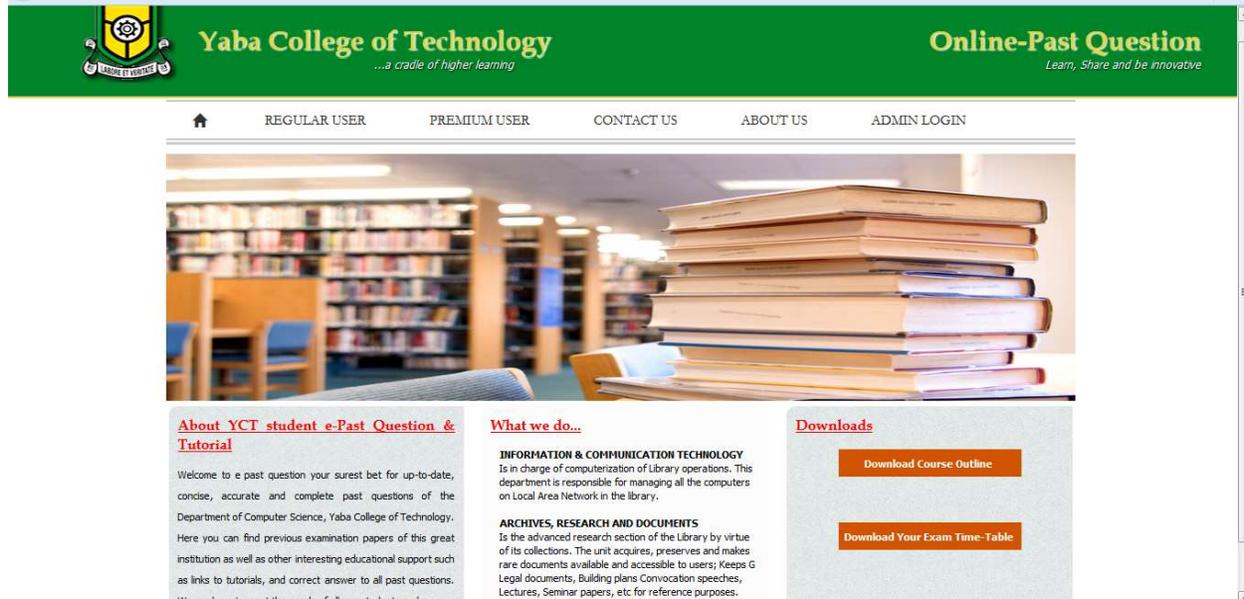


Figure 4: The System User Main Interface Page

3.4.2 Database Design

The database is designed using MySQL. It houses the past examination question papers, it also houses the each users registration details and password information (encrypted password information). Most of the processing of this system is carried out here with the website as its interface.

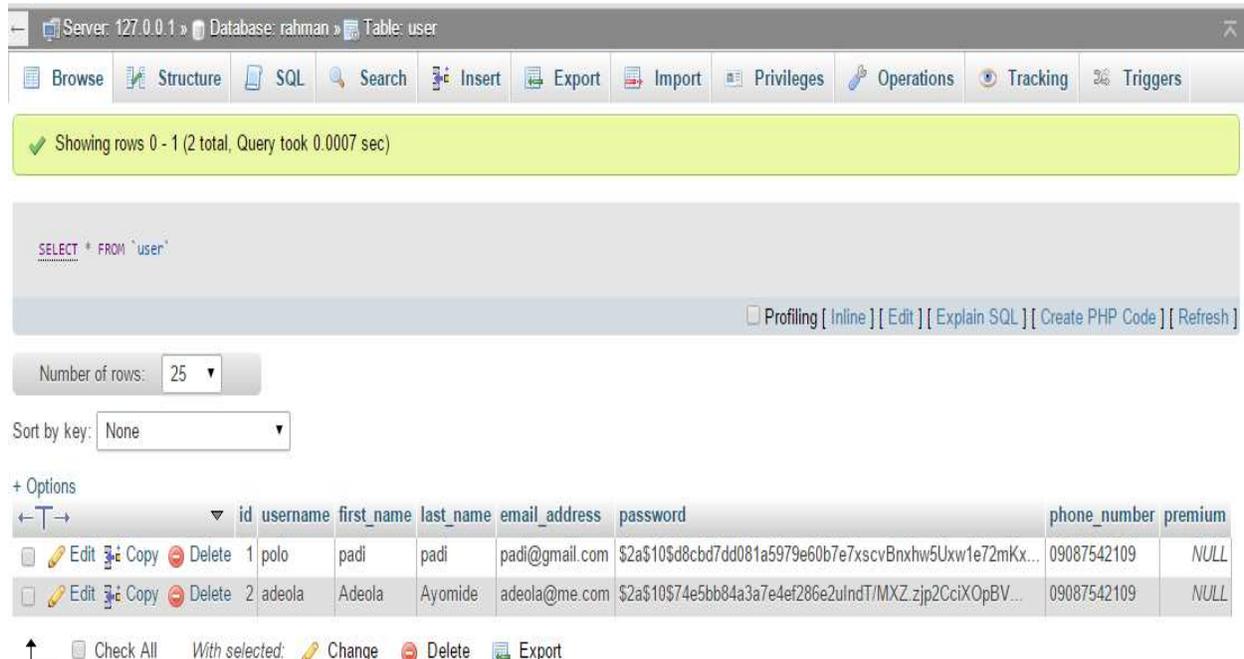


Figure 5: Database of Registered Users of The E-Past Question System

3.4.3 Processing Design

This section is concerned with how input data is processed before sending to the database and Retrieving preferred information from the system. This phase serves as the link between input, database and output. By and large processing of data usually occurs in the Central Processing Unit (C.P.U) of the system. All algorithmic and logical validations in the system is usually carried out here.

3.4.4 Output Design

The output of this system is a downloadable set of past examination papers. After users is completed all the required, he/she can download the past exam paper from the website.

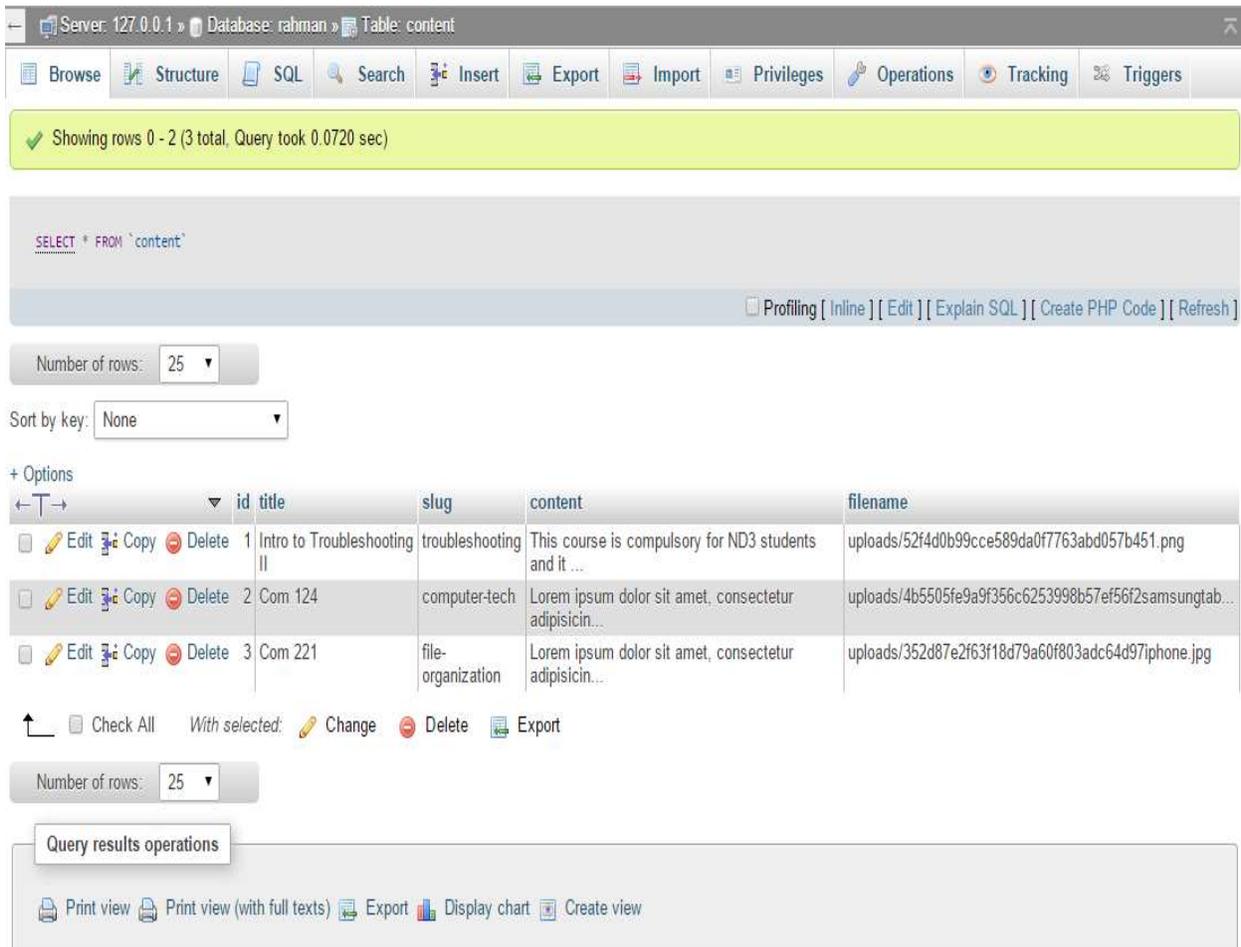


Figure 6 :Output Database of E-Exam Question Papers system

4. CONCLUSION

The online-past questions system is envisioned towards reducing the cost and difficulties experienced by several students when trying to access accurate, reliable and up-to-date past examination papers. This projects software has been created and developed to rectify the limitations and solve the issues encountered by the old system. This system effectively provides up-to-date, concise and timely past examination papers any day anytime and anywhere over the internet.

5. RECOMMENDATION

For a successful implementation of this past examination papers system, the following are recommended:

1. Regular Back-up of important back-end details in case of any system failure or data loss.
2. The feedbacks from the system should be properly considered and be used to improve the system.
3. System Maintenance and should be carried out from time to time.
4. Other departments in Yaba College of Technology and other Higher Educational Institutions can also implement this system in order to meet up with foreign standards.
5. Putting in place computers and other peripherals that would allow the usage of the system and good recovery or back up must be in place for both the admin and the user.
6. Adequate environmental security must be provided for the confidentiality of information and protection of admin database information.
7. Few other components can be added to the system in order to improve the security, effectiveness and efficiency of the system.

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